

The subtle equation of sustainable urban food logistics



Why is it so difficult for farmers operating just outside the city of Chicago to sell to people living there? This was the question that led a team of researchers from the University of Wisconsin–Madison (United States) to explore urban food logistics.

Their work, published in a report entitled *Regional Food Freight: Lessons from the Chicago Region*, unveils the historical trends that led to the consolidation of long distance supply chains at the expense of shorter ones, and the limits of the current food freight system. It calls for a more careful integration of food diversity into urban logistics.

How did we get there?

Today's food freight system is very efficient in moving large volumes of food from specialised agricultural regions to urban consumers. However, it also has social, economic and ecological limits. Among those, the fact that farmers producing on a small scale just outside of cities find it difficult to sell to urban dwellers. Indeed, private transport companies want to keep their trucks full and on the road, and farmers who produce small quantities cannot fill these trucks... Many crops once grown regionally and integrated in regional wholesale markets have fallen below the critical production threshold under which transportation is too expensive, and were dropped as a consequence.

How did we get there? The report looks back at the last 70 years. What it depicts applies to the United States, but also to many developed, and even developing countries. **It shows the specific interplay of factors - many of them triggered by public investment or policies - that made it possible to move from predominantly regional food chains to mainly national and global ones.** These are:

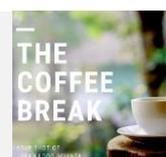
- **The specialisation of production**, i.e. the fact that some regions specialise in the production of a very small number of products in large quantities.
- **The improvements in transportation infrastructure and technologies**, such as highways or refrigerated trucks. This made it possible to transport large quantities of food from specialised regions to consumers all over the world.
- **The privatisation of food terminals**, making it more difficult for small-scale businesses to access such platforms.

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The right balance between efficiency and diversity

What can be done? The researchers highlight that the main problem of the current food freight system is that it has overemphasized economic and fuel efficiency over diversity.

Lack of diversity leads to vulnerability. The current system is highly vulnerable to any climatic, social or political event happening in the highly specialized regions that send their produce all over the world or to strategic infrastructure failure. What if key transportation hubs are prevented from operating? What if specialised regions are affected by climate events or temperature changes? In the United States, the question is highly relevant for regions such as California that produce great volumes of fruit and vegetables while relying on irrigation: what if water resources become scarce in a changing climate?

The equation is not satisfactory either on the efficiency side if we look at the full picture. The current logistics system is reaching a stalemate because of urbanisation - and the congestion associated to it - that increases distribution costs. And, last but not least, ecological efficiency needs to be integrated into the equation. For instance, current trucks were designed to be used in both urban and interstate settings, making them energy inefficient in both situations.

Therefore, there is a need to find a new balance between efficiency and diversity.

Fine-tuning urban food logistics

The good news is that there are ways to preserve, and even improve, efficiency, while increasing diversity. In order to do so, cities need to find innovative solutions to overcome two of the obstacles that leave regional farmers out of urban markets, namely low volume and low predictability of production. Indeed, without volume and predictability, it is difficult for producers to contract with shippers at a reasonable price.

The report highlights some very practical solutions such as:

- **Creating new infrastructure to meet regional food producers' needs.** Examples include investing in food terminals that allow small producers to pool their production. One example of such an infrastructure is the [Ontario Food Terminal](#), in Canada, that caters for 400 farmers and 20 large distributors.
- **Assisting food freight in its transition towards more environmentally friendly technologies.** This includes alternative fuels or hybrid vehicles, but here again, investment in infrastructure can help. Indeed, drop yards outside of the congestion zone would make it possible for trucking companies to only operate big trucks where they are the most efficient, i.e. on interstate roads and switch to smaller vehicles in cities.

Of course, all of these solutions will only be viable if food production around the city is preserved. So Michelle Miller, the report lead author, insists that **a key recommendation for cities is to maintain such agricultural land** and connect with rural communities in order to understand their needs and thus act accordingly.

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Urban Food Futures would like to thank [Michelle Miller](#) for her inputs and comments.

Source:

[Miller, M., Holloway, W., Perry, E., Zietlow, B., Kokjohn, S., Lukszys, P., Chachula, N. Reynolds, A., and Morales, A. \(2016\). *Regional Food Freight: Lessons from the Chicago Region*. Project report for USDA-AMS, Transportation Division](#)

More information on the research can also be found here: <http://www.driftless.wisc.edu/regional-food-freight/>

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