

What we (don't) know about the sustainability of short food chains

Given the diversity of the initiatives, it is hard to give a straight “yes or no” answer to the question “Are short food supply chains sustainable?”

Involvement in short chains leads to an increase in farmers' income only if certain conditions are met.

These chains are an interesting means of preserving biodiversity and accelerating transitions to sustainable farming



Short food chains are central in the collective imagination of local food activists (see our previous article [Seeing food futures through different lenses](#)), and supporting them is the backbone of many local food policies. However, what does scientific literature actually say about their impacts? In a paper published in *Sustainability*, Yuna Chiffolleau and Tara Dourian, from INRAE (France), show that despite these supply chains playing a major role in the local food discourse, a lot is yet to understand about their actual impacts.

Blurred lines

The first obstacle to establishing a clear picture of short food chains' impact is defining them. The researchers recall that **there is no single or official definition** that would help clarify what they are studying.

Indeed, **these chains cover a wide array of initiatives**. What they all have in common, though, is a limited number of intermediaries between producers and consumers. But apart from that, they greatly vary, from on-farm selling to farmers' markets, farmers' shops to box schemes, consumer-driven initiatives (such as Community Supported Agriculture) to local procurement of public catering or supermarkets. This makes comparing their impact quite an arduous task.

Furthermore, **it is difficult to assess the impacts of similar initiatives in a different context**. For instance, a farmers' markets created in a country where there is no tradition of open-air markets (such as the United States) may not impact the community the same way as in European countries (such as France or Spain) where these have been around for centuries.

Last but not least, **defining “local” proves particularly difficult**, as geography is not the only dimension to take into account. Social or relational

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proximity can also shape short food chains (see our previous article [Defining local: the quest continues](#)).

In a nutshell, given the diversity of the initiatives, it is hard to give a straight “yes or no” answer to the question “Are short food supply chains sustainable?”

Sustainability is multidimensional, so are impacts

Over the last decade, European and North American research projects, in particular, have analysed short chains initiatives. However, Yuna Chiffolleau, who led the review, highlights that **literature remains sparse**. Indeed, it tends to focus on case studies and on those initiatives that are the most activist-led (for instance, community supported agriculture). Large-scale surveys, meta-analysis and case studies of more traditional, low-profile initiatives (such as garden food growing in Eastern Europe – see our previous article [On home turf: resilience of localised production and informal networks](#)) are still scarce.

Impact could be analysed along several lines: **economic, environmental, social, health/nutrition and governance**. In a nutshell, *“the publications reviewed in this paper tend to generally agree on the social benefits of Short Food Supply Chains, their economic and environmental impacts typically elicit more heterogeneous outcomes, while their health/nutrition and governance dimensions remain underexplored.”*

The social impacts of short supply chains are the least debated among scholars. However, research needs to look beyond the more recent and activists initiatives if it is to draw a full picture of these chains’ contribution to the social fabric.

Are these chains providing a fairer price to farmers?

Research has also looked into economic impacts. Expectations regarding short food chains include reducing economic uncertainty for farmers, increasing their income, creating jobs and contributing to the local economy.

Among all potential benefits of short food chains, that regarding **the ability for farmers to make a better living** than in conventional chains is central. Indeed, it is what motivates many farmers to get involved. What does literature says about that?

To start with, this is very difficult to study, as many small-scale farmers do not practice cost accounting, making it hard to trace the impact of shifting distribution patterns.

Nonetheless, European and North-American-based surveys show that involvement in short chains does not automatically lead to an increase in farmers’ income. In order to do so, some conditions are to be met:

- **On-site conditions. Farmers’ training and ability to organise both production and distribution is key** to avoiding burn-out, especially in the first years after founding the farm. Growing organic produce is also positively correlated with an increase in income.
- **Territorial or chain-specific settings also play a major role**. These include the degree of local competition, the level of margin allocated to intermediaries or the fact that processing facilities are accessible close by. The ability for producers to do things together

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(for instance in collective farmers' shops) also helps to increase their income.

No silver environmental bullet

Another expectation regarding short food chains is their environmental impacts. Is local better for the environment? On this point, research starts to provide answers. Life Cycle Analysis is the methodology that is the most widely used because it encompasses all environmental dimensions. However, Yuna Chiffolleau recalls that it has limits when it comes to assessing short food chains. Indeed, **life cycle analysis was designed to optimise long chains and runs into difficulties when analysing the specificities of short ones**. For instance, assessing the impact of a tomato delivered by a long and specialised chain is straightforward enough, as all impacts incurred along the chain can be attributed to the tomato. But we cannot really do that in short chains that produce and sell several products in baskets. Which portion of the energy used on the farms was dedicated to this tomato? And which part goes to the salad that it sold alongside it in the same basket?

Transportation has been a highly debated issue in the past, with results showing that bulk transportation of big volumes from far away can score better as far as carbon is concerned than smaller quantities moved in a non-efficient way (see our previous article [Going beyond local food](#)).

Transportation, is, however, a very small portion of food's environmental impact. **Short supply chains' environmental impact depends on that of the farming system they use**. Literature shows that many short chains producers are already involved in sustainable practices. Therefore, for them, short chains will not increase the environmental benefits. They will, however, contribute to **preserving their activity and the agrobiodiversity benefits that they entail (for instance, the preservation of farmland, or peasant/local varieties)**.

Furthermore, evidence shows that **getting involved in a short chain can help a farmer's transition to more sustainable practices**. This is due to several factors such as pressure from customers, more opportunities to exchange knowledge with other farmers, and, very importantly, the fact that short chains shield from market volatility and provides regular cash flows, making it less risky to embark on technical changes. This, however, depends on the chain, as selling directly to supermarkets that do not accept "ugly" fruits does not help.

Short food supply chains are therefore an interesting means of **preserving biodiversity and accelerating transitions to sustainable farming**.

What we don't know

What is striking in this literature review, however, is how many very important questions we are not able to answer today. For instance: **what are short food chains current contribution to the food system transition?** Long-term analysis with producers, processors, consumers who have recently entered these chains are needed to highlight possible changes in their practices, along the hypothesis that changes induced by short chains also impact long ones, as most people combine both.

But also, as highlighted during the Covid-19 crisis, **how are such chains contributing to resilience of the food system?** How could long and short



chains complement each other? And, for farmers themselves, what is the best balance between short and long food chains given the scale of a farm? Etc.

Let's hope research will bring answers in the next few years.

Exploring the short chain lever

Even if it remains patchy on many topics, research has helped to identify factors that enhance the sustainability of short food chains.

Interestingly, many of these factors are actions local authorities can integrate in their food policy. Yuna Chiffolleau points to a few of them:

- **Making land accessible.** In France, for instance, land is the main obstacle to small-scale farm development.
- **Analysing whether the local area is a good “breeding ground”.** Is the customer base large enough? Are there any processing facilities? If not, should the local authority help to set one up (see our previous article [Food processing: the missing link in sustainable food systems](#))?
- **Opening up opportunities for direct sales** (stands on open-air markets, facilities for collective storage...).

Overall, short food chains may not be the silver bullet to sustainable food systems, but they are definitively worth pursuing as one of the most effective levers.

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