



Global, Regional and Local food chains: an assessment of sustainability performance of wheat-to-bread chains across Italy and the UK

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Abstract – A growing number of consumers are concerned with the impacts of consumption choices. Local food supply chains are increasingly being discussed for their potential to overcome the impacts of global and more industrialized chains. However, opposition between local and global food systems is being questioned and distinctions are ambiguous. Can sustainability performance be assessed in relation to local and global food chains? This paper develops a comparative assessment of wheat-to-bread supply chains. Key attributes are selected to collect data for measuring the performance of supply chains along the global-local continuum within five sustainability dimensions. Using a participatory approach, the research explores stakeholders' perspectives on sustainability of these chains and assesses the contribution of supply chains of different lengths towards sustainability objectives. The most relevant attributes and the relations (correlations and trade-offs) between them are highlighted. The analysis sheds light on sustainability performance and the participatory assessment reveals conflicting perceptions of sustainability and how this is perceived along the local-global continuum¹

Keywords –sustainability assessment, wheat-to-bread chains, UK, Italy

INTRODUCTION

There are a growing number of consumers concerned with the impacts of their consumption choices, including how choice affects their health, society, and the environment. Local food supply chains are considered by policy and decision makers in government, industry and civil society organizations for their potential to overcome the impacts of global and more industrialized chains (Forssell and Lankoski, 2014; Selfa and Qazi 2005). Opposition between local and global food systems is being questioned and distinctions can be ambiguous (Hand and Martinez, 2010). How does sustainability performance vary in relation to food supply chains along the global-local continuum? What characterizes difference?

Within the EU 7FP Glamur project, distinctions between local and global supply chains are

articulated based on: geographical distance; governance and organization; resources, knowledge and technologies and territorial identity. From this assessment, global, regional and local wheat-to-bread supply chains were selected for case study research in Italy and the UK. Key attributes were identified and indicators were selected in order to measure the performance of the supply chains along the global-local continuum within five sustainability dimensions (economic, social, environmental, health and ethical). This paper develops a comparative assessment of the wheat-to-bread supply chains. Using a participatory approach, the research process entails exploration of stakeholders' perspectives on the sustainability of local and global bread supply chains and assessment of the contribution of supply chains of different lengths towards sustainability. Then we identify key factors and the relations (correlations and trade-offs) between them. Finally we highlight cross-cutting issues between the subsets across Italy and the UK and emerging thematic questions and priorities for further in-depth investigation.

METHODOLOGY

The assessment is based on a selection of attributes drawn from scientific literature and media analysis (Kirwan et al. 2014), preliminary quick scans of the case studies and discussion between the Italian and UK teams. These attributes cover issues associated with wheat provenance and seed breeding and wheat growing priorities and practices; issues associated with product composition and nutritional value; others that cover the (re-) use of traditional baking techniques versus industrial production; and product marketing, including information communicated to the consumer. Each attribute was linked to more than one of the five performance dimensions (economic, social, environmental, health, ethical). Once the attributes had been selected, constructing the indicators (Table 1) involved: i) reviewing the evidence and identifying critical points/possible indicators that highlighted important aspects for identifying differences/similarities between local-global chains; and ii.) using the SAFA list of indicators (FAO 2013) and the list compiled by GLAMUR project partners to guide this selection. This followed the requirement to select comparable qualitative and quantitative

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performance indicators to cover the five dimensions and ensure key stakeholders were involved at every stage of the chain.

Table 1 – Selected attributes and indicators

Attributes	Indicators
Biodiversity	locally adapted wheat varieties and breeds
	on farm eco-system management at national level
Technological innovation	innovation to reduce GHG emissions
	innovation to reduce waste reduction and disposal
	metrics in place to support sustainable packaging
	use/re-use of traditional production processes and preservation of local knowledge
Nutrition	salt content
	fat content
Information	communication between stakeholders along chain
	availability of information to consumers

RESULTS

UK and Italian bread chains operate almost at opposite polarities. The industrial chain accounts for 80 percent by volume of production in the UK whereas artisanal bakeries account for 90 percent of production in Italy where industrial bread is used as a substitute product. The nature of the wheat-to-bread chains in each country has resulted in different governance issues along the chains, reflecting political, cultural and place-specific priorities. This was perhaps most demonstrable in the regional chains. Bread remains culturally important in Italy where typicity, localness and quality recognition are reinforced by highly valued PDO designations, use of ancient wheat varieties etc. In the UK, where the regional chain is retailer-driven with processes scaled-up for commercial operations within the supermarket structure, the performance shared more aspects with industrial-scale and market-led production.

Although perceptions of 'global' and 'local' differed between countries and between stakeholders in the various chains, and there were varying perceptions and definitions for each attribute, initial research identified some cross-cutting issues. For example, although the indicators for the attribute biodiversity performed better for the regional and local chains in both countries (reflecting the effects of subsidies, in part), delivering biodiversity (environmental performance) versus productive output (economic performance) was also a cross-cutting issue. This reflects tensions in both countries between practices that address territorial and farm-based

distinctiveness with market-led growth strategies that prioritise food availability and affordability. Technological innovation was also a major cross-cutting issue but, likewise, there were a variety of definitions and perceptions according to stakeholders' positions in the three supply chains (industrial versus re-(use) of traditional techniques and innovations). For nutrition performance, salt reduction was a cross-cutting issue in the global chains and reflects how the industry has reacted to pressure from public health concerns and consumer awareness, but it was harder to make robust comparisons at the local and regional levels because of different baking traditions and cultural preferences between the two countries. Regarding information and communication, marketing strategies predictably reflected the different scales of operation in both countries; the more global chains had sophisticated websites and powerful communication campaigns, supported by promotions within supermarkets and on-line shopping sites. This enabled them to adapt key marketing messages as consumer habits and concern with healthy diets become more prevalent. Without this scale of financial investment, staff and scale of operation, the situation was different at the local levels where individual stakeholders (farmer, miller, baker) had significantly fewer marketing resources and relied on promoting quality attributes through word of mouth and, increasingly (and perhaps less predictably), through social media which is proving an effective way of engaging more widely with younger consumers in particular.

CONCLUDING REMARKS

Priorities for further in-depth investigation include: how socio-economic and socio-cultural 'lock-in' affects the ability of the wheat-to-bread chains to adapt and innovate along the global-local continuum; and more detailed investigation of how the chains are 're-balancing'. Is innovation at the regional level significant? Are both chains meeting somewhere in the middle?

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