

Sustainable urban food systems: state of the art and future directions

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Introduction

The debate on sustainable urban food systems has grown and the papers giving back a state of the art are rare. Our objective is to present, as far as possible, where we are, which questions have been addressed or neglected and which future research directions are following.

Results

Based on the literature review, the first body of studies provides, principally, diagnostic and assessment tools for evaluating the impacts over the sustainability (in its broader sense) related to the urban supplying organization (logistic, supply point locations, distribution) and material flow issues. Food miles, life cycle analysis, last mile, food deserts, urban metabolism, ecological footprint (etc.) are all concepts and tools that have appeared in order to assess the variables and identify the actor's interactions which that could affect the sustainability of urban food systems. Some of these tools and concepts have, particularly, been used for understanding in to which extent the closeness between the place of production and consumption is likely to tend towards more sustainability.

The analysis of the link between sustainability and localization constitutes a second body of work. Although it is still a matter of controversy, the question of the proximity gives rise to several studies, where arguments in favor of relocalization prevail as local food systems are perceived the best way for constructing sustainable urban food systems. Nevertheless, these studies are often penalized as the definition of local food systems is still confusing and the empirical evidence on their capacity to promote more sustainability remains uncommon. Furthermore, a doubt persists over their ability to feed entire cities. The authors, who referred to the notion of "cosmopolitan localism", defend the necessity of finding a proper balance between the local and the global. The sustainability cannot be reduced only to the relocalization of the production but rather has to be the product of a combination of food models. In other words, it has to be approached through combinations and layouts of diverse elements, whether at the level of nutrients, foodstuff, and technological processes, types of enterprises, supply chains (long

and short) or sources of supply food procurement. The knowledge on how the synergies work still underexplored whilst diversities are recognized to be source of resilience.

Finally, the third body of studies covers the food planning and the urban food governance. It is remarkable to see how the cities seize new responsibilities as food policy-makers, through for example, the Food Policy Councils. Becoming urban food strategy-makers, the cities start to use the public catering sector for laying the first cornerstone in the construction of more sustainable urban food systems. However, the governance of sustainable urban food systems deserves to be addressed beyond the urban territory. The articulation of the city with its exterior environment becomes a priority. There is a real challenge for reconstructing the continuum between urban and rural areas and in the manner of thinking how the exchanges with the faraway lands can be made more sustainable.

Conclusions

In conclusion, three guidelines have been identified from the literature review: (i) organization and spatial dynamics, (ii) relocalization and (iii) food planning. As a complementary approach, there is a need to explore in the future the sustainability of urban food systems in terms of combinations and synergies, through a closed-loop approach (flows and cycles) and beyond the urban territory.

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