SHORT FOOD SUPPLY CHAINS

RETH!NK PLASTIC

ZERO WASTE EUROPE

Friends of the Earth Europe

Short food supply chains (SFSCs), such as farmers' markets, community supported agriculture (CSA) schemes and basket delivery systems, connect consumers to the production of food in ways that can help to reduce food and packaging waste. By contrast, conventional food production, distribution and retail can encourage both over-packaging and food waste.

On average only 15% of EU farms sell more than half of their produce directly to consumers. Direct sales are more common among small farms than large farms [1, 2].

FOOD AND PLASTIC PACKAGING WASTE IN THE SUPPLY CHAIN

Europe's industrialised and globalised agricultural system is characterised by long supply chains, multiple intermediaries and high levels of food and packaging waste.

EU food supply chain: in the EU, 12 million farms produce agricultural products which are processed by around 300,000 food and beverage enterprises. These processors sell their products through 2.8 million food distributors and food service companies. Food usually reaches the EU's 500 million consumers through conventional retailers, with direct links to farmers being less common [3].

Retailers: European food retailing is highly concentrated, with five major retailers accounting for 50% of the market [4]. Marketing practices such as grading standards, multipacks and small format packaging are widespread in supermarkets and drive waste at different points in the supply chain [5].

Food waste: an estimated 88 million tonnes of food is wasted each year in the EU, which is about 20% of the total food produced in the EU[6]. Key inter-related waste drivers at different stages in the value chain include the oversupply and undervaluing of food [7].

Plastic packaging waste: plastics are the most widely used material for packaging food in Europe [8]. Packaging is still far from a circular system, with most being incinerated, sent to landfill or leaking to the environment [9].

Associated annual costs of food waste for the EU are estimated at EUR 143 billion, comparable in size to the annual EU budget [6, 10].

COMMUNITY SUPPORTED AGRICULTURE IN LUXEMBOURG CITY

Terra Luxembourg is a CSA venture which grows fruit and vegetables and raises chickens on a 1.5 hectare site, applying an agroforestry system based on permaculture. Customers pay at the start of the year for a share of each week's produce. This is made available in reusable crates, from which members take home their share in their own containers. The amount of produce available to customers is dependent on crop yields. In times of surplus, food is redistributed to local organic retailers or donated to the farm's volunteers and local soup kitchens. Should some small amount remain, it is composted on-site and returned to the soil.

SOLVING THE PROBLEM – SFSCs

SFSCs can be defined as a shortening of the physical distance between the production and consumption of food, and/or a reduction in the number of intermediaries in a value chain [11]. Shortening the food supply chain has the potential to reduce both food and packaging waste. SFSCs can take a number of forms, as shown in the table below.

TABLE 1 – FORMS OF FOOD RETAIL IN SFSCs [12]

NATURE OF SFSC	SALES METHOD	DISTRIBUTION
Traditional	On-farm direct	Pick your own systems; farm shop
	Off-farms sales	Roadside sales; farmers markets
	Collective direct	Farmers fairs; local public procurement initiatives
Modern	Farm direct deliveries	Basket or box delivery
	Partnerships	CSA schemes - customers agree to pay in advance for whatever a farmer produces

By their nature, these initiatives tend to be small (involving less than 10 producers or employees), yet evidence suggests that these models of buying food are growing in popularity in both rural and urban areas [12]. In 2015, for example, Europe had 2,783 CSAs in operation, supplying almost half a million people. Adding similar initiatives such as the French Jardins de Cocagne and the Italian GAS brings that figure to approximately 6,300 CSAs and helping to feed one million people [14].

SFSCs can bring a range of socioeconomic and ecological benefits, chiefly allowing farmers to keep a higher share of revenue from the sale of food, and providing consumers with access to seasonal, local, traceable produce [11]. Common practices in SFSCs also see a reduction in pesticides, fertilisers, animal feed, water, energy, and transport emissions [12].

Less well analysed are the opportunities presented by SFSCs to reduce food and packaging waste. As food reaches the consumer with minimum transport and/or handling by intermediaries, the risk of spoilage is reduced, there is less need for packaging and cold storage, and the food is fresher. By increasing public awareness of the natural and seasonal limits of food production, SFSCs encourage more responsible handling of food at home. In addition, they undermine the actions by wholesale and retail that drive food waste, such as supply agreements that force farmers towards over-production or imposed standards that reject products of irregular size or shape. Short distances also facilitate the use of reusable packaging (which can be heavier than single-use packaging because of the need for greater durability) because emissions linked to the weight of packaging become less significant [15-17]. Finally, fewer intermediaries and removing the need for fresh produce to have an extended shelf-life may further reduce food waste.

SHORT FOOD SUPPLY CHAIN

ASSOCIATED ANNUAL COSTS OF FOOD WASTE FOR THE EU ARE ESTIMATED AT €143 BILLION

12 MILLION FARMS
300,000 ENTERPRISES
2.8 MILLION DISTRIBUTORS
MARKETING PRACTICES DRIVING WASTE

FARM SHOP
FARMERS MARKETS
FARMERS FAIRS

BASKET OR BOX DELIVERY

5 MAJOR RETAILERS ACCOUNT FOR 50% OF THE MARKET

GRADING STANDARDS

SMALL FORMAT PACKAGING

MULTIPACKS

FOOD WASTED ANNUALLY IN THE EU

OF TOTAL PRODUCTION IN THE EU

COMMUNITY-SUPPORTED AGRICULTURE

ONLY 15% OF EU FARMS SELL MORE THAN HALF OF THEIR PRODUCE DIRECT TO CONSUMERS

(MORE PREVALENT AMONG SMALL FARMS)

MOST WIDELY USED MATERIAL FOR PACKAGING IN THE EU IS PLASTIC

PACKAGING STILL FAR FROM A CIRCULAR SYSTEM

RECOMMENDATIONS

Systematic and empirical research into SFSCs should examine how to maximise their potential for reducing food and packaging waste, and the extent to which they could replace conventional supply methods. Recommendations include:

- Promote improved transparency of food and packaging waste data throughout the supply chain, particularly at retail level.
- Support better understanding of the interactions of packaging, food production and waste and supply chains through European funds for research, such as Horizon 2020.
- Introduce policies to support the implementation of SFSCs and maximise their contribution to solving packaging and food waste, while simultaneously supporting European job creation.

Full report available at:
foeeurope.org/unwrapped-throwaway-plastic-food-waste

Institute for European Environmental Policy

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ENDNOTES

1. European Commission, Commission staff working document on various aspects of short food supply chains. 2013, European Commission: Brussels. [Data available for 17 Member States, representing 89 % of all EU farms].
2. Smithers Pira, The Future of European Food and Drink Packaging to 2020. 2015, Smithers Pira: Leatherhead, Surrey. p. 412.
3. European Commission, You are part of the food chain - Key facts and figure on the food supply chain in the European Union, in EU Agricultural markets briefs. 2015, European Commission: Brussels.
4. Consumers International, The relationship between supermarkets and suppliers: What are the implications for consumers? 2013, Consumers International: London. p. 25.
5. Colbert, E., Schein, A. & Douglas, D., Causes of food waste in international supply chains. 2017, A report by Feedback Global funded by the Rockefeller Foundation: London. p. 34.
6. FUSIONS, Food waste data set for EU-28. 2015, FUSIONS EU FP7 research project. p. 7.
7. Canali, M., et al., Food Waste Drivers in Europe, from Identification to Possible Interventions. Sustainability, 2017. 9.
8. Muncke, J. Food packaging materials. Packaging materials 2016 07/08/2017, available from: http://www.foodpackagingforum.org/food-packaging-health/food-packaging-materials.
9. Ellen MacArthur Foundation, New Plastics Economy - Catalysing Action. 2017, Ellen MacArthur Foundation,: Cowes, UK. p. 68.
10. European Commission. EU budget in figures. 2015 16/10/2015 11/13/2017, available from: http://ec.europa.eu/budget/annual/index_en.cfm?year=2015.
11. Kneafsey, M., et al., Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics, in JRC Scientific and Policy Reports. 2013, Publications Office of the European Union: Luxembourg.
12. European Parliament, Short food supply chains and local food systems in the EU, in Members' Research Service. Augère-Granier, M-L. (Ed.) 2016, EPRS - European Parliamentary Research Service: Brussels. p. 10.
13. Urgenci, European CSA Overview. 2015, ATTAC, Austria; CEPTA, Slovakia; DIO, Greece; Gute Erde Kattendorf, Germany; PRO-BIO LIGA, Czech Republic; Soil Association, United Kingdom; TVE, Hungary; URGENCI Network, France: Aubagne, France. p. 35.
14. TNS opinion & social, Special Eurobarometer 440 - Europeans, Agriculture and the CAP, in Eurobarometer, Directorate-General for Communication, Editor. 2016, European Commission: Brussels. p. 27.
15. Galli, F. and Brunori, G., Short Food Supply Chains as drivers of sustainable development. Evidence Document. 2013, Foodlinks: Brussels.
16. WRAP, Single Trip or Reusable Packaging - Considering the Right Choice for the Environment, in Reusable Packaging - Factors to Consider. 2010: London. p. 68.
17. Priefer, C., Jörissen, J. & Bräutigam, K-R., Food waste prevention in Europe – A cause-driven approach to identify the most relevant leverage points for action. Resources, Conservation & Recycling, 2016. 109: 155-165.