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Procuring for Change: An exploration of the innovation potential of sustainable food procurement.

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Abstract

Public procurement is increasingly recognised as a tool to promote more sustainable forms of food production. As the negative consequences of the food system on ecological and human health have become more apparent, public institutions have come under increasing pressure to purchase food in a way that promotes environmental, social and economic benefits. This is reflected by a growing number of initiatives that link the provision of healthy food with support for more environmentally benign food production. This paper explores the potential impact of public procurement on the business strategies of small food producers. In doing so, it seeks to widen the understanding of how demand can support more sustainable forms of food production and supply.

The study is based on a series of qualitative interviews with producers and caterers who have participated in the Food For Life programme based in the UK. The impact of the programme framework is explored with respondents and thematically analysed to distil a series

of key impact types and contextual variables. The paper discusses the potential for steering business change within food businesses using public procurement strategies. The unique nature of food systems and the complex relationships with human and ecological health lead to a distinct set of challenges and opportunities for advocates of sustainable procurement.

1. Introduction: Sustainability and the State

Food sustainability issues have come increasingly to the fore in public and academic discourse. The Eat-Lancet Commission on healthy diets from sustainable food systems (Willet et. al., 2019) recognises that the food production "is the largest cause of global environmental change" and "unhealthy diets pose a greater risk to morbidity and mortality than… unsafe sex, and alcohol, drug, and tobacco use combined". The need to better understand the interdependent complexities of the food system and develop policy tools to influence its dynamics is recognised as a key challenge in tackling the negative consequences of the current food system (Garnett, 2013).

The procurement of food by public institutions has emerged as a potentially powerful tool to influence a complex system that otherwise operates largely on the periphery of public policy reach (Morgan, 2008; Morgan and Morley, 2013). The European Commission defines sustainable public procurement as 'a process by which public authorities seek to achieve the appropriate balance between the three pillars of sustainable development - economic, social and

environmental - when procuring goods, services or works at all stages of the project' (European Commission, 2020).

Academic research on the potential for public procurement to influence the behaviour of firms is underdeveloped (Preuss, 2011), particularly in contrast to the size of global public procurement markets. The OECD estimate that public procurement of goods and services accounts for around 12% of GDP among member countries (OECD, 2019).

Numerous sustainable food procurement initiatives have emerged over the past 10 – 15 years, particularly in Europe and North America (see review by Neto and Caldas, 2017). Despite a growth in academic enquiry, particularly regarding 'farm to school' initiatives (Stefani et al., 2017), research on the relationship between public sector demand and supply chain practice in the food sector remains nascent (Neto and Caldas, 2017). The stated benefits of these schemes in both academia and practice tends to focus on largely normative rhetoric related to either supporting local businesses (Morgan and Sonnino, 2008; DEFRA, 2014) or promoting impacts external to businesses such as environment and animal welfare benefits, as signalled through qualities such as local and organic (Sonnino, 2009; Smith et al., 2016). The potential positive impacts of public procurement demand on business strategy and innovation remains largely overlooked, implied or assumed. The aim of this study is to address this gap in understanding by exploring impacts of supplying food to the public sector within a strong sustainability framework.

This paper focuses on the experiences of business participants in a major UK Non-Governmental Organisation (NGO) framework that aims to promote food sustainability by

taking a holistic approach to food in public institutions (predominantly schools) by promoting healthy and sustainable meal provision alongside educational and skills development. The Food For Life (FFL) approach was initially developed by the Soil Association in 2003 (Soil Association, 2003) and pioneered by a small number of schools. A step-change occurred in 2007 when the Food for Life Partnership was established as a 5-year collaboration between four NGOs, funded by the UK national lottery (Orme et al., 2011). FFL has subsequently expanded to other parts of public food provisioning, particularly hospitals and care homes.

The FFL framework supports public sector caterers and procurers to produce sustainable, healthy and appealing meals. Sustainable sourcing is promoted by setting a series of standards that must be met to attain one of three status levels: Bronze, Silver and Gold. The standards focus on minimum levels of fresh, local, organic and welfare friendly ingredients, usually as a proportion of overall food sourcing. For example, to achieve Gold status, 15 percent of food products must have organic certification. Service provides pay a fee to FFL for membership, accreditation and associated support. Achieving FFL sourcing standards usually requires a significant adjustment in purchasing behaviour, with more food purchased, either directly or indirectly, from small regional producers (Orme et al., 2011; Pitt and Jones, 2016).

This paper investigates the impact of participation in FFL on sustainability related practice within food businesses involved in the programme. Analysis was achieved through a series of semi-structured interviews with purposely selected producers and caterers identified via the author's involvement in the formative evaluation of the Food for Life Partnership between

2007 and 2012 (Orme et al., 2011). Interviews were conducted in 2012 and then followed up in 2017 to gain a longitudinal understanding of the programme's impact.

Given the exploratory nature of this research enquiry, the following literature review aims to provide context by outlining the dynamics of food supply in the public sector. The review is structured over three sections according to the core elements of the process under enquiry: product (sustainable food), demand (public procurement) and supply (supply chain dynamics).

2. Background

2.1. *Sustainable Food in Practice*

Concern about the impact of food production, trade and consumption has led to a growth of interest in sustainable food products. What is meant by sustainable food, however, is problematic as sustainability is a complex and transient concept, with ongoing conflicts between and within the established three pillars of environment, economic and social sustainability (Hinrichs, 2010). The FAO have put forward five defining principles that encompass sustainable food and agriculture: 1. Improving efficiency in the use of resources 2. Conserving, protecting and enhancing natural ecosystems 3. Protecting and improving rural livelihoods and social well-being 4. Enhancing the resilience of people, communities and ecosystems 5. Promoting good governance of both natural and human systems (FAO, 2014).

Four types of sustainable food product category have emerged over recent decades in the western consumer context: organic, local, welfare friendly and fair trade. In practice, these expressions of sustainability, or qualities, compete for association with sustainability among consumers and in the market more generally, producing a degree of contestation, overlap and conflict (Scalvedi and Saba, 2018). This is illustrated in the arena of public food procurement, where purchasers must balance institutional priorities to support aspects of food sustainability (such as human health) with economic pressures to provide value for money for consumers and taxpayers (see Morgan and Morley, 2013). Not only are these expressions of sustainable food usually more expensive, but individual products tend to have one or two of these qualities rather than encapsulating the broader scope of sustainable food as illustrated by the FAO principles stated above.

Understanding these expressions of food sustainability is important for exploring the dynamics of sustainable food procurement as they encapsulate to options available to procurers and recipe developers in the public sector. Although their origins differ, the development of organic, animal welfare and fair trade food products are all typically supported by 'third party' organisations that promote standards to ensure their respective sustainability credentials within a market context. This is possible as the standards developed are based on largely objective process focused criteria with a relatively clear and uncontested meaning for producers and consumers (Howard and Allen, 2010). The quality of local food, in contrast, is relational to an inherently flexible competing practice; the locations of production. Its meaning to consumers is both socially and culturally specific (Carroll and Fahy, 2015) as well as somewhat fluid (Hinrichs, 2003; Granvik et al., 2017). Products are only local in certain locations whereas

quality assurance standards aim to be universal. As a result, the scope for support by standards schemes is limited as the market itself is predicated on quality standards (Busch, 2000).

Local food has remained largely synonymous with sustainable food for many consumers, even though its limitations as a proxy for sustainability are well recognised (Born and Purcell, 2006). Edwards-Jones et al (2008) concluded that food miles (i.e. the distance a product travels from production to consumption) is a poor indicator for the environmental and ethical impacts of food.

Understanding and managing sustainability requires additional information and an ability to influence which is aided by short and direct supply relationships (Seuring and Müller, 2008). In this respect local sourcing is attractive to procurers as they are, almost by definition, less complex than extended supply chains.

In spite of the distinctions between local and the other three expressions of sustainable food, all four qualities interact in complex ways that can be mutually reinforcing or competing. Whilst individual products can, in theory, exhibit more than one of these 'qualities', consumers (and institutional procurers) who wish to express support for sustainable food regularly have to effectively trade off these attributes when making purchasing decisions. This is the case within the FFL framework, where sourcing of all four product types are required.

2.2. *Public Procurement Supply Chains*

Public procurement, the process of acquiring goods and services by public sector organisation, is "one of the most powerful instruments that governments have at their disposal" (Morgan and Sonnino, 2008). Public procurement is fundamentally a moderation of the relationship between supply and demand expressed by the state that is, in democratic contexts, an expression of societal demands about how a state should function (Morley et al., 2012). As such, it is an instrument that can be applied to promote a state's obligation to sustainable development (Meadowcroft, 2007). The OECD estimate that 29 of its 35 member countries support green public procurement, with 21 also specifically supporting SMEs through a range of measures (OECD, 2019). Critics argue that this support is generally low level and its potential remains largely untapped, particularly in terms of steering innovation (Elder and Georghiou, 2007; Uyarra and Flanagan, 2010).

Purchasing food by, or on behalf of, the public sector is a significant area of economic activity. In England alone, the public sector spends approximately £1.2 billion per annum on food and drink products (DEFRA, 2014). Advocates of sustainable food procurement argue that this money should be better used to provide social, environmental and economic benefit for society.

Outside of the food sector, public procurement policies have been long recognised as potential promotors of production efficiencies, innovation and business capacity building, as well as acting as demonstrators for novel products and services (see Uyarra, 2010). A number of studies have explored the use of strategic purchasing to promote specific economic and social equity goals, including targeting local businesses and minority entrepreneurs (Kaye Nijaki and Worrel, 2012; McCrudden, 2004).

Public sector food procurement is largely conducted at the regional or sub-regional level. The OECD estimate that around 63% of all public procurement expenditure occurs at the local or subnational level (OECD, 2019). Despite common legal frameworks, the geographical context for procurement is a significant influence on its form, particularly in the case of food where productive capacities of localities vary considerably (both spatially and temporally). Uyarra et al. (2017) highlight the importance of place as a contingent factor on procurement, particularly with respect to stimulating innovation. This is, in part, due to the nature of procurement demand at local levels and the potential for greater social ties between suppliers, procurers and other stakeholders. The authors acknowledge differences between procurement demand that is specific to place and procurement solutions that are specific to place. In other words, even though localities may share the similar procurement objectives, for example through participation in FFL, solutions maybe place dependent.

2.3. *The Dynamics of Sustainable Food Supply*

The form and function of business relationships that link supply to demand for food varies considerably and is complex, particularly in the context of sustainability. This complexity is extenuated by modern consumer demands for variety, value and convenience that has extended the global reach of food chains. Food supply can be conceptualised in various ways, including according to physical product flow, organisational boundaries and accrual of financial value (Ericksen, 2008). There is no comprehensive and widely accepted approach to framing food supply chains particularly those that aim to capture social, environmental and economic elements and therefore sustainability in the round (Tregear, 2011).

Given the centrality of place and 'localness' outlined in Section 2, studies of sustainable food supply tend to focus on 'short' supply chains. Defined as a counterpoint to conventional systems, short supply chains have a minimal number of intermediaries between producer and consumer. This also provides a degree of conceptual clarify with respect to the chain from production to consumption. Short supply chains tend to have other characteristics assigned to them related to product quality and particularly the transmission of 'values' among participants. This is in contrast with conventional supply chains that are characterised as being distant, in both space and time, subject to the primacy of economic value and therefore commodification (Ilbery and Maye, 2005).

From a research perspective, the 'shortness' of many sustainable supply chains make rich contextual accounts appropriate for providing a greater understanding of their dynamics. The utility of such approaches decreases, however, for both empirically and conceptually longer supply arrangements. For example, to gain a holistic account in economic, social and environmental terms, the supply chain of a small beef producer selling premium cuts of meat at a local farmers market, may include cattle feed and other inputs, material waste and other outputs, as well as the contingent supply chains for other parts of the animals.

A pertinent approach that attempts to bridge the bifurcation between conventional and short supply chain approaches is the Value Chain model. Stevenson and Pirog (2008) describe value chains as 'long-term networks of partnering business enterprises working together to maximize value for the partners and end customers of a particular product or service'.

This model has been proposed as a particularly suitable framework to understand production / consumption relationships that mix value laden sustainable food products and 'conventional' aspects of the food system such as regional processors, distributors and public sector purchasers. Bloom and Hinrichs (2011), for example, build on the Value Chain model to examine the tensions that occur between conventional and local food businesses and identify the following four key elements that distinguish value chains from conventional chains: stronger differentiation and added value; commitment to the welfare of all participants; partnership focus; and the importance of trust and shared governance.

Almost all public sector procurement of sustainable food in the UK incorporates aspects of the conventional food industry. Although there are 'short' supply chains that bypass physical aspects of the conventional system, most sustainable food purchased is handled by conventional intermediaries such as wholesalers and distributors. Participating producers and intermediaries undoubtedly lose some of the beneficial aspects of 'short supply chains' and obtain some of the commercial rationalisation pressures of conventional chains. In many cases, sustainable food is agglomerated with conventional products at the stage before delivery to public sector caterers. These intermediaries are therefore dealing with, and consolidating the dynamics of, both types of supply ethos (see Born and Purcell, 2006).

Economic studies of localised food chains demonstrate the benefits that accrue to localities when supply chains remain within their boundaries (Ward and Lewis, 2002). The socioeconomic benefit of retaining economic flows within a locality are well-established

(Smithers et al., 2008) whilst the environmental benefits, although questioned (Edwards-Jones et al., 2008), remain largely accepted when restricted to non-local comparisons of the same product (in both a physical and process sense). Localised food networks have been found to mitigate negative effects associated with conventional agrifood through the mobilisation of new processes and relationships (Renting et al., 2003).

More recent academic discourse has considered the potential for 'scaling up' sustainable food initiatives in a bid to increase their beneficial impact through greater numbers (Connelly and Beckie, 2016; Pitt and Jones, 2016) and better coordination via initiatives such as food hubs (Morley et al., 2008; Berti and Mulligan, 2016). Such approaches are important in terms of both meeting criticisms of uneven spatial development associated with localism (Marsden and Franklin, 2013) and understanding the potential for transition change within the food system (Pitt and Jones, 2016). Sustainable food procurement initiatives such as FFL are a vehicle for scaling up as they provide a common framework which can adapt to variation in local context.

3. Methods

Representatives of 26 businesses who either produce food or provide catering for Food For Life schools in England were interviewed as part of the formal evaluation of the Food For Life Partnership programme in early 2011. Businesses were purposively selected from the programme internal data records. The aim was to broadly reflect both the range and proportions of business types engaged within the programme, according to size and sector. There was no full database of FFL suppliers at the time of selection, therefore overall representativeness cannot be

assessed. The businesses were subsequently re-contacted in 2017, with 15 businesses participating in follow up interviews.

Table 1: Interview Sample according to Business type

Year	2011	2017
Business Type	Number Interviewed	
Meat	7	4
Dairy	5	3
Fruit and Vegetables	4	2
Bread Products	3	2
Caterer	5	3
Other	2	1
Total	26	15

The businesses were SMEs except for two large caterers who operate in multiple sites across the UK. Eleven respondent businesses had less than 10 employees. All companies had directly supplied FFL caterers for at least 6 months prior to the initial interview. Seven businesses were no longer supplying FFL schools at the time of the second round of interviews.

Semi-structured qualitative interviews were conducted based on a common set of guiding questions whilst allowing for exploration of emerging issues and contextual details. Qualitative interviews are a well-developed form of research enquiry that, among other attributes, is

particularly suitable for drawing out contextually grounded knowledge (Mason, 2002). The average length of interview was around 35 minutes.

Analysis of the initial interview phase was done according to the FFLP evaluation objectives. A second phase of analysis was conducted specifically for this research paper, incorporating follow up interview data. The data was transcribed and coded using Nvivo software.

Research data was analysed thematically, using Nvivo software. The Braun and Clarke (2006) six phase approach to thematic analysis was followed. Data was grouped thematically according to emerging data nodes developed through inductive reasoning. Reflective analysis was conducted to ensure the trustworthiness of emerging themes and overall conceptual framing with triangulation sought through reference to wider learning from the original evaluation (Nowell et al., 2017). Through this approach, data was iteratively grouped and codes refined until clear themes emerged that were deemed valid both in terms of conceptual resonance and by having a firm grounding across multiple case examples (Guest et al., 2012).

4. Results and Discussion

The findings below are arranged according to six first-level node themes and delineated according to whether they relate to a type of impact or a key contextual factor.

4.1. *Impact: Demand Stability*

The interview respondents universally cited a range of direct and indirect beneficial consequences of supplying food to FFL schools compared with other customers. One of the most

commonly expressed benefit among small producers was that supplying schools is a relatively stable and large-scale arrangement that provides a degree of financial security that is difficult to secure with private sector customers. The assurance provided by FFL arrangements encouraged investment in long term measures to develop the business.

"We were able to bring forward our growth plan knowing we had this commitment from [FFL Caterer]"

Examples were given of being able to purchase new equipment, develop supply infrastructure and increase employment as a result of securing a school supply arrangement.

"*We had to hire an extra lad in deliveries… just to keep on top of things"*

This stability was contrasted to supplying supermarkets, the other principal large-scale customer, who are perceived as less stable and therefore riskier propositions.

4.2. *Impact: Market Orientation*

A second clear theme to emerge from the interviews was a degree of market orientation that occurred among participating businesses towards consumers demanding food with local provenance. This included established businesses who had not previously explicitly marketed their businesses or products as local or recognised it as a significant positive attribute of their business.

"[FFL] was really the stimulus for us, we realised that there were people who were interested because we're just down the road, you know"

In these cases, the purchasing of their products because of their local qualities appears to have led to a recognition that this is a marketable quality for some producers. Moreover,

participation in FFL was cited as increasing the profile of businesses in their local economy, leading to greater demand through other channels.

"I think people are more aware of us, yes, I would say so"

Producers with an integrated retail element such as butchers, greengrocers and farm shops, reported a particularly positive relationship between supplying local schools and increasing demand from their local communities.

"I do have customers coming in and saying my kids go to [local school] and that is how I know about you"

Respondents within these categories almost universally noted instances of retail customers mentioning FFL or the fact that they supply the local school.

"It's become part of our identity, really"

4.3. Impact: New Product Development

Numerous examples were given of products developed to meet FFL requirements that were subsequently marketed through other supply channels. For instance, a butcher who started to source local pigs at the behest of a FFL school went on to supply the meat through his retail shop. Similarly, a locally sourced farm assured sausage product developed by a regional supplier for an individual school was subsequently sold to schools across a neighbouring Local Authority area, as well as to private school meal caterers. Another butcher told a similar story of a sausage developed for an FFL school that proved to be popular among retail trade customers.

"We developed a product, an outdoor reared pork sausage as a result of [FFL] … and now we sell that into other people and it's quite popular really"

Respondent businesses also gave examples of FFL involvement leading to further custom from other public sector caterers. A fruit and vegetable wholesaler, for instance, initially developed local sourcing capabilities in order to supply a FFL school. This service was subsequently offered to other schools.

"The other schools are benefiting from the [FFL contract] because, you know, we get the opportunity to buy the local product through the [FFL contract]… if we didn't have the big [FFL contract] we'd have to go further afield for it"

Similarly, a butcher was able to expand his custom across a local authority area as a result of a recommendation by a FFL school.

"My name was given to them by [FFL School], because I supply local product and that's what they wanted… and they're very happy as far as I can tell".

In addition, a large caterer reported introducing farm assured meat across all their schools because of FFL participation. This sourcing ethos subsequently became a core element of their offer to the public sector.

4.4. *Impact: General Sustainability Practice*

Numerous business respondents reported impacts directly related to their general sustainability practice. In other words, participation stimulated changes across the business that had an impact on all supply relationships, not just trade with FFL school caterers. An illustrative

example is a fruit and vegetable supplier that developed a reusable tray system for transporting fruit and vegetables through conversations with a school caterer.

"Without [FFL caterer] we probably wouldn't have done it and it's made it so that we can carry that through for the rest of our business"

Another fresh produce wholesaler invested in an improved data management system in order to demonstrate the provenance of its supply.

"We had to be able to show where we were sourcing from… we'd never really had a customer who asked so many questions before, so it forced us, if you like, to think about how we record things and keep on top of our records."

Similarly, other respondent businesses cited the development of certified supply chains in order to meet FFL sourcing requirements that were subsequently extended to other customers and also led to new business. Examples were cited including adopting farm assured, welfare friendly and organic certified sourcing arrangements new to the business.

"FFL did make us look how we could source [welfare friendly chicken], it's not easy at all... but then we could promote that with our other customers"

"Red Tractor [a UK farm assurance standard] was definitely integrated into [a national contract caterer] as a whole with Food for Life in mind"

4.5. *Contextual: Production System*

Two contextual themes were identified through the coding and grouping of food and supply dimensions associated with examples of impact provided by respondents. One of the clear contextual themes to emerge was the significance of the product and production type, along with the nature of the supply chain. A number of clear patterns in the data can be identified. For instance, the butchers interviewed universally stated that they benefit from school demand for lower value cuts of meat as it balances more established demand for premium cuts from customers such as restaurants and retail customers.

"It has been a win win for us really. We've been able to focus more on the premium offer in the shop"

The balancing of supply and demand through strategic procurement is particularly appropriate for high value foods that have distinct sales channels for different constituent elements, i.e. meat carcasses. Based on the interview data, this approach appears to support a more efficient food chain, in both economic and resource efficiency terms. Meat that would otherwise be further processed for outputs with low economic and nutritional value (such as burgers) can be used as an ingredient for healthier dishes as part of school menus.

The evidence provided by respondents suggests that using strategic procurement to support local economies is more effective for food sectors that retain localised infrastructure. For instance, many regional dairies still exist in the UK, often sourcing milk from a local or regional supply base. In contrast, although regional fruit and vegetable wholesalers are relatively common, sourcing local fruit and vegetables through them is problematic as UK horticultural production is geographically fragmented and often oriented towards conventional supply chains or higher margin customers such as restaurants. Horticultural production is also largely seasonal

and has the added complexity of relatively short shelf life for most fresh fruit and vegetables. This suggests that supporting local and regional dairy producers is more viable than horticultural producers in many parts of the UK.

Providing assurance about the provenance of local horticultural produce presents additional challenges as traceability systems are not as well established for fruit and vegetables compared to meat and dairy products. As a result, although caterers and their wholesalers may 'know' the origin of produce it can be difficult to prove, as illustrated by the following respondent:

"[a local fruit and vegetable wholesaler] provide us with local produce... we rely on them a bit but you can usually tell its local if you look hard enough"

4.6. *Contextual: Demand Architecture*

The second key contextual element that emerged from interview data was the nature of the procurer. There are three principle types of school catering system in the UK: Local authority caterers (i.e. owned or controlled by pubic authorities), commercial caterers (i.e. independent businesses) and individual schools who run their own catering services. The data collection strategy for this study purposively selected for businesses across all three catering models.

In principle, individual schools have the greatest potential to influence their own supply structures as they typically require product volumes more attuned to the productive capacity of small producers. Such models have potential drawbacks from a strategic procurement perspective. Interviewees from small caterers reported cases where individual producers were

able to resist requests to alter their practises as the size of the contracts were not large enough. In some cases, this resulted in the need to switch suppliers to meet FFL requirements.

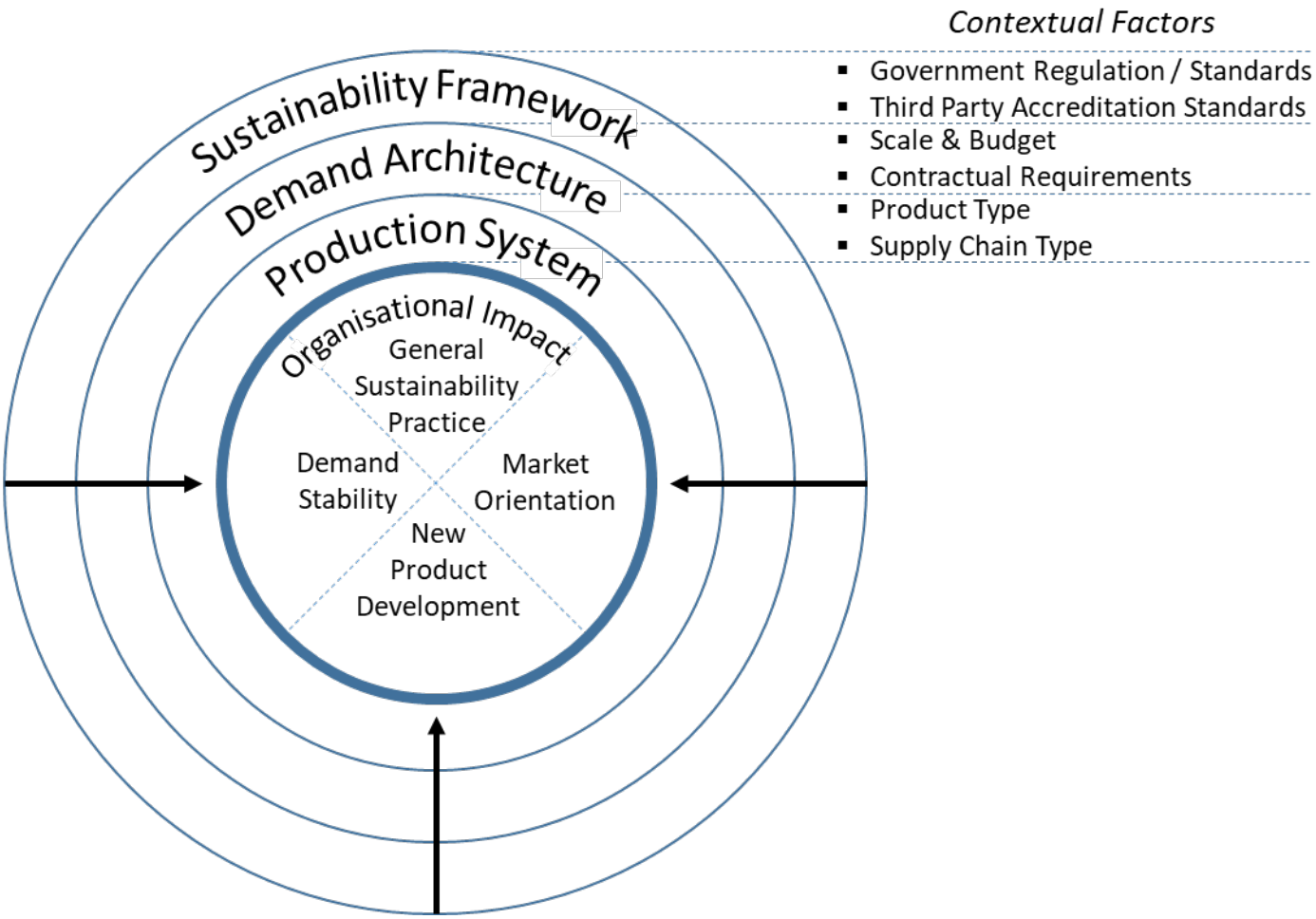
Large food providers, such as local authority and contract caterers, have greater buying power and can therefore influence the sustainability practice of their suppliers. Some respondents, however, reported cases of smaller suppliers that rely on large institutional purchasers for a significant proportion of their income. For example, a fruit and vegetable wholesaler in this study relied on a school food caterer for over half of its business volume. An organic milk producer was also in a similar position. In short, the interviews suggest that the nature of the public catering system, and particularly the level of demand, influences the potential benefits to suppliers.

4.7. A conceptual framework for stimulating change through sustainable food procurement

The preceding section illustrates a number of ways that public food procurement policies are able to re-orient businesses and supply chains towards more sustainable forms of food production. Exploratory semi-structured interviews with 26 business representatives within the FFL programme elucidated a range of positive impacts to the organisation beyond the financial income that was gained from involvement. Through a thematic analysis of qualitative interview data, impacts were categorised into four, often overlapping, areas of benefit. In addition, two key contextual factors were identified through analysis of the context within which change occurred.

How a public institution purchases food (the demand architecture) has an impact on both the resulting supply (the production system) and the scope for benefits suppliers. The figure below illustrates the interrelationship between the impacts and contextual factors. A third overarching contextual factor based on the study design is proposed: the sustainability framework within which the procurement process occurs. The sustainability framework in this study is the Food For Life programme, which is situated within a broader socio-legal framework for English school meal provision.

Figure 1 Innovating for change through sustainable food procurement



This conceptual framing focuses on the impact on the firm (the central circle) of the contextual variables (broken down into contextual factors) and its articulation in terms of intrafirm change, delineated in four categories based on the exploratory interviews. The findings of this study suggest that to increase the beneficial impact, in sustainability terms, of public food sourcing, policymakers and practitioners need to account for contextual variables related to the production system and demand architecture. A facilitative sustainability framework such as Food for Life that drives resource commitment and prioritisation can support this.

4.8. *Discussion: Procuring for Change*

The aim of this study is to explore the innovation potential of sustainable food procurement on the operation of small food businesses through in depth interviews with participants of the FFL scheme. Given the exploratory nature of this research, this section relates the findings to parallel research and discusses key implications for both research and sustainable food procurement practice.

The interview data demonstrates that what the state buys and how the state buys has the potential to stimulate both wider sustainability practise along supply chains and societal demand for sustainable food. In this respect, broader impact maybe considered as a form of knowledge spill over. The positive effects can include new products, more sustainable processes and infrastructure, and greater understanding between businesses and their communities.

The stimulation of new products and processes illustrated by this study make a case for the food procurement functions to be considered as a potential form of 'procurement for innovation' (Edler and Georghiou, 2007), which broadly defined, is the strategic purchasing of goods and services which do not yet exist in the market. In this case, school caterers purchasing in line with FFL criteria stimulated new product development within geographically confined markets, in order to meet demand.

The ability of procurers to influence change is contingent on the characteristics of the supply chain in question. These findings align with work by Mylan et al. (2015) on eco-innovation in supermarket supply chains that suggests the strategies and interests of actors in the

chain is a key factor, along with the sector structure and degree of supply chain integration. These factors are also broadly present within public food procurement systems which suggests that public procurers can act as 'focal organisations', along similar lines to supermarkets who have increasingly using their status within supply chains to encourage sustainable behaviour (Dewick and Foster, 2018). Indeed, procurers within the FFL framework appear to use similar influencing powers as supermarkets. This study suggests, however, that the definition and potential of 'focal organisations' is relative to the size of supply chain participants rather than absolute in nature.

There are also parallels between the impact of FFL sourcing standards on food production and a study by Simcoe and Toffel (2014) on the effect of green municipal procurement standards on general construction practice in California. Among the spill over effects identified were the adoption of those standards within private sector construction and a greater investment in green building expertise by local suppliers. Moreover, businesses in neighbouring municipalities experienced greater uptake than those more distant to areas that adopted the standards.

This study suggests the existence of other 'unintended' consequences related to issues of equity and justice. Switching sourcing towards particular food products and supply chains will normally be detrimental to the businesses who previously supplied the products. In these cases, re-localisation for one producer is enforced 'de-extension' for others. It may also conceivably be de-extension for the first producer if limited production capacity causes them to relinquish more

distant supply relationships. Purposeful purchasing, particularly if focused within a limited geographical area or product niche, can change the commercial landscape for small businesses.

The discriminating potential of public purchasing is at the root of national and international public procurement regulations that have stymied the movement towards more local food purchasing in the public sector (Morgan and Morley, 2002). Some critics warn that public procurement may sustain businesses that are otherwise commercially unsound (Kaye Nijaki and Worrel, 2012). A potential impact is the 'rebalancing' of opportunity and resources between businesses in a locality where public procurement favours some producers and not others. Additionally, sustainable food catering programmes that are not universal in their application may also create inequalities among consumers (often children) and food providers.

As public procurers typically operate on lower margins than other businesses such as restaurants and independent retailers, a case can be made that state demand, within the prevailing 'value for money' focused procurement system, may be detrimental to producers that have limited potential to scale up but can receive more money for their produce elsewhere. This potential negative impact may diminish when the non-financial impacts explored in this paper are factored in.

Food differs from many other types of public procurement. It is generally a low-cost high-frequency transaction, which enables the development of ongoing and potentially dynamic relationships between purchaser and supplier. In addition, food products and contingent supply chains can be adjusted relatively easily, in terms of recipes and ingredient suppliers, compared to

other types of public procurement. The scope for change towards greater sustainability is therefore potentially large as systems are flexible and frequently used. This research suggests that, with appropriate resources and incentive structures, these relationships can become sites for innovation and collaboration.

5. Conclusions

This study highlights how procurement policies can act as an indirect impulse to orientate businesses to more sustainable practices. In this respect, public procurement can be considered as not only the exchange of products and services for financial reward but also the exchange of ideas, values and understanding. The research findings suggest that employing procurement to fashion particular a priori outcomes in food businesses is challenging, as innovation pathways are steeped in context. Effects can be multifaceted, indirect and sometimes intangible in nature. Certain types of food businesses appear to be better placed to benefit from involvement in programmes such as FFL than others. In this case, businesses embedded in local communities with direct links to consumers appeared to benefit most broadly.

An appropriate sustainability framework can guide more effective food procurement by accounting for context in the form of demand architecture and production systems. The examples presented offer a potential strategy to support food supply that lack the assurance of impact provided by certification schemes such as organic or fair trade. This relates particularly to the support of local businesses who are embedded in the communities that individual public sector organisations have a duty to serve.

Further research is required to understand the potential of sustainable food procurement schemes, and indeed the public procurement function in general as it relates to sustainability. The conceptual framing set out in this paper provides a guide to explore the relationships between demand, supply and food sustainability further. A quantification of non-financial impacts of sustainable food procurement is particularly desirable given the policy relevance of this research agenda.

The procurement of goods and services is one of the principal functions of government, and within this, food is one of the most complex. In an era of public sector spending austerity in many countries, where the value provided by government spending is increasingly under the spotlight, understanding the potential impact of appropriate procurement mechanisms is even more important. As this study illustrates, the impact of state food purchasing on businesses is multifaceted and has innovation potential to stimulate more sustainable food practice.

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References

Berti, G., Mulligan, C., 2016. Competitiveness of small farms and innovative food supply chains: the role of food hubs in creating sustainable regional and local food systems. Sustainability, 8(7), 616–647.

Bloom, J.D., Hinrichs, C.C., 2011. Moving local food through conventional food system infrastructure: value chain framework comparisons and insights. Renewable Agriculture and Food Systems, 26(1), 13–23.

Born, B., Purcell, M., 2006. Avoiding the local trap: scale and food systems in planning research. Journal of Planning Education and Research, 26(2), 195–207.

Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101.

Busch, L., 2000. The moral economy of grades and standards. Journal of Rural Studies, 16(3), 273–283.

Carroll, B.E., Fahy, F., 2015. Locating the locale of local food: the importance of context, space and social relations. Renewable Agriculture and Food Systems, 30(6), 563–576.

Connelly, S., Beckie, M., 2016. The dilemma of scaling up local food initiatives: is social infrastructure the essential ingredient? Canadian Food Studies / La Revue Canadienne des Etudes sur l'Alimentation, 3(2), 49–69.

Department for Environment, Food & Rural Affairs (DEFRA), 2014. A plan for public procurement enabling a healthy future for our people, farmers and food producers. www.gov.uk/government/publications/a-plan-for-public-procurement-food-and-catering. Accessed on 20/04/2020.

Dewick, P., Foster, C., 2018. Focal organisations and eco–innovation in consumption and production systems. Ecological Economics, 143, 161–169.

Edler, J., Georghiou, L., 2007. Public procurement and innovation – resurrecting the demand side. Research Policy, 36(7), 949–963.

Edwards-Jones, G., Canals, L., Hounsome N., Truninger, M., Koerber, G., Hounsome, B., Cross, P., York, E., Hospido, A., Plassmann, K., Harris, I., Edwards, R., Day, G., Tomas, A., Cowell, S., Jones, D., 2008. Testing the assertion that `local food is best': the challenges of an evidence-based approach. Trends in Food Science & Technology, 19(5), 265–274.

Ericksen, P.J., 2008. Conceptualizing food systems for global environmental change research. Global Environmental Change, 18(1), 234–245.

European Commission, 2020. Green and sustainable public procurement. ec.europa.eu/environment/gpp/versus_en.htm. Accessed on 29/01/2020.

Food and Agriculture Organization of the United Nations (FAO), 2014. Building a common vision for sustainable food and agriculture: principles and approaches. www.fao.org/policy-support/resources/resources-details/en/c/418447/. Accessed on 20/04/2020.

Garnett, T., 2013. Food sustainability: problems, perspectives and solutions. Proceedings of the Nutrition Society, 72(1), 29–39.

Granvik, M., Joosse, S., Hunt, A., Hallberg, I., 2017. Confusion and misunderstanding—interpretations and definitions of local food. Sustainability, 9(11), 1981–1994.

Guest, G., MacQueen, K., Namey, E., 2012. Applied Thematic Analysis. Sage Publications, Thousand Oaks, USA.

Hinrichs, C. C., 2003. The practice and politics of food system localization. Journal of Rural Studies, 19(1), 33–45.

Hinrichs, C.C., 2010. Conceptualizing and creating sustainable food systems: how interdisciplinarity can help, in: Blay-Palmer, A. (Ed), Imagining Sustainable Food Systems: Theory and Practice. Ashgate, Surrey, UK.

Howard, P.H., Allen, P., 2010. Beyond organic and fair trade? An analysis of ecolabel preferences in the United States. Rural Sociology, 75(2), 244–269.

Ilbery, B., Maye, D., 2005. Food supply chains and sustainability: evidence from specialist food producers in the Scottish/English borders. Land Use Policy, 22(4), 331–344.

Kaye Nijaki, L., Worrel, G., 2012. Procurement for sustainable local economic development. International Journal of Public Sector Management, 25(2), 133–153.

Marsden, T., Franklin, A., 2013. Replacing neoliberalism: theoretical implications of the rise of local food movements. Local Environment, 18(5), 636–641.

Mason, J., 2002. Qualitative Researching. Sage Publications, London, UK.

McCrudden, C., 2004. Using public procurement to achieve social outcomes. Natural Resources Forum, 28(4), 257–267.

Meadowcroft, J., 2007. Who is in charge here? Governance for sustainable development in a complex world. Journal of Environmental Policy & Planning, 9(3), 299–314.

Morgan, K., 2008. Greening the realm: sustainable food chains and the public plate. Regional Studies, 42(9), 1237–1250.

Morgan, K., Morley, A., 2002. Re-localising the food chain: the role of creative public procurement. The Regeneration Institute, Cardiff, UK.

Morgan, K., Morley, A., 2013. The public plate: harnessing the power of purchase. in: Marsden, T., Morley, A. (Eds). Sustainable Food Systems: Building a New Paradigm. Earthscan, London, UK.

Morgan, K., Sonnino, R., 2008. The School Food Revolution: Public Food and the Challenge of Sustainable Development. Earthscan, London, UK.

Morley, A., Morgan, S., Morgan, K. 2008. Food hubs: the 'missing middle' of local food infrastructure. Centre for Business Relationships, Accountability, Sustainability and Society, Cardiff, UK.

Morley, A., Sonnino, R., Smith, A. 2012. Leading by procuring: the power of public sector purchasing, in: Gallagher, D., (Ed) Environmental Leadership: A Reference Handbook. Sage Publications, London, UK.

Mylan, J., Geels, F.W., Gee, S., McMeekin, A., Foster, C., 2015. Eco-innovation and retailers in milk, beef and bread chains: enriching environmental supply chain management with insights from innovation studies. Journal of Cleaner Production, 107(16), 20–30.

Neto, B., Caldas, M.G., 2017. The use of green criteria in the public procurement of food products and catering services: a review of EU schemes. Environment Development and Sustainability, 20(5), 1905–1933.

Nowell, L.S., Norris, J.M., White, D.E., Moules, N.J., 2017. Thematic analysis: striving to meet the trustworthiness criteria. International Journal of Qualitative Methods, 16(1), 1-13.

Organisation for Economic Cooperation and Development Publishing (OECD), 2019. Government at a glance 2019. Accessed on 20/04/2020.

Orme, J., Jones, M., Kimberlee, R., Weitkamp, E., Salmon, D., Dailami, N., Morley, A., Morgan, K., 2011. Food For Life Partnership evaluation: full report. University of the West of England, Bristol, UK.

Pitt, H., Jones, M., 2016. Scaling up and out as a pathway for food system transitions. Sustainability, 8(10), 1025–1041.

Preuss, L., 2011. On the contribution of public procurement to entrepreneurship and small business policy. Entrepreneurship & Regional Development, 23(9–10), 787–814.

Renting, H., Marsden, T.K., Banks, J., 2003. Understanding alternative food networks: exploring the role of short food supply chains in rural development. Environment and Planning A, 35(3), 393–411.

Scalvedi, M.L., Saba, A., 2018. Exploring local and organic food consumption in a holistic sustainability view. British Food Journal, 120(4), 749–762.

Seuring, S., Müller, M., 2008. From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production, 16(15), 1699–1710.

Simcoe, T., Toffel, M.W., 2014. Government green procurement spillovers: evidence from municipal building policies in California. Journal of Environmental Economics and Management, 68(3), 411–434.

Smith, J., Andersson, G., Gourlay, R., Karner, S., Mikkelsen, B.E., Sonnino, R., Barling, D., 2016. Balancing competing policy demands: the case of sustainable public sector food procurement. Journal of Cleaner Production, 112(1), 249–256.

Smithers, J., Lamarche, J., Joseph, A.E., 2008. Unpacking the terms of engagement with local food at the farmers' market: insights from Ontario. Journal of Rural Studies, 24(3), 337–350.

Soil Association, 2003. Food for Life: healthy, local, organic school meals. The Soil Association, Bristol, UK.

Sonnino, R., 2009. Quality food, public procurement, and sustainable development: the school meal revolution in Rome. Environment and Planning A, 41(2), 425–440.

Stefani, G., Tiberti, M., Lombardi, G.V., Cei, L., Sacchi, G., 2017. Public food procurement: a systematic literature review. International Journal on Food System Dynamics, 8(4), 270–283.

Stevenson, G.W., Pirog, R., 2008. Values-based supply chains: strategies for agrifood enterprises of the middle, in: Thomas A., Lyson, G., Stevenson, W., Welsh, R. Food and the Mid-Level Farm: Renewing an Agriculture of the Middle. MIT Press, Cambridge, USA.

Tregear, A., 2011. Progressing knowledge in alternative and local food networks: critical reflections and a research agenda. Journal of Rural Studies, 27(4), 419–430.

Uyarra, E., 2010. Opportunities for innovation through local government procurement. Report No. PLG/51, National Endowment for Science, Technology and the Arts, London, UK.

Uyarra E., Flanagan K,. 2010. Understanding the innovation impacts of public procurement. European Planning Studies, 18(1), 123–144.

Uyarra, E., Flanagan, K., Magro, E., Zabala-Iturriagagoitia, J.M., 2017. Anchoring the innovation impacts of public procurement to place: the role of conversations. Environment and Planning C: Politics and Space, 35(5), 828–848.

Ward, B., Lewis, J., 2002. The money trail. The New Economics Foundation, London, UK.

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L.J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J.A., Vries, W.D., Sibanda, L.M., Afshin, A., Chaudhary, A., Herrero, M., Agustina, R., Branca, F., Lartey, A., Fan, S., Crona, B., Fox, E., Bignet, V., Troell, M., Lindahl, T., Singh, S., Cornell, S.E., Reddy, K.S., Narain, S., Nishtar, S., Murray, C.J.L., 2019.

Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. The Lancet, 393(10170), 447–492.