

## Éditorial - Editorial

# Food Systems is the new black, but will it really become consumer driven?

The concept of “Food systems” is replacing value chains as the common description of food production from field to fork. From NGOs, to food companies to policy makers, the European Commission and international organizations such as FAO and UNEP a recognition is spreading that we need to change the Food system(s).

A growing segment of consumers becomes more aware about what they eat, how their food is produced and processed – and where. As an example, this urban driving force is behind the growth in organic foods in most European countries. The same trend is observed among the middle class in e.g. China, Peru and Brazil, although in Latin America it goes partly under the term “agroecologia” – a sustainable production supporting family farmers. The re-introduction of farmers markets in many cities is another signal that some consumers are interested in a more direct contact with the food producers. However, how strong is this trend, and will it really be possible to engage a significant proportion of consumers in considerations regarding agricultural production? And, would that solve important problems in our food system?

The global challenges of current food systems are well known, i.e. intensification of farming systems, which has led to significant erosion of ecosystems services including soil quality and biodiversity; roughly 850 million people being food insecure and approximately 2 billion being overweight or obese; food waste being high in fields, storage, retail and consumers kitchens; diets in many countries having (too) high a proportion of livestock products and based on a reduced number of crops while genetic diversity is eroding. Add to this the links with climate change and water shortages, increasing demand for animal protein from the global growing middle-class and a global seed and plant-breeding sector controlled by a few mega-companies with interests in pesticides.

A key promise of the food system concept is to demonstrate that in order to solve these interlinked challenges, actors – from policy makers to food producers, processors

and traders to consumers – need to acknowledge and understand the interconnectedness of actions and their consequences. Improvement of these systems may only come from understanding better how different actors behave in response to their motivations and perceived options in a linked system and how this is influenced by non-linear feedback loops.

Initially, one should acknowledge that large populations – especially children – may benefit from a higher intake of meat and dairy products for improved growth and brain development. However, reducing average meat consumption in middle class populations in e.g. Europe and the Americas and replacing it with vegetables, pulses and new innovative protein sources would at the same time reduce climate and environmental impacts from diets and improve consumer health. Linking these two nodes in the food systems is essential in solving the challenge of feeding sustainably 9 billion people.

Thus, the questions of sustainable intensification of agriculture<sup>1</sup> cannot be separated from the concerns over peoples’ diets. This point seems particularly relevant in relation to discourses revolving around “climate smart agriculture” (see *NSS* 24, 2, 2016, p. 147-153). While this concept is acknowledged to call for cross-disciplinary approaches, it still seems to put the focus on agriculture and landuse. The fact that a main driver in climate impact from food production and consumption is the diet composition should encourage policy-makers and scientists to focus more on the potential synergies in linking agri-environmental and climatic questions with dietary choices and human health<sup>2</sup>. While the food systems framework could bring consumers and producers to consider synergies between

<sup>1</sup> Halberg N., Panneerselvam P., Treyer S., 2015. Eco-functional intensification and food security: synergy or compromise? *Sustainable Agriculture Research*, 4, 3, 126-139, doi:[10.5539/sar.v4n3p126](https://doi.org/10.5539/sar.v4n3p126).

<sup>2</sup> Tilman D., Clark M., 2014. Global diets link environmental sustainability and human health, *Nature*, 515, 518-522, doi:[10.1038/nature13959](https://doi.org/10.1038/nature13959).

healthy diets and climate smart agriculture supporting ecosystems services this would supposedly also have a positive impact on global food security and contribute to several of the global Sustainable Development Goals. However, for such a dream to come true we need to test practical examples and initiatives where the food systems approach will lead to a “Resource smart food system”<sup>3</sup>. Besides being sustainable in the sense of not degrading the natural capital at the back of ecosystems services and having low environmental impact, “Resource smart food systems” should be effective in terms of overall food security, livelihoods and human health. To deal with these multiple objectives influenced by a diversity of actor types requires an integrated understanding, which goes beyond the simple improvement of the ways agriculture responds to consumer expectations.

Although large segments of consumers are more concerned about the price and standard food quality, the food industry and policy makers have noted a growing interest in the origin, production forms and health aspects of meals. Besides creating a market for labelled food with a price premium this opens new avenues for consumer engagement in supporting desirable forms of farming and food processing. Issues such as “food miles”, local/regional food and direct sales, linked with traditional food is for some people more important than “organic” – or goes together with organic food. All these trends form a significant potential for developing more just, informed, nutritious and environmentally sustainable food systems where urban drivers increasingly weigh on food production. The City Region Food Systems initiative supported by FAO<sup>4</sup> and the Milan Urban Food Policy Act aim at fostering the development of resilient and sustainable food systems by strengthening rural-urban linkages and – for example – connecting agri-environmental schemes – such as protecting drinking water – with the development of market access for local farmers who produce according to those requirements.

However, the challenges for such development are multiple, and the science-based knowledge of initiatives and innovations that may create significant changes and deliver transparency is scarce. Conceptually, the notion of linear food value-chains depicting the end consumer as a passive receiver is being replaced with that of “Food systems” as dynamic, complex networks encompassing active consumers, feedback loops and circularity.

Like all such concepts, the term “Food systems” is used in more or less well defined and somewhat normative way. A generally accepted definition is that “Food systems” include farming, processing, logistics and trading, retail and consumption of food and thus consist of the farms, companies, institutions and consumers and their activities and relationships as well as outcomes in terms of resource use, food and nutrition, economics, livelihoods and impact on ecosystems services.

There are signs that new linkages between consumers (also acting as citizens), policy makers and the food and farming industry creating new innovative food systems could boost sustainable development. The strategy of many large and medium size food companies across Europe is to make consumers central to innovation in food products and delivery systems. This requires new forms of connectivity, rather than just the “standard” answer of improved (one-way) communication and information to consumers. A trans-European network of more than hundred food related companies and knowledge institutions has adopted a strategy to “transform the food industry into a sustainable, citizen-centric food system that will allow Europe to retain its competitive advantage, value its diversities and responsibly address the global societal challenges”<sup>5</sup>. This may be a driver for renewed integration of farm production practices in product development, marketing and consumer demand, but it will take more than this to secure the sustainability.

While the idea of an integrated “Food system” is compelling, from a practical and scientific perspective there are challenges in grasping complexity, interdependencies and feedback loops and in precisely defining the borders of specific (innovative) food systems to assess them. It is thus positive that the Food System concept might be central to future EC research policy in the bioeconomy area, judging from the FOOD 2030 policy framework<sup>6</sup> and a new strategic working group on Food Systems commissioned by the Standing Committee on Agricultural Research (SCAR, DG Research).

The studies of urban-rural links presented in this volume of *NSS* give interesting examples, but the issue needs a wider focus in transdisciplinary research aimed at setting case studies into a more comprehensive theoretical and empirical framework, which may support pragmatic and action oriented outcomes.

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<sup>3</sup> Westhoek H., Ingram J., Van Berkum S., Özay L., Hajer M., 2016. *Food systems and natural resources*. Report of the Working Group on Food Systems and Natural Resources of the International Resource Panel, UNEP.

<sup>4</sup> FAO, 2015. Food for the cities programme, <http://www.fao.org/in-action/food-for-cities-programme/approach/crfs/en/>.

<sup>5</sup> FoodNexus, 2016. FoodNexus Position Paper, <http://www.foodnexus.eu/wp-content/uploads/2017/02/FoodNexus-Position-Paper.pdf>.

<sup>6</sup> <http://ec.europa.eu/research/conferences/2016/food2030/index.cfm?pg=home>.