Public Procurement of Food in the South West: opportunities and barriers to relocalising food supply

UNIVERSITY OF EXETER | Centre for Rural Policy Research

By Timothy Wilkinson, Caroline Nye, Matt Lobley, Andrew Clappison, Amanda Goodwin, Jed Hilton, Harry West, Sally Thompson, Greg MacQueen and Mark Fogerty

This report should be cited as:

Wilkinson, T.[1], Nye, C.[1], Lobley, M.[1], Clappison, A.[1], Goodwin, A.[2], Hilton, J.[1], West, H.[1], Thompson, S.[3], MacQueen, G.[3] and Fogerty, M.[3] (2022) *Public Procurement of Food in the South West Region: opportunities and barriers to relocalising food supply*. Centre for Rural Policy Research, University of Exeter.

ISBN: 978-0-902746-57-2

For further information about this project, please contact the Centre for Rural Policy Research crpr@exeter.ac.uk

March 2022

Project partners

This project was funded by Cornwall and Isles of Scilly Local Enterprise Partnership, Devon County Council, the Heart of the South West Local Enterprise Partnership, the National Farmers' Union, Somerset County Council and University of Exeter.

Thank you to those who participated in the study.

Report design

Veronica White – Impact Communications

[1] Centre for Rural Policy Research, University of Exeter
[2] Innovation, Impact and Business, University of Exeter
[3] Duchy College Rural Business School

Contents

List of tables

1. Executive Summary

The food that public organisations buy, and where that food comes from, is important. For instance, nationally, it has been estimated that in 2014 public sector organisations spent £2.4b annually on food products (Defra 2014). Coincidently, this is roughly equal to the current value of all agricultural support payments in England. The procurement of food served to those in the care and/or employment of public organisations has the potential to create far reaching social and economic change. Food procurement can generate a variety of benefits, not just through healthier diets for those who consume food served by public organisations, but for local economies and businesses, the natural environment, and for the climate more generally. Rethinking how food is procured by public bodies is increasingly recognised as playing an important part in transforming the UK food system and public health – for instance by the National Food Strategy. In addition, the impacts of the COVID-19 pandemic and Brexit on food supply chains have raised questions about the routes food takes to market, and onto the consumer plate.

Agriculture, food production and food manufacture are important drivers in the UK economy (Husnain, Ingram, Zurek 2020), contributing significant economic and employment benefits. While big players dominate some sectors, a large proportion are smaller businesses. In the food and drink manufacturing sector (excluding beverages) for instance, 96% of business are SME's and account for 25% of employment and total turnover of the sector (Husnain *et al.,* 2020, 16). In the South West, many agricultural enterprises are small family farms that contribute to the rural economy, local communities and to landscape quality (Winter and Lobley 2016). With the potential for changing land use and agricultural practice in achieving net zero (Committee on Climate Change 2020), the scope for the food system to enhance environments, contribute to local resilience and create employment is clear. The food public organisations purchase has the potential to support and improve the impacts of the food system. In the South West, there is an opportunity to increase competitiveness and productivity of the supply chain feeding into public procurement.

Against this background, the Centre for Rural Policy Research was commissioned by Devon County Council, The National Farmers' Union, Somerset County Council and the Heart of the South West Local Enterprise Partnership (HoTSW), with additional funding from the Cornwall and Isles of Scilly Local Enterprise Partnership, to research public sector food procurement in the South West. The project aimed to 'map' current demand from public procurers and estimate the amount of food being produced in the region. It also sought to identify and understand the barriers to, and opportunities for, the supply of food produced in the South West to public organisations in the region. Data were collected from a range of supply chain stakeholders including public procurers, food producers, food manufacturers, caterers and those with an overview of the South West food system.

Seeking to explore the possibilities for joining up demand from public organisations with the potential for the supply of food from the South West region, we approached over 120 contacts to invite them to participate in the research. The research team interviewed 39 supply chain stakeholders. We collected data from public procurers on spend on food and developed estimates of production in the region (using a combination of Defra June Survey data and Farm Business Survey data), and we have collated a variety of perspectives on the barriers and opportunities for public procurement in the South West.

Together, just seven of the organisations taking part in this research spend an estimated £17.3 million annually on food procurement, indicating that this is a significant market in the region. That said, we have identified a range of barriers to increasing the regionalisation of food procurement. Barriers to the procurement of food produced in the region by public organisations in the South West include:

- **The nature of demand from public organisations**; public organisations require consistent food supply but not all food businesses in the region have the scale to meet that demand.
- **The resource implications of tendering for contracts with public organisations**; high transaction costs and administration of tendering for contracts with public organisations limits supply from producers in the region. Procurers face administrative challenges too if they choose to source from multiple smaller suppliers.
- **Cultural and attitudinal factors**; individual passion rather than organisation policy tends to drive change and there was inertia among some stakeholders that limited the potential for change.
- **The limits of food production in the South West and its supply chain infrastructure**; such as seasonal availability, labour shortages and storage and distribution options.
- **Broad market structures** around accreditation, regulation and wider food policies.

The opportunities for increasing the procurement of food produced in the region by public organisations in the South West include:

- **Aggregating supply from South West producers** such as via storage and distribution centres.
- **Improving engagement between public organisations and regional businesses**, through more pre-market engagement on tenders, streamlining procurement processes and supporting regional suppliers.
- **Encouraging investment in the existing supply chain infrastructure.**
- **Clearer national food procurement policies to assist** with public procurement of local and healthy ingredients.
- **Developing greater public buy-in** to help drive initiatives forwards.

<u>Our research shows a growing interest among all stakeholders regarding the opportunities and benefits of shortened supply chains, but instigating change is still regarded as prohibitive by many.</u> We recommend that public procurement is made more accessible to regional producers and suppliers in the South West, that the region better support farmer-focussed supply chains, that there is a push for culture change among public organisations in the South West, and that the region continues to develop as a test bed for national change to the food system.

A successful localised food chain in the South West is likely to be multidimensional, combining a dynamic food purchasing system with both direct producer – customer and producer-national wholesaler relationships. Indeed, although there will be a need for capital investment (see below), many of the steps towards a more regionalised public sector food procurement system require change in working practices and culture. Individuals, such as CEOs, and organisations who can 'champion' a more regionalised approach will be key.

Many of our recommendations stemming from this research concern improved transparency and a more collaborative approach. We would like to note that although we experienced excellent engagement in the research by a number of individuals and organisations, it was often hard to identify who to engage with, and to access relevant information from publicly funded bodies. If the research team and our funding partners (with all the networks and resources available to us) found this difficult then it is not surprising that many smaller, regionally based businesses face considerable barriers and challenges in engaging with public sector food procurement. These barriers are far from insurmountable but are dependent upon sufficient will and drive existing among key individuals and organisations in the South West public sector food procurement system.

Ultimately, streamlining the procurement process between South West suppliers and the corresponding public sector will require existing barriers to be addressed, from the processing opportunities available at a micro level, to encouraging a huge cultural shift in thinking across the production, processing, wholesale and procurement sectors at a macro level. This can only begin with the encouragement of dialogue between all stakeholders involved, and the engagement and intervention of regional and national government. By harnessing the experience, knowledge, passion and possibility that has been shown to already exist, the South West can move towards a successful supply chain from which all stakeholders, including the end consumers, can benefit.

Below is a full list of our recommendations and actions. These fall into four broad categories:

- Drive culture change, within and between, public organisations in the South West
- Make public procurement more accessible to regional producers and suppliers in the South West
- Support farmer focussed supply chains in the South West
- Continue to develop the South West as a test bed for national change, share findings with government and other regions, and lobby government for changes to procurement processes

Recommendations

Each broad recommendation has two themes in which we have suggested a range of specific actions. Each specific recommendation has a priority rank;
1 = Urgent, short term action, and 2 = Medium term action.

Recommendation	Aim	Action	Priority
Drive culture change, within and between, public organisations in the South West	Build accountability	Develop a South West Food Procurement Declaration. This regional mission statement should have input from a range of public organisations.	1
		Secure buy-in from CEO and senior decision makers and ensure change in procurement forms part of organisational Key Performance Indicators, and implement local food procurement action plans on the basis of a South West Food Procurement Declaration (S).	1
		Include sourcing local food in procurement officer job descriptions.	1
		Public organisations should publicly report spend on food and the proportion produced/sourced from the region and its hinterland, on an annual basis, to ensure accurate monitoring and evaluation.	2
	Foster regional insight and share knowledge	Create a network for procurement officers from public organisations in the South West to share knowledge about procuring from, and engaging with, regional food businesses.	1
		Design knowledge extension/training that drives public sector demand for regional and seasonal food from relevant public sector stakeholders (e.g. catering staff and managers, chefs, procurement managers).	2
		Streamline data sharing. Data should be more easily accessible. Research ethics processes for low-risk research could be streamlined; the resources required to engage with several public organisations in the region place limitations on research.	2

Recommendation	Aim	Action	Priority
Make public procurement more accessible to regional producers and suppliers in the South West	Streamline tendering processes and build transparency through engagement with regional producers and suppliers	Use pre-market engagement to improve the quality of tenders. Public organisations should engage with regional producers and suppliers to explain how tenders will be evaluated and allow potential suppliers to shape tender.	1
		Consult regional producers and suppliers about alternative public procurement processes; examine concrete options, such as a two-stage tender process with the first being scored on capacity and quality etc, and the second round (or mini competitions) being scored on price.	1
		Develop a single accreditation system for all organisations across the public sector (avoiding new accreditations being required for each type of organisation).	2
	Make tenders more accessible to regional producers and suppliers	Reassess procurement criteria so as not to exclude regional producers. For instance, more could be done to accommodate the payment and delivery terms of regional producers.	2
		Reassess the design of procurement competitions. Consider where competitions could be limited to regional food businesses using PPN 11/20 to reserve below threshold procurement by geographical location and/or business type. Examine where contracts could be split into smaller lots to encourage regional food businesses to tender.	2
		Assist producers and suppliers in gaining relevant certifications and accreditation, such as Safe and Local Supplier Approval (SALSA).	2

Recommendation	Aim	Action	Priority
Support farmer focussed supply chains in the South West	Enable the aggregation of food products from producers and suppliers in the South West and support its supply into public organisations	Invest in the facilitation needed to aggregate food from multiple regional producers, such as farmer cooperative initiatives.	1
		Increase regional capacity for food processing, distribution and freezing by exploring investment in South West 'processing units' or 'distribution centres', or by building on existing supply chain infrastructure.	1
		Test options for the procurement of food produced in the region through a trial of a Dynamic Procurement System, for example through Food Hubs.	1
	Commit to sourcing healthy, sustainable food from the South West	Commit to making a proportion of regional food supply mandatory in public organisations in the South West.	1
		Commit to use of DEFRA's balanced scorecard; giving sustainability, health and quality and socio-economic impact more weighting, and to schemes that encourage sourcing fresh, sustainable and healthy food, such as the Soil Association's Food for Life Awards. Align with local initiatives, national campaigns and partnerships, such as Sustainable Food Places encouraging equitable supply chains.	1

Recommendation	Aim	Action	Priority
Continue to develop the South West as a test bed for national change, share findings with government and other regions, and lobby government for changes to procurement processes	Develop better understandings of the impact of food procurement on the region	Agree metrics for measuring the impact of public food procurement in the South West.	1
		Monitor and evaluate the impacts of food procurement from the region on its economy (for instance by measuring local multiplier effects) and on health and diet.	2
	Lobby for clarification and implementation of relevant legislation of food policies	Call for re-evaluation and simplification of Defra's Balanced Scorecard; it should be easier for procurers to use.	1
		Call for increased clarity around government buying standards and legislation. Government needs to clarify what criteria can be specified for procurement of local food in public sector tenders and ensure this is known throughout the supply chain.	1
		Call for more clarity for the farming sector generally regarding Defra's Environmental Land Management programme to ensure that a) a greater resilience of local farms in the South West and b) production capacity can be increased should the public procurement market become more accessible to local suppliers.	1
		Ensure sustainability agendas in new food policies move beyond simply focussing on environmental issues, and include social value, health, and economic growth. Food procurement should be part of sustainability action plans within and beyond the region.	2

2. Context and introduction

2.1. Introduction

Food and farming have an important role to play in the future of the rural economy, in achieving national net zero targets, and in improving a range of other environmental outcomes. It is increasingly recognised that effective public food procurement can provide a range of benefits that contribute to these goals, by stimulating a thriving local economy, improving environmental sustainability and by supplying nutritious food to customers. Given policy aims to increase local and regional supply into public procurement, it is vital to gain a more detailed understanding of the local public procurement 'landscape'. The public procurement supply chain offers important opportunities for the South West region. It offers the potential to join up regional food production and consumption, to provide a means to access food from a wide range of regional producers and growers, and is a means to stimulate economic competitiveness and drive up the quality of food offered by public organisations to their customers, service users and employees.

Against this background, Devon County Council, The National Farmers' Union, Somerset County Council and the Heart of the South West (HoTSW) Local Enterprise Partnership, with additional funding from Cornwall and Isles of Scilly Local Enterprise Partnership, commissioned the Centre for Rural Policy to undertake research about public sector food procurement in the South West. With a geographical focus on the South West, our research engaged with public procurement buyers, chefs and cooks in public sector kitchens, as well as producers and other suppliers, in order to understand:

- Current demand i.e. what public procurers currently buy.
- What would encourage public procurers to change current practices and source more locally?
- What are the opportunities and barriers to *diverting* existing production to public procurement within the South West area?
- What are the opportunities for, and barriers to, *switching* existing production in order to facilitate greater local supply into public procurement?

Drawing on a mix of interviews with key informants and any publicly available data, the research aimed to understand existing demand for public sector food procurement in the South West in terms of volumes of product, format, frequency of supply etc. It was hoped that this would form a 'baseline' from which future change may be measured and evaluated. However, as described below, for various reasons it proved very difficult to collect such data.

The interviews also involved understanding how procurers make purchasing decisions and the factors that influence their decision-making, including what would encourage more sourcing of food from the region. We interviewed food producers and manufacturers from the South West about what they saw as the barriers and opportunities to supplying public organisations in the region. We also interviewed public sector caterers in order to understand their perspective in terms of food preparation and menu planning.

2.2. Policy context and academic literature

2.2.1. The global food system: food, diet, health and environment

The current global food system is associated with a range of challenges including health challenges, the climate emergency, poverty, and environmental crises. The EAT-*Lancet* Commission on healthy diets from sustainable food systems (Willet *et al.* 2019) identified the production of food as being the most significant cause of environmental change globally, as well as highlighting the overwhelming impacts of unhealthy diets on morbidity and mortality. Similarly, the global call to action in the UN 2030 Agenda for Sustainable Development recognises food as vital, emphasising the need to '(e)nsure sustainable consumption and production patterns' (Goal 12). The way food is produced, bought, supplied, sold and consumed can be a part of whole system solution to the intertwined challenges of climate, nature and health crises. Food procurement is increasingly recognised as playing an essential part in transforming supply chains and addressing global challenges.

EAT-*Lancet* proposed five strategies to address serious and global issues created by the food system. These strategies seek to affect a 'Great Food Transformation'. The first of these strategies is to 'seek international and national commitment to shift towards healthy diets' (Willet *et al.* 2019, 470) and it is significant that part of achieving such a shift towards healthier and more sustainable food systems involves the use of food procurement policies and standards. Likewise, the UN goal of sustainable consumption and production invokes a target 'to promote public procurement practices that are sustainable in accordance with national policies and priorities' (Target 12.7), setting the '(d)egree of sustainable public procurement policies and action plan implementation' (Indicator 12.7.1) as an indicator. Authors of the EAT-*Lancet report* write:

> Contracts and procurement policies can be used to promote healthy diets from sustainable food systems in workplaces, schools, and venues where public meals are provided, but these policies need persistence and continued political leadership for success (Willet *et al.* 2019, 479).

Public procurement, therefore, offers a means to create widespread change in the food system, but it requires support and commitment at both national and local levels to be effective. Morgan (2008,6) has described the public provision of food as 'arguably a litmus test of states' commitment to sustainable development'. Broad policies and guidelines need to be materialised in action planning and implementation to create real change.

2.2.2. The UK food system and policy landscape

The importance of food to the nation's health, environment and economy was recognised in the commission of an independent review of the UK food system, the *National Food Strategy* (2021). The National Food Strategy produced a series of recommendations to government to transform the UK food system. The plan is crystallised in four themes: escape the junk food cycle and protect the NHS; reduce diet-based inequality; make the best of use of our land, and create a long-term shift in our food culture (NFS 2021, 141). Each theme comprises a number of recommendations, one of which concerns Government food procurement rules and processes and the types of food public organisations purchase. The recommendation is to '(s)trengthen Government procurement rules to ensure that taxpayer money is spent on healthy and sustainable food' (Recommendation 13, 253), proposing that the Government 'reform its Buying Standards for Food so that taxpayers' money goes on healthy and sustainable food' (NFS

2021, 253). One of the recommendations of our report (see Section 5) is to call for increased clarity around government buying standards and legislation.

Earlier reviews of Government Buying Standards for Food have sought to address what and how public bodies purchase food, by developing a way to evaluate a variety of factors, such as health and sustainability, when procuring food. In 2014, A Plan for Public Procurement (Defra 2014a) revised Government Buying Standards and recommended the use of a 'Balanced Scorecard' for public procurement of food. This streamlined both standards and guidance, providing a consistent buying approach across a range of factors in procurement decision-making (Defra 2014a, 4). The 'Balanced Scorecard' provided a toolkit for balancing complex criteria such as health and wellbeing, sustainability, and quality of service with more straightforward criteria like the cost of food (Defra 2014b, 2) enabling economic, environmental and social impacts of food procurement to be evaluated.

In 2016, procurement officers from Bath and North East Somerset (BANES) seeking to deliver a local food strategy and supply schools with fresh food, shifted away from sourcing from single suppliers, and, with Equilibrium Markets, piloted what has become known as Dynamic Food Procurement (see Box 1) or the ‘BANES model’. Unlike a framework contract which limits sourcing to selected suppliers who have joined at the start of a contracted period, the ‘BANES model’ allowed new suppliers to join the procurement system at any time and permitted businesses to tender for parts of a larger contract so smaller businesses could tender without needing to fulfil the entire contract (Dynamic Food Procurement National Advisory Board 2021, 2). The pilot created financial savings of 6% on previous contracts, including inflation and a saving of 6.01 tons of CO2 emissions per year (Dynamic Food Procurement National Advisory Board 2021, 1). The pilot demonstrated that dynamic purchasing could save money, benefit the environment, and address challenges of volume and consistency of supply that limited the potential of small and medium sized food producers to contract directly with the public sector.

Box 1. *An outline of Dynamic Food Procurement. Box collated from DFPNAB (undated), DFPNAB (2021), DPUK (2021).*

Dynamic Food Procurement has four key features:

1. Use of technology: uses a digital, online platform or marketplace
2. Accessibility: open to all potential suppliers via the digital platform; accessible to micro-, small- and medium sized businesses
3. Flexibility: allows multiple producers and suppliers to tender at any time (not just at start of a contract)
4. Transparency: transparency around social, environmental and economic values of products being supplied and procured

Based on the Bath and North East Somerset pilot, Crown Commercial Services sought to pilot a scaled-up version of the BANES model, selecting the South West region in Autumn 2019 (South West Food Hub, undated). In May 2020, Crown Commercial Services signed a Memorandum of Understanding with the South West Food Hub to deliver a South West pilot (The South West Food Hub 2021) known as the Future Food Framework pilot. There were delays to the pilot due to Crown Commercial Services staff redeployments and involvement in the governments COVID-19 response (EFRA 2021, 52, 53). Government funding for the pilot is currently under review.

In 2021, a House of Commons Environment, Food and Rural Affairs (ERFA) Committee enquiry into the *Public Sector Procurement of Food* found that there was no clear picture of how Government Buying Standards for Food and Catering (GBSF) were being followed by public organisations (EFRA 2021, 24). The committee queried whether GBSF were sufficient to promote change in procurement practices, given that '(t)here is no coherent system for monitoring compliance where public bodies are mandated to follow the GBSF' (EFRA 2021, 24). The review proposed that there should better monitoring compliance and was supportive of proposals that the balanced scorecard should also be made mandatory (EFRA 2021, 24), but noted that this 'may have adverse impacts on smaller suppliers who may not be able to afford the accreditation and certification required' (EFRA 2021, 24). The EFRA committee recommended that a South West pilot of Dynamic Procurement System should be prioritised (EFRA 2021, 26). In Winter 2021 a new organisation called Dynamic Purchasing UK Ltd. was set up to establish a coordination body that would use dynamic food procurement to buy food for local authorities and public institutions (DPUK 2021). It aims to help small and medium sized food producers supply public organisations and give public procurers a larger range of buying options.

The DEFRA UK Food Security Report (2021a) uses food procurement as a case study, highlighting it as a lever in the promotion of a healthy and sustainable food system in the UK but noting that the 'public procurement landscape is highly fragmented, and there are a wide range of delivery models'. The testing of delivery models and evaluation of their benefits is an important step in securing food supply into public organisations. Various procurement strategies have been initiated by non-governmental organisations (NGOs), such as the Cornwall Food Programme (Thatcher and Sharp 2008), and the Food for Life (FFL) framework approach (Morley 2020). For the latter, collaboration between four NGOs supported public sector procurers and caterers to offer healthy and sustainable food to the end consumer (Morley 2020). This was achieved through the promotion of a set of standards ensuring that more food was purchased from small, regional producers. In the context of this scheme, while numerous barriers exist to local food provision on the part of producers/SMEs (usually economic), the positive impacts on both cohorts were found to be significant, stimulating wider sustainability practices along the supply chain as well as increasing local and regional demand for certain sustainable food types.

2.2.3. Farmer focussed supply chains and regional food systems

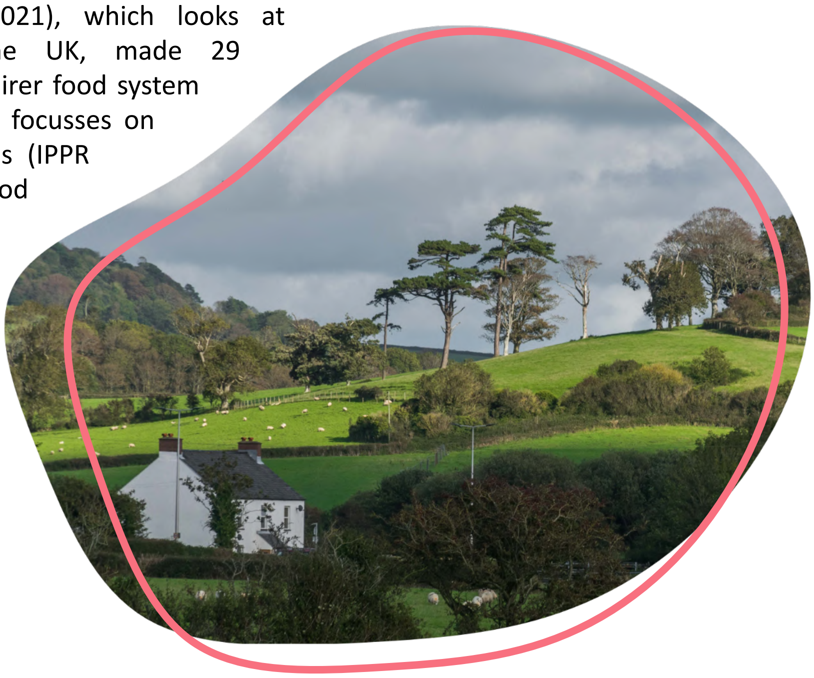
The COVID-19 pandemic created global supply chain disruption and Brexit has exacerbated these issues as routes to market and the trading environment have altered.

The New Economics Foundation's *Farmer Focused Routes to Market* (2020) evaluated the social, environmental and economic contribution of the organisation Growing Communities, looking at the impact of its vegetable scheme and farmers' market. The report found that shorter, local supply chains – or farmer focussed routes to market – used by Growing Communities, created an estimated £3.76 of economic, environmental and social value for every £1 spent. The report found that shorter supply chains used by Growing Communities enabled environmentally beneficial food production and provided farmers with financial security (NEC 2020, 29). These economic benefits were used by farmers to create social value and to generate further environmental benefits. Environmental outcomes were, however, difficult to quantify and give a financial value to (NEC 2020, 29). Sustain's *Beyond the Farmgate* (2021) highlighted the important role that supply chains and routes to market have in the kinds of food produced in the UK. Sustain argues for 'farmer focussed supply chains' or 'systems that are responsive to the farmers' needs and outputs and which pay farmers a fair price for what they produce' (Sustain 2021, 5). According to Sustain:

> Direct sales, food hubs, box schemes, independent retailers (butcher, grocers, bakers, etc.), farmers' markets, and independent small-scale supermarkets and wholesalers, might be considered farmer-focused, as well as aggregation and distribution initiatives such as Dynamic Procurement, though not all will be' (Sustain 2021, 5).

The report highlights that change requires support from multiple supply chain stakeholders and requires suitable local infrastructure and more effective regulation of supply chains (Sustain 2020, 20). Sustain (2020) make several recommendations around planning, investment, advice and trade, including that the UK government should 'create a growth plan to increase the market share of farmer-focused supply chains' and 'create a £500-750 million Local Food Investment Fund (LFIF) to provide strategic support across the UK for investment in localised agri-food infrastructure and enterprise' (Sustain 2021, 21). While public procurement is not explicitly mentioned in the recommendations, it is part of the policy landscape and a potential catalyst for strengthening localised food infrastructure.

The Institute of Public Policy Research, in their report *Building a Better Food System that Works for Everyone* (IFPPR 2021), which looks at implementing food system change in the UK, made 29 recommendations to deliver on a vision of a fairer food system (IPPR 2021, 15). One set of recommendations focusses on investment in local and regional food systems (IPPR 2021, 26), and includes a proposal to invest in 'food system infrastructure such as food hubs, local markets and processing facilities' (IPPR 2021, 26) and to '(scale) up the strategic use of public procurement to help support local economic growth, food system resilience, and the production and availability of sustainably produced food' (IPPR 2021, 26). The role of public procurement in changing the UK food system is highlighted.



2.2.4. Reviews of food service and procurement in public organisations

An evaluation of the *Cornwall Food Programme* (Thatcher and Sharp 2008), a localised procurement initiative run by Royal Cornwall Hospitals Trust (RCHT), highlights the resulting economic benefits. The study confirmed that the programme had 'a considerable impact on the local economy' (Thatcher and Sharp 2008, 253) and, when comparing the Cornwall Food Programme with another NHS Trust, that that there was 'considerable added value for local areas of localising purchasing' (Thatcher and Sharp 2008, 267). The authors used a model (Local Multiplier 3) to estimate local economic impacts of spend by RCHT on local suppliers and the value of local spend by those local suppliers in turn. Thatcher and Sharp (2008, 253, 262, 267) note limitations around data availability and shortcomings within the model meant results had a large margin of error. In 2003-2004, spend within Cornwall by RCHT on local suppliers was estimated to be £1,131,000; this generated additional expenditure of £910,625 from those suppliers (Thatcher and Sharp (2008, 262). Authors note that if data quality were improved the economic value of the programme may be much higher (Thatcher and Sharp (2008, 262).

Independent Review of NHS Hospital Food (DHSC 2020) made eight recommendations for change around catering staff support, nutrition and hydration, food safety, facilities, technology, enforcing standards, sustainability and waste, and forward planning. The report encourages more sustainable procurement, recommending the use of DEFRA's balanced score card, and that 'a 40% cost/60% quality split is mandated across the NHS for the procurement of food and all catering services' (DHSC 2020, 20). The report highlights that local procurement of seasonal food can have environmental and economic benefits (DHSC 2020, 65).

Food for Life Served Here Impact report (2021) provides monitoring evidence for the Food For Life Served Here certification scheme which comprises sustainable catering standards. These standards translate into the provision of fresh, local and sustainable meals at a variety of organisations. From July 2020 to June 2021 Food for Life Served Here served 407,243,750 meals at 7388 sites across the UK (Food for Life 2021, 9). The majority of the c.2 million meals served daily were in schools, but tens of thousands were served daily in hospitals, universities, early years centres and workplaces too (Food for Life 2021, 9). Organisations holding the Food For Life Award – a gold, silver, bronze certification – all meet 12 baseline standards around ingredients (e.g. free range eggs, no endangered fish), good practice (e.g. 75% of dishes freshly prepared, training provided to staff) and customer care (e.g. menus meet dietary and cultural needs, seasonal ingredients used and highlighted). Those with silver or gold awarded meet higher standards. The Food for Life Served Here scheme has a social return on investment of £4.41 for every £1 spent (Food For Life 2021, 10).

Student Voice on the School Food Standards (Bite Back 2030, 2021) provides findings based on ten panel discussions with young people in England aged 13-18 about their experience of school food. The report highlights systemic barriers around eating healthily and around availability, price and presentation (Bite Back 2030 2021, 7). The need for more vegetarian and vegan options was part of a broader desire for healthy food choices. There was a consensus that healthier options cost more and a view that those options look less appealing, raising the need for more consideration of food presentation (Bite Back 2030 2021, 7-12). Panellists suggested that schools were not meeting School Food Standards, such as no chocolate or confectionary (Bite Back 2030 2021, 12). Issues of fairness were raised, with food provision varying by school and area (Bite Back 2030 2021, 17), free drinking water not always being available (Bite Back 2030 2021, 20) and those receiving free school meals experiencing limited food choices (Bite Back 2030 2021, 21). Pupils want more say in school food, but feedback mechanisms are lacking (Bite Back 2030 2021, 23). The report gives a range of recommendations to schools and caterers, and to government, including one to government on 'Improving the quality of food that schools procure, to ensure nutritious, sustainable and enjoyable food is the rule, not the exception, for every child' (Bite Back 2030 2021, 28).

2.2.5. Academic research

Given the policy aim of increasing local food supply into public procurement, local governments face increasing political pressure to improve the efficiency of their procurement processes (Preuss 2009). A more detailed understanding of the public procurement 'landscape' is required. Although public procurement of food is increasingly seen as a driver for improved health, environment and local economies, research examining relationships between public sector demand and supply chains in the UK, is limited (Neto and Caldas 2017; Morley 2020, Rimmington, Smith and Hawkins 2006). Rimmington *et al.* (2006), worked with contract caterers to develop consensus around principles of sustainable food procurement. Morley (2021) has explored the impact of public procurement on the business strategies of small food producers in England. Relationships between food waste, catering practice and food procurement have been explored at hospitals in Wales (Sonnino and McWilliam, 2011). Stahlbrand (2016) examined the impact and significance of the Food Life Catering Mark at two universities, emphasising broad, social, technical and environmental factors in creating space for innovation by individual champions who introduced the initiative. Thatcher and Sharp's study (2008) evaluating the local economic benefits of the Cornwall Food Programme, which sought local suppliers for NHS Trusts in Cornwall, confirmed considerable impact on the economy using the Local Multiplier tool and qualitative interviews.

Morgan (2008) has explored sustainable procurement by public sector canteens – provisioning of the 'public plate' – through the lens of school food service. Morgan (2008, 28-29) highlighted three key barriers to sustainable procurement; whole life costing, lack of procurement skills and regulatory ambiguity. Taking a wider view not limited to food, Preuss (2009) reviewed initiatives from local government authorities in England which fostered sustainable development through public procurement (Preuss 2009) highlighting transparency, organisational culture and strategy and flexibility in public policy as important factors in sustainable procurement (Preuss 2009, 219-220). While it should not be assumed that greener public procurement, shorter supply chains and the provision of food sourced from the region will be automatically transformative in terms of sustainable development, the role of the public procurement of food is widely seen as crucial to the achievement of sustainable goals (Goodwin-Hawkins 2020, 27). Further empirical evidence is required in order to determine how change might be achieved and what barriers might prohibit supply chain stakeholders from contributing to such a transition.

Looking at research from beyond the UK, there is literature on 'Green Public Procurement' (e.g. Neto and Caldas 2018, Ceritto *et al.* 2016, Lindstrom *et al*. 2020, Testa *et al.* 2016). Schemes from across the EU have been reviewed (Neto and Caldas 2018), and analysed, for instance, for carbon footprint savings (Ceritto *et al.* 2016) and for their effect on agricultural land use (Ceritto *et al*. 2016). This work is comparative - contrasting various schemes, and highlighting opportunities and drawbacks (e.g. Testa *et al.* 2016). Comparisons have also been made of multiple international schemes aiming to encourage sustainable procurement practices (e.g. Brammer and Walker 2008) and exploring sustainable procurement and e-procurement (Brammer and Walker 2012).

3. Methods

3.1. Sample

We aimed to engage with a sample of individuals and organisations across the procurement supply chain in the South West. To do this participants were divided into five cohorts. These were: 1. public procurers, 2. chefs and kitchen staff, 3. food producers, 4. food processors/ manufacturer and 5. 'overview' participants, which included food producer representatives, food initiatives and non-governmental organisations. We completed 39 interviews in total (see Table 1).

***Table 1**. Participant groups and sample structure*

Participant group	Completed interviews	How we refer to participants in the results
Public procurers; including procurement officers and category managers	10	'Procurer 1', 'Procurer 2' etc.
Caterers, kitchen staff and those involved in food preparation	4	'Caterer 1', 'Caterer 2' etc.
Food producers; including farmers and growers	7	'Producer 1', 'Producer 2' etc.
Those with an overview of the South West supply chain; including food producer representatives	9	'Overview 1', 'Overview 2' etc
Food processors and manufactures; those involved changing raw ingredients into food	9	'Processor 1', 'Processor 2' etc.
TOTAL INTERVIEWS	**39**	

We found that we achieved data saturation[1] after approximately 7 interviews from each cohort. We found reaching kitchen staff working within public organisations challenging because contact details were often unavailable. While procurement staff sometimes referred us to those involved in food preparation, this introduction was not enough always enough to secure an interview. We interviewed contract caterers supplying public organisations. Although we were unable to reach 7 interviews for the catering and kitchen staff participant group, some public procurers were able to comment on kitchen capacity.

3.2. Data collection and recruitment

We approached over 120 contacts via email to invite them to take part in the research. These contacts were supplied by partners and stakeholders, and were identified using existing University networks and web searches. Our initial email to potential participants gave an outline of the research including examples of questions we wished to ask. A researcher contacted participants who expressed interest in the project. The researcher shared our consent form and information sheet, and a 60-minute interview was scheduled. Audio from the interviews was recorded using Zoom, or Dictaphone for telephone interviews. The audio recording was subsequently transcribed, and anonymised, prior to coding using NVivo.

[1] The point at which no new information is forthcoming.

3.3. Interview themes

We prepared interview protocols for each of the five participant cohorts. These were structured by broad themes, each containing several questions. Interviews followed the protocol but there was flexibility for researchers to adjust to participants' knowledge, experience, job role etc.

***Table 2**. Interview protocol themes*

Participant cohort	Question themes
Procurers	• General information about food procurement in the organisation and suppliers • Key factors in food purchasing decision-making • Food sourced in the South West • Barriers and opportunities to supplying food to public organisations in the South West • Procurement standards and principles • Processing and preparation
Food producers	• General information about the business • Production levels and supply into public procurement • Barriers and opportunities to supplying food to public organisation in the South West • South West processing/manufacturing capacity
Overview (including food producer representatives)	• General information about the individual/ business/ organisation • Experience of food producers and views on public procurement • Food production and the capacity in the South West to supply public organisation • South West processing/manufacturing capacity • Views on procurement practices of public organisations
Catering and kitchen	• General information about the organisation, kitchen staffing and equipment • Menu planning • Ingredients sourced to the South West • Barriers and opportunities to sourcing food from producers in the South West
Food processors/ manufacturers	• General information about the business • Experience of public procurement • Barriers and opportunities to supplying food to public organisation in the South West • South West processing/manufacturing capacity

3.4. Procurer survey ‘matrix’

We aimed to capture spend by food type and format, and to understand how much of each type/format was produced in the South West. We also asked procurers about their annual spend on food and whether they could estimate how much of the food they bought was produced in the South West.

We faced challenges collecting standardised quantitative data about procurement of food by public organisations due to issues over data availability. There were also difficulties associated with estimating the proportion of local sourcing, for example, concerns about commercial sensitivity and data sharing, as well as fluctuating annual spend, and distortions caused by COVID-19. Ultimately, we were only able to secure data on procurement spend from seven organisations.

3.5. A note on definitions: the South West Region and public organisations

For the purposes of this research we have adopted the old Government Office definition of the South West, which includes the counties of Devon, Dorset, Cornwall, Somerset and South Gloucestershire, and Wiltshire. However, we recognise that the geographies of individuals and organisations can look quite different to someone located in Wiltshire for example compared to a procurement officer in West Devon. Local supply for Wiltshire could easily encompass Hampshire or other neighbouring counties. In recognition of this when we use the term 'region' we are really referring to the South West and its hinterland. Where the term ‘local’ was used in interviews, participants were left to interpret the term freely, although several highlighted its ambiguity and sought to define it further.

We use the term ‘public organisations’ throughout the report. We note that this includes organisations of different sizes and with a variety of geographies. Some were single organisations, others part of a regional group or wider national system. Procurement policies are determined at a variety of scales and methods of procuring differ e.g. contracting out or in-house. For the purposes of this report we have grouped ‘public organisations’ together but there is variability within this group.

3.6. Research ethics

The project sought to engage a range of participants groups across the food supply chain, and to involve a range of organisations and businesses within each of these groups. For public organisations for example, we wished to engage with local authorities, care homes, schools, hospitals, the military and prisons to understand food procurement from a range of perspectives. To undertake research with the National Health Service, the Ministry of Defence (MOD) and Her Majesties Prisons and Probation Service (HMPPS), one must apply to these bodies for permission. For relatively short projects, this poses a challenge in terms of resources.

In addition to applying for and receiving ethics approval from the Ethics Committee of the College of Social Sciences and International Studies of the University of Exeter, we have spent approximately 22 research days on *external* ethics processes during the project. The research team have extensive experience of University research ethics applications; however, this was the first time we had applied for external approval via the Health Research Authority, HMPPS and the MOD. We acknowledge that our inexperience played a part in the time spent, to a degree, for instance, we spent time establishing what the process of applying was and understanding requirements. However, we do not believe that the process could be reduced to less than 5 days per application. While we recognise the importance of research ethics and of the safety of research participants and researchers, we wish to highlight that these processes are a barrier to rapid and responsive research on shorter, resource-limited projects. In Appendix 2, we review the reasons for significant time input by the research team into external ethics applications as part of this project.

***Table 3**. Research ethics permissions*

Research ethics committee	Permits research with who?	Ethics reference number	Status
University of Exeter	Local authorities Schools Food producers Food manufacturers Food producer representatives	489087	Approved
Health Research Authority	NHS sites such as hospitals and care homes in the South West of England	IRAS project ID: 304781 Protocol number: 2021-22-06 REC reference: 21/HRA/4492	Approved
Her Majesty's Prison and Probation Services	Prisons in the South West of England	IRAS project ID: 304781	Application declined; insufficient time to resubmit
Ministry of Defence	Military sites in the South West of England	Scientific Assessment Committee reference: 20211114-SAC	Application prepared & submitted to Scientific Assessment Committee. Unable to secure written support from OF5/B2 grade to proceed to MODREC review

4. Results

4.1. Current procurement spend

As a result of the some of the data collection challenges noted in Section 3.4, data that were supplied were uneven. Respondents provided figures in different formats: spend in the last month, last 6 months, the last 12 months, spend 'pre-COVID-19', and spend 'in a normal year'. Where figures were supplied, they were sometimes given as estimates e.g. between £2 million and £2.5 million. We used mid-points where estimates of this kind were given.

The total annual spend from the seven procurers who supplied data was £17.3 million, with individual spend ranging from £270,000 to £6.5m. The proportion of estimated spend on products from producers in the South West ranged from "very little" to 70%. Some said it was very difficult to estimate the proportion of food sourced from South West producers from the information they had available.

4.2. Agricultural production in the South West

This section includes estimates of crop (see Table 5) and livestock (see Table 7) production in the South West. These estimates were produced using data from:

- DEFRA's June Census data from 2019 (DEFRA 2019), which collected detailed information on agriculture in England including cropping activities, land use, livestock number and labour.
- DEFRA's Farm Business Survey from 2019 (Farm Business Survey 2021a, 2021b), an annual survey collecting management accounting information from farm businesses.
- A model for sheep and beef output that accounts for replacement rates (see Appendix 3).
- Food Standards Agency data on Approved Establishments for processing animals from February 2022.

For some agricultural products we were able to obtain figures on numbers of livestock or area of land used to grow crops but yield data was unavailable. Estimates of production levels were made where we were able to gather data on both (see Tables 5 and 7). Where price data was also available estimates of the gross financial value of agricultural production in the region were made too (see Tables 4 and 6). Please see Appendix 1 for further details of the data sources and assumptions involved in estimating the production quantities.

Estimates of tonnes of agricultural product produced in the South West are broadly reflective of what we know about the agricultural profile of the region with considerable production from the dairy sector along with large quantities of beef and lamb. Crops (notably cereals) are grown on some of the better land in the region. Vegetable and fruit production appears relatively modest and as at least one respondent remarked, there is scope to increase in-region horticultural production. Based on our financial estimate below, which are based on just 14 types of product, we can say the financial value of agricultural production in the South West is at least £1.8 billion a year. This of course excludes those product types we were not able to make price estimates for and excludes manufactured food where value is added to raw ingredients.

We note that a DEFRA (2021b) review found that in 2020 the South West made the largest contribution to England's 'Total Income from Farming' (DEFRA 2021b, 2) of any region. The 'Total Income from Farming' is the total profit from all farming business on a calendar year basis or, the 'income generated by production within the agriculture industry, including subsidies, and represents business profits and remuneration for work done by owners and other unpaid workers' (DEFRA 2021b, 2). The South West contributed 20% (£509 million) to England's Total Income from Farming (DEFRA 2021b, 4). The reports notes that the South West has been in the top three regions for Total Income From Farming since 2010, however, this is partly attributable to it having the largest farmed area of any region in England (DEFRA 2021b, 26). Total Income from Farming per hectare was lower than England's average since 2010 (except in 2017) (DEFRA 2021b, 26) partly as a result of limits to agricultural production in the South West's upland areas (e.g. Dartmoor, Exmoor). The South West region accounts for 39% of England's dairy output and 27% of England's beef and sheep production.

4.2.1. Arable and Horticultural Crops

Table 5 provides figures on how the area of arable or horticultural crops differ in the South West according to Defra June Census data (DEFRA 2019). We used the Farm Business Survey data builder (FBS 2021a) and benchmarking (FBS 2021b) to obtain yield data. Based on these we calculated estimated levels of crop production in 2019 in the South West region. We note that not all crops produced in the region are available for human consumption and considerable amounts are used for animal feed, but we are unable to separate these out from the wider data. We have not included yield data for maize as this is only grown for animal food. For crops where we could estimate production levels and obtain price information, we estimated the total gross value of the crop type per annum, in the South West region. This is presented in Table 4.

We estimate that the South West produced almost 1.5 million tonnes of wheat in 2019, almost 925 thousand tonnes of barley (spring and winter barley combined) and over 320 thousand tonnes of potatoes (see Table 5). Although production levels will be lower than more arable intensive regions, the South West still produces large volumes of crops. We estimate that the wheat produced in the region has a value of over £212 million per year, Barley over £116 million per year and potatoes over £55 million per year (see Table 4). The scale and value of crop production is far larger than the spend in our small sample of public organisations in on all types of food (£17.3 million), indicating considerable potential for sourcing these ingredients from the South West.

***Table 4**. Estimate of the financial value of crops in the South West. Table contains public sector information licensed under the Open Government Licence v3.0. Data source: DEFRA 2019 and Farm Business Survey 2021a, 2021b.*

<table>
<tr><th>Crop type</th><th>Estimated production in total in 2019 (tonnes)</th><th>£/tonne (Duchy FBS valuation Dec 2019)</th><th>Estimated gross value (£)/ year</th></tr>
<tr><td>Wheat</td><td>1,472,488</td><td>£144</td><td>£212,038,229</td></tr>
<tr><td>Winter barley</td><td>384,600</td><td rowspan="2">£126</td><td rowspan="2">£116,483,713</td></tr>
<tr><td>Spring barley</td><td>539,874</td></tr>
<tr><td>Oats</td><td>124,000[2]</td><td>£108</td><td>£13,392,000</td></tr>
<tr><td>Potatoes</td><td>321,962</td><td>£172</td><td>£55,377,549</td></tr>
<tr><td>Oilseed rape</td><td>140,089</td><td>£330</td><td>£46,229,419</td></tr>
</table>

[2] Estimate based on Defra 5 year average production (2015 to 2019)

Table 5. *Estimate of production of crops in the South West. Table contains public sector information licensed under the Open Government Licence v3.0. Data source: DEFRA 2019 and Farm Business Survey 2021a, 2021b.*

Crop type		South West June census 2019 (hectares)	5 year average production (2015 - 2019), DEFRA 2019 (tonnes)	Yield (tonnes per ha)	Estimated production in total in 2019 (tonnes)
Arable crop	Wheat	160,752	1,167,000	9.16[3]	1,472,488
	Winter barley	48,438	803,000	7.94[4]	384,600
	Spring barley	81,552		6.62[5]	539,874
	Oats	26,035	124,000		124,000[6]
	Other cereals	9,015			
	Total cereals	325,793			
	Potatoes	8,021		40.14[7]	321,962
	Sugar beet	2,020			
	Field beans	10,055		4.59[8]	46,155
	Peas for harvesting dry	3,619		3.21[9]	11,617
	Oilseed rape	47,488	131,000	2.95[10]	140,089
	Crops for stockfeed	13,019			
	Maize	64,033			
	Bare fallow/GAEC12 land	22,747			
Horticultural crops	Peas and beans	882			
	All other veg and salad	5,655			
	Total vegetables grown in open	6,537			
	Glasshouse and protected crops	77			
	Top fruit	3,318			
	Small fruit	815			
	Hardy nursery stock	3,967			

[3] Farm Business Survey (2021a)
[4] Farm Business Survey (2021a)
[5] Farm Business Survey (2021a)
[6] No yield data available
[7] Farm Business Survey (2021b)
[8] Farm Business Survey (2021b)
[9] Farm Business Survey (2021b)
[10] Farm Business Survey (2021b)

4.2.2. Livestock

Table 7 provides estimates of livestock production in the South West based on Defra June Census data on livestock numbers (DEFRA 2019) and a variety of sources for yield data (see footnotes). We estimate that the South West produces over 3.2 billion litres of milk – equivalent to about 1,200 Olympic swimming pools (see Table 7)! The region also produces significant quantities of meat: over 94 thousand tonnes of beef, just over 100 thousand tonnes of pork and 34 thousand tonnes of lamb (see Table 7). We estimate over a billion eggs are produced in the region per year (see Table 7). These are huge figures; there is clearly an opportunity for public organisations to use this regional supply.

Based on the estimated livestock production in 2019, we used price estimates from a variety of sources to estimate the gross value of livestock in 2019 (see Table 6). Milk production is worth over £967 million, clean beef almost £200 million, chicken almost £176 million, pork over £160 million and lamb over £146 million. The sum of the gross value of livestock products produced in the South West is in excess of £1.8 billion.

Table 6. *Estimate of value of livestock in the South West. Table contains public sector information licensed under the Open Government Licence v3.0. Data source: DEFRA 2019 and Farm Business Survey 2021a, 2021b.*

Livestock type		Estimated total production 2019	Price	Estimated gross value (£) in 2019
Cattle	Dairy breeding herd	3,290,866,863 litres	29.41p/ litre[11]	£967,843,945
	clean beef (estimated animals)	60,843 tonnes	£3.20/ kg dead weight[12]	£194,697,600
	cow beef (estimated animals)	33,903 tonnes	£2.24/ kg dead weight[13]	£75,942,720
Pigs	Breeding pigs	98,812,455 kg pork	£1.60/ kg dead weight[14]	£157,675,034
	*Estimated cull sows and boars (49% replacement rate)	3,867,294 kg pork	£0.80/ kg dead weight[15]	£3,093,835
Sheep	Female breeding flock	7,102 tonnes mutton	£2.40/ kg dead weight[16]	£17,044,800
	Lambs under 1yr	34,040 tonnes lamb	£4.30/ kg dead weight[17]	£146,303,920
Poultry	Laying flock	1,266,433,639 eggs	72.8p/doz[18]	£76,830,307
	Broilers (table chicken)	152,871,410 kg chicken	£1.15/kg[19]	£175,802,122

[11] Defra (2022b)
[12] Unpublished. Duchy College Farm Business Survey valuations.
[13] Data not available. Broad estimate of 70% clean beef price used.
[14] DEFRA (2021c)
[15] Data not available. Broad estimate of 50% clean pork price used.
[16] Based on FBS (2021a) average cull ewe price December 2019: £72 live weight. Assumed live weight is 60kg and KO% is 50%.
[17] DEFRA (2021c)
[18] DEFRA (2022a)
[19] Crane, Douthwaite and Organ (2020)

__Table 7.__ Estimates of livestock production in the South West in 2019. Table contains public sector information licensed under the Open Government Licence v3.0. Data source: DEFRA 2019 and Farm Business Survey 2021a, 2021b.

Livestock type		Livestock numbers (DEFRA 2019)	Average yield	Estimated total production in 2019	Units
Cattle	Dairy breeding herd	428,220	7,685[20]	3,290,866,863	litres
	Beef breeding herd	181,527			
	Dairy female 2yr+ no offspring	60,650			
	Beef female 2yr+ no offspring	57,264			
	Dairy female 1-2yr	115,199			
	Beef female 1-2yr	140,754			
	Dairy female <1yr	119,756			
	Beef female <1yr	162,372			
	Male 2 years and over	58,845			
	Male less than 2 years	383,663			
	Total cattle	1,708,250			
	clean beef (estimated animals)		176,026[21]	60,843	tonnes
	cow beef (estimated animals)		111,058[22]	33,903	tonnes
Pigs	Breeding pigs	53,946	1,832[23]	98,812,455	kg pork
	Fattening pigs (incl. barren sows)	394,654			
	*Estimated cull sows and boars (49% replacement rate)		26,434[24]	3,867,294	kg pork
	Total pigs	448,600			
Sheep	Female breeding flock	1,556,624	est. 264,626 culls[25]	7,102	tonnes of mutton
	Rams	42,020			
	Lambs under 1yr	1,522,698	est. 1,705,437 lambs[26]	34,040	tonnes of lamb
	Other sheep (1 year and over)	38,045			
	Total sheep and lambs	3,159,387			
Goats	Total goats	29,586			
Horses	Total horses	37,108			
Farmed Deer	Total farmed deer	5,713			

[20] Rural Business School (2020)
[21] Based on model for beef (see Appendix 3)
[22] Based on model for beef (see Appendix 3)
[23] Walton and Hildreth (2020)
[24] Walton and Hildreth (2020)
[25] Based on model for sheep (see Appendix 3)
[26] Based on model for sheep (see Appendix 3)

Poultry	Laying flock	4,249,777	298[27]	1,266,433,639	eggs
	Breeding flock	1,371,331			
	Broilers (table chicken)	12,928,033	12[28]	152,871,410	kg chicken
	Ducks	105,681		1,732,047	kg
	Geese	10,868			
	Turkeys	136,451		5,628,329	kg
	All other poultry	1,424,881			
	Total poultry	20,227,022			

4.3. Food processing in the South West

Using Food Standard Agency data (FSA 2022) we have estimated the total number of establishments in the South West approved for processing animals. These are establishments approved to handle, prepare or produce products of animal origin (FSA 2022) so the table excludes processing units solely handling horticultural crops. We have used a monthly snapshot of approved establishments from February 2022 (FSA 2022). The data gives an indication of the number of establishments processing food from animals in the South West, but there are two key caveats. First, the number of approved establishments fluctuate over time, and second, as some facilities are counted multiple times in the data set, for instance where food is processed, packaged and dispatched at the same facility, the total given in Table 8, is an over-estimate.

There are approximately 600 food-processing establishments in the South West that deal with animal products. Over half are processing plants, around a third are involved in meat processing, a quarter in packing and about a tenth in fish processing and cold storage. This indicates a breadth and depth of food processing going on in the region. The FSA (2022) data does not give information on the food processing capacity of approved establishments, so care should be taken in making links between the number of establishments and their processing capacity. We can expect a large proportion of these businesses to be SMEs, given that 96% of business food and drink manufacturing sector, excluding beverages, fall into this category (Husnain, Ingram, Zurek 2020, 16). Future research could explore the degree to which approved establishments in the South West have the capacity to process additional food products.

[27] Crane, Douthwaite and Organ (2020)
[28] Crane, Douthwaite and Organ (2020)

Table 8. *Numbers of approved food establishments. Table contains public sector information licensed under the Open Government Licence v3.0. Data Source: Food Standards Agency Approved Food Establishments at 01 February 2022 (FSA 2022).*

Sector	Establishment Type	Total Approved Establishments
Fish	Purification Centre	24
	Fresh Fishery Products	29
	Factory Vessel	3
	Freezer Vessel	6
Meat	Slaughter house	31
	Meat Preparation	91
	Mince Meat	57
	Game Handling	5
	Cutting Plant	50
Egg	Liquid Egg	5
General	Producing Plant	1
	Processing Plant	390
	Rewrapping and packing	40
	Packing centre	115
	Dispatch Centre	27
	Cold Store	77
	Wholesale Market	1
TOTAL		621

4.4. Benefits of a localised supply chain

Participants with experience or knowledge of local food supply into public procurement in the South West highlighted benefits gained from the process. A common discourse was that organisations, producers, processors and the end consumer could all reap numerous benefits from being part of a shorted supply chain. This included improved food quality, benefits to the local economy, improved relationships, greater control and autonomy in procurement, and economic benefits.

Food Quality

Improving the quality of food is associated with short and long-term benefits in terms of the end consumer, whether a student, a hospital patient or a care home resident. Several participants referred to an example where the patients of a particular hospital, upon switching one of the items on their menu to a local food supplier, showed earlier signs of recovery. Participants discussing other hospitals in the South West also supported this perception. In the case of primary care, shorter hospital stays resulting from improved quality of food lead to identifiable savings. It was also suggested that better quality food might improve the experience of being in hospital for some patients.

> *'One of the key findings was that it got them feeling a little bit better about being in hospital, and they actually improved the speed of recovery from things like operations' (Overview 1)*

'If you can get decent quality meals to hospital patients, they will get better quickly and they will leave quicker and in a better, fitter state' (Processor 9)

The word 'quality' appears to have multiple meanings in relation to food procurement, and can be viewed in terms of standards, compliance, appearance, taste, freshness and/or levels of nutrition, but overall respondents assumed that local food equated to good quality. One procurement manager described how basing purchasing decisions around price 'just drives quality down' (Procurer 8) and would be unlikely to benefit the end consumer.

'Traditionally [supplying public organisations] is seen as an area where it is very low margin. It can be high volume, but the quality is not very good and it is not very good because of the amount of money that has to be put onto it in order to satisfy distribution needs' (Processor 7)

While it cannot be assumed that local food is always healthier, due to processing, storage, cooking and dietary factors (Goodwin-Hawkins 2020) generally, the nutritional benefits of locally supplied food were highlighted as a benefit. Although this would need to be supported with empirical evidence, the implications for end consumers, such as school children, elderly care home residents and hospital patients, could be significant. We note that evidence could play an important role in future lobbying and advocacy.

Economic benefits

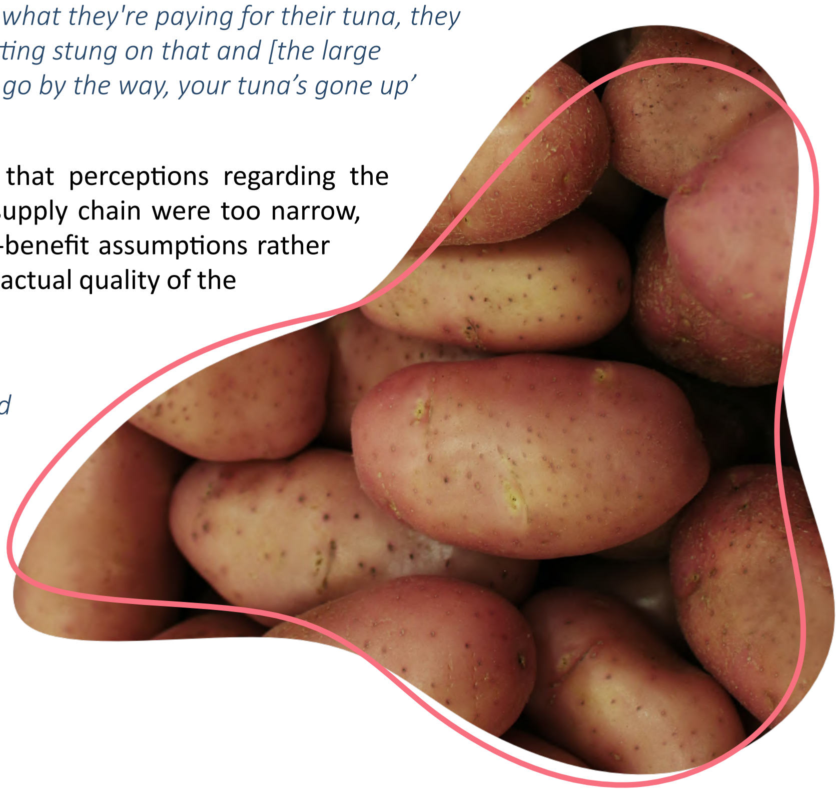
There is a general assumption that local and organic food automatically equate to more expensive food, and thus a potential loss to the buying organisation. However, a small number of participants with experience or knowledge of purchasing local food said this is not always true. One initiative demonstrated that changing their procurement systems to one of local food supply saved money.

'There's also the assumption that anything sustainable or local will always be more expensive, it's almost a go-to assumption but no, it's not. Our school food contract actually saved money, which is highly unexpected, but it proved the model worked' (Procurer 5)

'It's looking at that bigger picture overall and thinking yeah, I might pay a brilliant price for that, but if I asked them what they're paying for their tuna, they wouldn't know. They could be getting stung on that and [the large national supplier] aren't going to go by the way, your tuna's gone up' (Procurer 4)

Equally, several participants suggested that perceptions regarding the economic benefits of a more localised supply chain were too narrow, focussing on simple direct financial cost-benefit assumptions rather than a wider range of factors such as the actual quality of the product.

'If a side of beef cooks up and it shrinks and you don't get the yield out of it is actually not cost effective to use a product. So, sometimes it's better to go to a more expensive product because your yield is going to be better [...] (Procurer 1)



In addition to quality, key measures which need to be considered include the social value, health value and environmental value associated with purchasing decisions, some of which will influence economic value in less obvious ways; for example, improved health leading to fewer hospital visits. Quantification of the environmental, social and health benefits of local food is challenging, causing these factors to be frequently ignored in decision-making process.

> *'The price of produce on the day is very different to the full cost of it [to the] public sector' (Overview 3)*

> *'Some of the things that we've got is a story and our care of the environment, and all of that stuff, and where does that sit as a value in terms of price versus value in public procurement?' (Processor 10)*

Likewise, a financial cost-benefit approach also ignores many of the negative aspects associated with food sourced from outside of the region, such as carbon release caused by transportation, or issues related to importing from countries where labour standards or animal welfare might be less efficiently regulated, among other things.

> *'I think we have [participant states a relatively small number] suppliers in total. And about 80% of our spend is within 20 miles of [South West location]. We spend just over a million a year with local food suppliers' (Caterer 2)*

Supporting the local economy was another benefit referred to by a number of participants, not just in terms of direct recipients, such as the producer or processor, but also through job creation in the local area.

> *'We know that by sourcing locally, we are then supporting around 90 jobs in the South West so that's important to us' (Procurer 3)*

> *'There is far more value to the local economy through buying locally' (Overview 3)*

Several producers stated that they were not producing to their fullest capacity due to there not being the demand for the extra product. By creating a guaranteed demand through public procurement contracts, producers would benefit economically and potentially create more jobs in the local area as a result.

> *'We can potentially grow a lot more vegetables here. We don't grow a lot more because we don't want to push ourselves beyond the market that we can sell [in to]' (Producer 3)*

Investment and market opportunities can subsequently lead to innovation and growth for small businesses. This can result from guaranteed demand for their product (e.g. from public organisations) allowing a level of certainty to facilitate future plans for the business. In terms of innovation, one food processing business described how a specialised bespoke meat product developed for a customer was rolled out to become popular among other customers, adding value to their business.

The promotion of greater local economic health, vitality and development through public procurement relationships is a key potential outcome of changing the value criteria currently applied to public procurement principles and contracts. Some studies suggest that keeping money in a local economy not only increases job creation but also stimulates economic development in the area more effectively than through attracting larger corporations (Duffy and Pringle 2013). Benefits of a more localised supply chain in the South West can be measured empirically using tools such as the Local Multiplier (LM3) tool. This is an online tool designed by the New Economics Foundation which enables organisations to measure their economic impact by analysing expenditure on any given geographical area (Bua, Taylor & Gonzalez (2018).

Producer wellbeing

A number of participants suggested that the health and wellbeing benefits of moving towards a more localised food supply chain might extend beyond those directly experienced by the end consumer. They highlighted potential additional benefits for food producers. In a climate where mental health issues in farming are of considerable concern to the industry, there is a belief that the wellbeing of producers, and other suppliers in the South West, might potentially be improved through adding value to their products, offering a more secure market, building relationships locally, enabling knowledge extension and skills development, and providing linkages with other farmers locally.

> *'I think the producers get a better rate for their products, there is no doubt about that [...] And the wellbeing of these producers. I think it is probably more about making sure that they are doing well' (Procurer 10)*

Improved relationships between procurers and suppliers

Participants saw shorter supply chains as improving relationships between procurers and their suppliers; allowing both parties to benefit from shared passions, a more intimate knowledge of provenance and the supply chain, better engagement, better 'stories', and improved public relations. This provides the opportunity to better connect the end consumer with their food as well as offering a platform for SMEs to be seen by the wider community.

> *'They should be more than just somebody who provides food. They can provide great PR, a great story; they can support local events. So, we're trying to move into much more of a punchy relationship rather than just a transactional relationship' (Procurer 8)*

In addition, relationships built between public organisation procurement staff and local suppliers were valued due to local suppliers being regarded as responsive, easy to communicate with at short notice, flexible and open to having 'frank conversations'. Levels of trust described by those already operating under a localised system appear to by high which can reduce the work burden or stress experienced by purchasing staff.

> *'You build a relationship with them, so it's not really seen as a burden because, to be honest, the bigger companies can't offer you that after sales' (Procurer 7)*

> *'The pandemic showed us that with some of those big boys you're just a bit of a number, sometimes, and they don't care [...] But the local ones are like, this is my bread and butter, we need to make sure we look after them, and they make sure they get it to you. So, it's all about that service [...] I think there's probably less risks with working with a local supplier than there is nationally' (Procurer 4)*

At the same time, such relationships were said to be able to counter shocks that larger businesses could not, such as the transport issues witnessed during the COVID-19 pandemic, not only due to shorter distances being travelled but also because smaller businesses tend to go 'above and beyond' to reach their customer.

> *'You get a better product and a better outcome at the end if you have a personal relationship with people. Sometimes that can be difficult, but I think having a conversation with people instead of just sending off an email [...] means that they go above and beyond for us, and we'll go above and beyond for them' (Procurer 1)*

Greater control and autonomy in procurement

There appears to be a significant difference in the levels of autonomy procurement staff have in relation to sustainable purchasing. At some organisations staff appear to have high levels of autonomy and have been able to use their expertise and knowledge to navigate prohibitive stipulations in tendering as well as in building relationships with local suppliers. This might be partially attributed to individual drive, but also depends to some extent upon the organisation itself.

> *'Our contracting model and our sourcing strategy allows us to retain control to maintain the brand image and the aspirations that we want. As opposed to just handing it in with your wholesaler and having to check periodically that they are doing what they said they were going to do' (Procurer 7)*

Greater autonomy allows for increased flexibility which can, in some cases, lead to cost savings. One example given was where a set recipe in a public organisation kitchen required courgettes but due to poor weather the price of courgettes soared. In this case, autonomy allowed the organisation to change the recipe and buy local kale instead, saving the organisation money. According to this particular participant:

> *'It's about putting some human decision making back into a dumb system that's built on efficiency' (Overview 2)*

Environmental benefits

Surprisingly few respondents referred to any direct linkage between shortened supply chains and environmental or biodiversity outcomes when discussing the benefits of regional public food procurement. Where the environment was mentioned, it was most commonly in relation to climate change or the 'climate crisis', followed by environmental measures required to fulfil certain standards or regulatory requirements, and the environmental impacts of importing food.

> *'There are environmental benefits, climate benefits, related to buying local' (Producer 1)*

Respondents also commented on the potential of a localised food supply chain to reduce carbon emissions more generally. In spite of the lack of direct reference to the environment, terminology employed by the majority of respondents did imply that possible benefits to the environment arising from a more 'local food agenda' are almost a given, and while terms such as 'sustainability' can be ambiguous in their meaning and do not always necessarily refer to the environment, it is likely that where it was used in these interviews, the environment was likely part of what was being referred to.

Embracing new buying habits were also important to some procurement managers in terms of the carbon footprint of the organisation, with several demonstrating forward thinking regarding organisational journeying towards net zero, demonstrated by scoring a percentage of tender criteria on environmental sustainability.

> *'We want to be net zero carbon by 2030' (Overview 7)*

It is important to recognise that for some organisations already implementing some kind of sustainability or net zero strategy, this did not always imply shorter supply chains or local food procurement, but rather a wider analysis of lowest carbon alternatives to procurement. At the time this study was undertaken, few of those procuring organisations taking part had a food-related sustainability agenda in place, but several stated that the formation of such agendas was 'in process'.

4.5. Barriers to public procurement of food from the South West

A number of barriers exist to shortening the supply chain and facilitating an increase in local supply of goods into the public procurement system. Such barriers are potentially faced by all supply chain stakeholders: producers, procurement officers, catering managers and staff, processors, manufacturers, and wholesalers. Understanding these barriers is crucial for informing all interested stakeholders where the weaknesses or gaps are in the system, and is the first stage in determining a pathway to creating a more functional and resilient regional supply chain. The barriers can be categorised as follows: the nature of demand from public organisations, the resource implications of tendering, culture and attitudes, the limits of South West food production and supply chain infrastructure, and broad market structures.

4.5.1. The nature of demand from public organisations

Public organisations need consistent food supply to deliver meals to their customers. Many smaller food businesses do not have the scale or capacity to deliver sufficient volumes within the timelines required by public organisations. This issue was mentioned in almost every interview when we raised barriers to public procurement. This quote from a respondent was illustrative:

> *'Many of the intermediate purchasers require very large quantities, without imperfections, and at short notice' (Overview 5)*

> *'Some of these contracts have been worked out in the past under the banner of big is beautiful, I think. So, it's therefore very difficult for small producers and suppliers to break into it' (Overview 1)*

The mismatch between the scale of public sector demand and some regional food business production levels inhibits direct supply into public organisations. The scale of regional producers can also be restrictive for businesses who could supply public organisations via a wholesaler. A wholesaler who supplies public organisations in the South West said:

> *'We're quite happy to look at SMEs and work with them to get them to a standard where they can supply to us. But we do have certain standards that needs to be met which often, with some of the SMEs, their scale means that they can't work with us' (Overview 8)*

This was also the case for some processors, who would not consider using farms below a certain size for their supply.

While participants identified the mismatch between the scale of smaller food businesses and demand from public organisations, one food manufacturer highlighted that some public organisations in the South West required volumes that were too small to make it worthwhile for them (a larger scale producer) to supply. They said 'Schools, they're just very difficult because it's such tiny volumes' (Processor 5). Another processor representative stated that:

> *'We wouldn't be able to get all of the ingredients that we want to produce what we make locally. We also wouldn't be able to sell everything we make [...] a hundred tonnes plus of food a week [...] we wouldn't be able to sell that volume locally [...] we are a global business working in a global supply chain' (Processor 7)*

The inability for small or local producers to supply to scale was a factor that deterred both producers and procurers from engaging in a more localised supply chain. Many producers stated that they would be unlikely to be able to supply the quantities required by public organisations and therefore did not consider that to be a potential market for their produce.

> *'If somebody came to me and said "we would like to set up a contract, but you have got to supply 100 lambs a month, every month" we would struggle with doing that' (Producer 4)*

> *'The biggest barrier for the South West is volume. There is not a chicken manufacturer in the South West that can deal with volume' (Caterer 3)*

Many procurers similarly assumed that relying on direct producer supply might prove too much of a risk in terms of producer capacity. Several from each cohort did, however, recognise the opportunity that producer cooperation or produce aggregation might hold in relation to overcoming this problem. While smaller businesses may have aspirations of growing and gaining contracts with public bodies, the process of scaling-up is a challenge.

> *'The main thing is their (SMEs) ability to supply, so their scale and how they scale up the business to meet demand. That's often a challenge for some of them, and a lot of them will have aspirations of becoming big, but they don't know how to do it. And that's often a problem that we need to look through for them and then determine how we can help them, and if we can, at this stage' (Overview 8)*

Adapting quickly to demand was also cited as a challenge for smaller suppliers, with examples such as the quick response required by schools and universities to the COVID-19 pandemic for the supply of meals, needing to move rapidly from hot, cooked lunches to cold, packed meals or emergency meal delivery being given.

> *'So when, for example, all of the students last year [...] were being quarantined and all that kind of stuff, we had, all of a sudden, to be feeding three meals a day to all of those students, delivering it to their doors, to people who weren't in catered residences. So [colleague] had to have the ability to go from that being his benchmark that he knows of meals, and all of a sudden he's having to provide 2000 more meals, a day. And that had to be scaled up in in a heartbeat, immediately, and then scaled back down again so he didn't have a commitment for that level of purchasing for the next year' (Procurer 2)*

Broadly, participants viewed the public procurement supply chain as having efficiency as its priority. This favours larger, national suppliers who are able to supply any size of organisation with the majority of their procurement needs, often over and above simply that of food. These suppliers tend to be resource-heavy in comparison with smaller suppliers, particularly with regards to numbers of staff and their associated skills. They are able to offer guaranteed volumes, efficient and frequent distribution and delivery, confidence in food safety, accreditation and quality control, and scalability, and unlike smaller food businesses, they tend to have the experience and skills required to navigate the tendering process. Large distributors are often able to meet non-food supply requirements as well.

> *'It has been set up in such a way that you've deskilled everything so much within the public sector, that there is no other way for them to be supplied than through one of the huge great big companies that would be able to give them everything and charge them accordingly' (Processor 7)*

Many South West producers are aware of the public sector reliance on large, national suppliers and are likely to be deterred further from trying to engage with such contracts, viewing them as being 'dominated by the big boys' (Overview 1).

Several interviewees, however, highlighted that large, national wholesalers need not be regarded as opponents to localised supply chain initiatives. Some national wholesale businesses are reported to have helped meet local supply policies for customers by playing a brokerage role and creating new, targeted relationships with specific producers or processors in the region.

> *'If you looked at the contract, it most probably isn't written there, but they know what they will do because they're invested in us as a company, they really do understand what we stand for. And they're passionate about local as well' (Procurer 1)*

> *'We've done some work with some of the wholesalers that are working into the food contracts, and that sort of thing as well. And sometimes it's easier to go through an intermediary like that than it is to try and do it directly yourself' (Processor 1)*

It is important, therefore, that all players, large and small, are included in any new procurement strategies moving forward to ensure an effective and resilient chain of food supply to public organisations.

4.5.2. Resource implications of tendering

Complexity of tender process

The process of tendering for public procurement contracts was regarded by many supply chain stakeholders we interviewed as inaccessible and overly complex. The transaction costs and administrative burden of tendering were seen, by some, as hampering the supply of locally produced food to public organisations in the South West. For smaller producers, the combination of staff time and the necessary skills required to tender is a key barrier to supplying into public procurement. Some businesses faced administrative barriers such as a lack of human resources or lack of skills and experience.

> *'Getting the right skill set and experience and knowledge. I still think that is the biggest barrier' (Overview 1)*

Often, the knowledge of how difficult it is to tender is enough to dissuade food businesses from considering engaging with the process.

> *'The bidding process is just horrendous and beyond most people's willingness to try and engage in it [...] They haven't got the knowledge and the confidence in the marketplace to make it work' (Overview 1)*

> *'I know farmers that just don't want to leave the farm. And actually, one of the barriers is it is that really human thing of how confident are they? How connected are they? How good are they at the other stuff like marketing and so on?' (Overview 10)*

Some food producers and manufactures who have tried to enter the procurement process have been put off due to past failures and costs incurred. Costs include time, but also external services, such as where a business has paid a solicitor to assist with contract preparation.

It was frequently reported that tender documentation could be extremely off-putting for potential suppliers. The length (in some cases, up to 80 pages) and format of the documentation both acted as barriers for SMEs. One public procurer explained how they received no local tenders for a contract:

> *'No local suppliers tendered for it. We went out to talk to the market manager about it and [they're] like "yeah, I can't. I don't have time. You know, I'm delivering, I'm sorting, I'm pricing, I'm doing the books in the evening. I can't do your [i.e. the procuring organisation's] forty page document"' (Procurer 8)*

> *'I'm just remembering masses and masses of documentation, loads and loads of questions' (Producer 6)*

In some cases a lack of skills on the part of the producer might mean that, in order to engage in public procurement, they need to employ external services, such as a solicitor, or recruit extra staff with the knowledge required to engage with large procurement tendering contracts. Or, they must acquire the necessary skills themselves, which can be time consuming. The opportunity cost can be considerable.

> *'If I put my small producer hat on for a minute, where does that time come from? What am I not going to do to create time to do that and, therefore, is it worth that pursuit? Actually, I've got 1000 other things I could do' (Overview 3)*

The timing of the issuing of tenders by public organisations has resource implications for producers. One participant recounted an example of a tender closing during summer harvest, when producers are very limited on time.

> *'They tried to go out to get producers to send back their documentation at the height of summer. Well, that's when they're harvesting' (Overview 11)*

Procuring organisations might avoid seeking local suppliers not only for reasons of convenience or inertia, but also because they are not sufficiently knowledgeable to know how to go about it.

> *'From the procurement side, it's nervousness [...] it hadn't been done that way before' (Procurer 5)*

Administrative burden of managing multiple suppliers

For procurers, the administration of multiple local suppliers means that it can be more efficient to source from a single supplier. Some public procurers gave a sense of the administrative implications of sourcing from multiple local suppliers.

> *'Having ten suppliers for different categories into the [public organisation] versus one means ten sets of orders every single time, ten sets of invoices that need to be paid, ten suppliers that need to be managed on a monthly and quarterly and annually basis' (Procurer 2)*

Participants highlighted that for food producers in the region to meet the demand from public organisations it would require sourcing the food from multiple suppliers, and this has resource implications for the body administrating suppliers.

'Why they [public organisations] go with someone like [names large national wholesaler] is that they can do everything: the eggs, the meat, the veg, the fruit… probably the kitchen towel… pretty much one phone call gets everything delivered tomorrow. And [sourcing from multiple local suppliers] is just so complicated, it could be twenty-nine things turning up tomorrow and three of them not turning up. And we're [public organisations] not highly paying chefs, we're paying people to open bags and put things in microwaves and deep fat fryers… the system works, because we've simplified it' (Overview 2)

This gives a sense of the way using multiple suppliers creates more work than using a single supplier, although not procurers saw multiple suppliers as burden. One food manufacturer described why public organisations being supplied from a large wholesaler was preferable for them; it is more efficient in the use of staff resources.

'(I)f they're [a public organisation] part of a national deal [i.e. contract with large wholesaler], it's easy. Nobody has to do any work. They can just accept the terms of a national deal, they order their milk, they use it, and that's it, nobody queries it. If they buy local, somebody's got to manage it, check that the price is right, they've got to deal with queries. So then, there's this person in a job. And before you know it, they've got a team of six people working for them and all they're doing is buying milk. Then, there's a change of management, they come in and think they can save that money, and that's them gone' (Processor 5)

Stakeholders across the chain are likely to view transitioning their system as inconvenient, according to several interviewees. Some procurers will want to avoid additional work associated with sourcing within the region, and some producers and processors might prefer to operate within familiar markets, rather than learn the skills required for public procurement bureaucracy.

'For both the suppliers and for the buyers, it needs to be made a lot more simple. Because everybody has got a huge amount of pressure on them […] There's only so much effort can be put into sourcing more responsibly' (Overview 3)

Inflexible and inconsistent contractual arrangements

The length of contracts, inconsistent contracting arrangements between public organisations, and a lack of transparency around tender assessment were all identified as barriers to the procurement of food produced in the South West by public organisations in the South West.

Some suppliers are contracted for five years meaning that the introduction of new processes will take time to be incorporated into organisational policies. Existing procurement strategies limit the potential for change:

'Contractually, now that we've selected the strategy that we have, we would potentially be in breach of contract if we started sourcing everything from outside of our current contract' (Procurer 2)

This limits what procurers' options are for contracting new suppliers. For producers and other potential suppliers, inconsistent arrangements and requirements between public organisations are a barrier to supplying. As one participant put it:

'There is a complete lack of consistency from one contracting authority to another, and a complete lack of visibility. And I actually know a South West producer that… they supply a couple of [public organisations], and actually it's

really difficult. It's not like [a producer is on a list with one public organisation] then [another public organisation] can pick you up as a local supplier. It's very much dependent on how that contracting authority wants to procure their food' (Overview 11)

Lack of transparency around specific procurement frameworks, competition and processes were viewed as a barrier. Some participants regarded the lack of transparency around how tenders are assessed as the principal barrier to small suppliers, stating that a lack of clarity and information can result in discrimination and lack of fairness.

'An SME might pitch for the same contract as somebody else. They might be commercially, on the face of it, comparable. But, if there's an overrider in the background that is predicated on complete supply, then they're not going to be taken into account [...] That is the lack of transparency' (Overview 3)

'Lack of visibility in the marketplace. So, lack of visibility of who's buying and where they're buying from [...] because these historical procurement structures exist, it's become like a nominated supplier, so that even when they're going through the contract caterers and the wholesalers, they've got a specific nominated supplier for the market' (Overview 11)

Some participants highlighted a gap between requests for local food supply in tenders, and what is perceived as the underlying factor determining supplier selection: price.

'In tenders, there are a number of things that people will always put in the document is standard. But you know that, in a lot of times they play lip service to it because, ultimately, they are price driven. So they will want local sourcing free range food organic if possible. But here's the budget that we've got, which is absolutely impossible to make that happen. And so we take it relatively seriously, but I would say in a lot tend to processes it's just lip service' (Caterer 4)

Lack of clarity around regulations, resources and tools

Knowledge and understanding of current public sector procurement regulations appeared to differ across participants, including those in charge of procurement, with some believing the stipulation of local suppliers to be prohibited, while others claimed that this was not the case.

'The first thing, something that has been claimed to be a barrier, but it isn't [...] would be the rules. They have never been a barrier. [Some people think] they didn't allow the sort of flexibility to be able to use small producers. Not so. That has never been true. Everybody uses those rules ... creatively and intelligently. It's quite easy to' (Procurer 10)

'I'm not that hot on procurement law' (Procurer 1)

'Procurement law has changed. Historically you had to use European Procurement Laws which required contracts to be open to all. Now you can build in weighting for local, or social value' (Overview 7)

Generally, it appeared that any limitations on local food specifications in tendering documents could be addressed 'creatively', should the procuring organisation so wish, but appears that risk attached to this might depend upon the type or size of organisation involved.

'There are ways around it, by being creative' (Procurer 5)

The overall perception was that the UK's exit from the EU will remove barriers to the specification of regional supply in the procurement process. Increasing weighting across social and environmental aspects should now be possible for other public sector organisations. We note that Policy Procurement Note 11/20 (Cabinet Office 2020) changed the way goods, services and works below various value thresholds could be procured from the start of 2021. Central Government departments, Executive Agencies and Non-Departmental Public Bodies can reserve procurement to suppliers within a geographical area, and specify that only Small, Medium sized Enterprises (SMEs) and Voluntary, Community and Social Enterprises (VCSEs), can bid for contracts (Cabinet Office 2020, 8). Value thresholds apply; for Supplies and Services the threshold is £122, 986 (Cabinet Office 2020, 7), as do various other criteria (Cabinet Office 2020), however these criteria can be used together (Cabinet Office 2020, 9) so a procurement competition for SMEs/VCSEs within a certain geographical area could be used.

In terms of other resources and tools designed to assist procurers in the sustainable purchasing decisions, lack of clarification or knowledge continued to be a theme. Awareness of Defra's Balanced Scorecard, for example, was patchy among interview participants, with several respondents working in procurement who had either not heard of it or were unclear as to its purpose. Of those who were aware of it, feedback was mixed, but generally suggested that although the concept was good, implementation so far had been ineffective or insufficient. There is confidence that with some reworking and a greater level of support in implementation, Defra's Balanced Scorecard could prove a very useful tool for progressing the agenda of localising food procurement in the South West.

> *'It was a really good idea, but it was badly implemented [...] there was no support for people to use it' (Producer 5)*

One public organisation found it more effective to develop their own standards and self-regulation, which was cited as being more effective as it meant that they could work within their own resources and priorities in that area. Such strategies might be championed at a more regional level with guidelines, training and incentives being developed to do so.

The term 'local' itself proved to be challenging to define for all stakeholders, with some believing that it should be determined by approximate region or distance from the procuring organisation. It was generally agreed, however, that the definition should be relatively loose, so as not to exclude neighbouring regions where supply was appropriate.

Lack of clear national and local government policies

Several criticisms were raised regarding insufficient policies related to localising the food system. According to participants, the sustainability agenda has been skewed towards the environmental dimension, largely excluding the more socioeconomic dimensions. In addition, any policies currently in place with regards to food are not mandatory across the entire public sector and lack regulation and enforcement.

> *'There has to be change at central government on [...] regulation before you can get a full engagement' (Procurer 6)*

The National Food Strategy (National Food Strategy 2021) highlighted that mandatory interventions tend to be more successful than those which are voluntary, and pointed out that many of the governmental policies launched between 1992 and 2020 placed the onus on individuals rather than organisations or policy to facilitate healthier diets. It makes the suggestion that the effectiveness of current policies be assessed in order to devise clearer, more effective policies.

4.5.3. Cultural and attitudinal factors

Reliance on individual passion, not organisational policy

As important as certain individuals are to driving local procurement strategies within organisations, the impact of them leaving their role can be equally important to the sustainability of their strategy. Multiple stakeholders referred to scenarios where, upon new staff taking up a post in procurement or catering within an organisation, months or years of work, strategising, and relationship building could be terminated rapidly, to be replaced with the incoming individual's preference of working.

> *'There was a [person] in the [named organisation] who was renowned about 10 years ago for having really changed the food system in hospitals and procured locally. But apparently, last I heard, [they] had left the [named organisation] and everything [they] introduced had not persisted' (Overview 4)*

Such circumstances were referred to on numerous occasions across organisation types, highlighting how a reliance on an individual rather than organisational policy can erase years of relationship-building, experience and value built by a previous member of staff or team with local suppliers.

> *'The new [member of staff] has just changed everything […] So it is one delivery, once a week, one invoice, one place, very simple. And I can understand why he did it, but it is not great […]. He was doing that to demonstrate he could save money, so what he has done is save money on one hand, and appeared to do so, but on the other hand has actually lost all those fantastic things' (Procurer 10)*

The primary problem is that individuals, rather than organisational policy, currently drive many local supplier-public procurement relationships, making not only the strategy vulnerable, but also those producers and processors who are part of the chain. Losing contracts in this way risks discouraging those same suppliers from engaging with public procurement in the future. Power over such decisions is not limited to procurement managers or catering staff alone. It is also held by parents of schoolchildren, head teachers, and organisation directors. One processor participant revealed that he discovered that he was not even informed by the procuring organisation that his contract had ended.

> *'It's usually driven by key people rather than an organisational drive and that's one of the barriers' (Procurer 5)*

Several of these key individuals were described as 'going against the grain', which is indicative of the inertia which is prevalent among many public procurement bodies.

There was also mention of the need for specialist procurement managers who were experienced in working with particular market sectors. For example:

> *'Food should be procured by specialists who kind of who know what's going on, particularly around supply markets, you know, farmers are very different to cleaning product providers' (Procurer 5)*

It is clear that, for the moment, the placement of informed, pro-active individuals at the heart of the procurement process remains key to any organisation wishing to take steps towards a more sustainable approach to their food supply.

Intransigence and inertia

Interview data revealed that inertia among stakeholders often acts as a significant barrier to an organisation shifting its food procurement to a more local system, even if there are other individuals who are trying to drive a more sustainable agenda within the same organisation. Being resistant to change might stem from personal preference over menu designs, feeling more comfortable preparing certain foodstuffs, inflexibility, lack of skill, pre-existing relationships, time constraints, or a more general perception of convenience, among other things. It was frequently suggested that catering staff demonstrated inertia, although procurement managers and organisation directors were also cited to have been obstructive. At the other end of the chain, producers and farmers might also resist change, for similar reasons.

> *'School cooks, they can be quite stuck in their ways. They've been doing the same thing for quite a long time. They have menus on a kind of rota […]. So, to get them to change from that and change the menu design is actually quite difficult' (Procurer 5)*

> *'(What are the barriers for producers…) Probably a lot of issues around convenience. Farmers are quite conservative in doing something the same way years, they're just going to carry on doing it. A lot of farmers are anyway' (Overview 4)*

> *'I don't know why they have that system that they fix the same menu for two terms. It just seems… it's not very practical from a […] local supplier point of view' (Producer 3)*

Many interview participants referred to the need for more cooperation and collaboration between different stakeholders to assist the evolution of a more localised procurement system in the public sector. However, several noted how collaboration might not be normalised among different stakeholders yet, particularly among farmers.

> *'The initial reticence to work together is just inbuilt into many producers' (Overview 3)*

> *'English farmers are not that good at cooperating and working with their neighbour and things like that' (Producer 2)*

Lack of engagement, networks and contact opportunities

While many food businesses in the region expressed an interest in supplying into public procurement, many participants suggested that a lack of engagement meant they did not have the experience, information or understanding of processes to do so. For some there was a complete absence of engagement between the businesses and public organisations:

> *'We don't have any engagement with [public organisations], so you know we're not hearing from them, we don't know what they want [but] we haven't pursued it either, so we haven't really looked for it. So, there's a vacuum of dialogue' (Processor 8)*

Several producers described the process of identifying or accessing the relevant individual with whom to engage particularly challenging. 'Getting in front of the right people' was felt to be key in negotiating further engagement in public sector contracts.

> *'Do you speak to the chef? Is there a procurement manager? Is there a South West regional manager? They tend to have these very hierarchical structures and it's very hard to find out who exactly to speak to [...] How do we make them aware that there are companies like [us] out there who would be absolutely delighted to service the public sector? (Producer 4)*

There was uncertainty about the nature of demand from public organisations in the South West:

> *'At the moment public sector procurement is seen as a rather nebulous thing that's out there in the distance [...] There isn't a lot of confidence in that particular marketplace [...] I've always felt that we need to pull the market towards the producers and hang it there like a bunch of fruit that they can easily pick' (Overview 1)*

> *'There is a huge barrier in the fact that the marketplace is not very well understood by farmers' (Overview 11)*

A lack of experience or knowledge of local food supply or procurement leads to and results from a lack of networks and connection opportunities between the key stakeholders along the chain. The role of existing relationships between procurers and suppliers should not be overlooked, as trust, reliability, and the ability to react quickly all feed into relationships becoming entrenched between businesses and organisations. This can make it particularly difficult for new, smaller producers to break into the market and create new relationships with purchasing organisations.

> *'Everybody talks about public sector procurement as if it's a tap that you can just very quickly turn [...] on overnight. That's not the way it works. Markets for food take years to develop and that's how you breed the confidence [...] Where it doesn't work is where that confidence is a bit shaky. And you'll then find the supply chains are a bit shaky, and the confidence at the bottom level, at the supplier end, is not there' (Overview 1)*

> *'[What do you see as the key barriers to your company supplying more food into the local public procurement supply chain?] Probably contacts within that supply chain' (Processor 2)*

More generally, it was suggested that, in some cases, entrenched eating habits and food preferences in the South West mean that certain food products which are available are unlikely to appeal to procurers or consumers in the area. One example provided was that of fish:

> *'The British don't eat the number of species that [...] are available so, really the majority of the sales are cod and haddock in the UK, and everything else has to find another market' (Processor 7)*

These wider cultural preferences and food habits can, therefore, also limit opportunities to localising the food supply system.

4.5.4. The limits of South West food production and supply chain infrastructure

Lack of availability of certain foodstuffs in region

One barrier to public procurement organisations securing a large proportion of their food locally is the limited availability of certain foodstuffs, such as pork, some grains and exotic fruits.

> *'It wouldn't meet the demands... well, for example, for grain related foods, because much of the South West is not suitable for that kind of production' (Overview 5)*

> *'The problem is that there aren't that many pig farms in Devon' (Processor 2)*

Some of these obstacles can be overcome, for example, using commercial glasshouses or polytunnels to grow certain fruits. In the case of pork, it was reported by a participant that pig farms are more likely to be located close to arable farms of which there are few in the South West. However, figures reveal that although comparatively few, a number of pig farms do exist in the South West. A sustainable food supply chain in the South West will, therefore, need to rely on other regions to some extent for certain types of foodstuffs but the potential exists for more to be produced within the region.

One catering company with experience of preparing and delivering meals into public organisations did, however, state the following:

> *'We are able to source everything but dry store goods (tinned foods) from the area' (Caterer 2)*

One respondent believed that one barrier to overall capacity was the inefficient use of land in the South West. They suggested that more regenerative, mixed farming methods might allow for an increased production of food in the region, and that by transitioning to such methods, environmental delivery could be delivered in tandem with an increase in food production.

> *'Were the South West to be able to produce more of its own food, and I think it could produce a lot more of its own food, many areas of farming would need to diversify out of purely livestock farming largely sheep. And that is not impossible, but it needs much more regenerative farming methods' (Overview 5)*

Seasonality

A number of respondents stated that the growing season and seasonality of certain foodstuffs produced in the South West was prohibitive to a consistent supply of food, which was sometimes perceived as being more work by some members of staff, particularly kitchen and catering staff. This is due to the need to change menus in order to work with the timings of seasonal produce. End consumer preferences (e.g. children being unlikely to eat certain vegetables) and food preparation skills of catering staff might also be affected by seasonality issues.

> *'Seasonality means less choice' (Caterer 1)*

> *'Seasonality creates problems. If you want your tomatoes in the winter, you're not gonna get them from Cornwall, you know so there's customer expectation management, so I think seasonality drives a lot of it' (Procurer 8)*

One procurer did suggest, however, that adapting procurement and catering patterns to the seasonality of regional produce might allow procurers to save money.

> *'There's people that will be trying to use a certain commodity at a different time of year […] Why's that so expensive when I buy it at [a national supplier]? Because you're not taking into account the seasonality, that's why' (Procurer 4)*

Education and training regarding seasonal produce is thought to be lacking across the sector

> *'I think there's an element of education with it as well. And it's knowing what glut of what products is available at what time of year. And if you can provide people with that information, they can plan seasonal menus around everything. Because we're at massive fault in this country of not going with seasonal menus, because everything can be bought in and flown all around the world' (Procurer 4)*

Processing barriers

Participant verdicts regarding the impact of processing opportunities or limitations were extremely varied. Many public sector organisations appear to rely on produce arriving in a pre-processed format (e.g. chopped vegetables). This immediately limits many potential SME suppliers who do not own or have access to the relevant equipment by which to prepare their produce for sale in this format.

> *'If there was more dicing and slicing and rumbling and freezing capacity in the South West I think it would open up all sorts of opportunities […] We have our own washing facilities, so our parsnips, potatoes, carrots are washed down. But there are very few processing facilities in the South West' (Producer 4)*

> *'Sometimes it's more cost effective to buy products that have been prepped in a certain way' (Caterer 3)*

Several producers stated that they would consider investing in their own processing infrastructure, if it looked to be beneficial to their business in the long-term.

> *'If it was worth it we could put the facilities in,* if there's a guaranteed contract*' (Producer 3, emphasis added)*

Processing issues did not apply to all regional suppliers and processors though, as for some, the ability to process is already integral to their business model. Even so, one participant stated that if they wanted to increase the volume of their output of dairy products, it would be extremely complex, as everything along their supply chain would require changing (such as how they collect the milk or their cold storage capacity).

Another processor revealed that they found it very difficult to find suitably sized processing machinery, sometimes having to seek suppliers outside of the UK for equipment that met their needs. Such issues reveal a plethora of new barriers such as language, transport, and import regulations.

> *'Processing machinery in this country is built for the market, which is big scale things...the machinery is so costly is because it is out of scale to a small producer's requirements [...] We had to go to Germany to find an appropriate machine' (Processor 10)*

In terms of procuring organisations and the equipment and labour available to them, it was much more likely for universities to have sufficient staff and/or processing equipment available to them on site for food preparation. This appeared less likely to be the case for many schools or hospitals.

> *'In the hospital food review they've come forward and they've said that there should be better on site fresh cook facilities. I think that's really important' (Overview anon)*

Such limitations not only affect the direct ability to potentially deal with unprocessed food, but can potentially impact on factors such as accreditation eligibility.

> *'One school couldn't get some accreditation because it's it couldn't peel or wash its own potatoes' (Procurer 5)*

Abattoirs

The number of abattoirs in the UK have declined dramatically over the last fifty years, with a 65% reduction in the number of abattoirs between 1979 and 2000 (Franks and Penden 2021, 2.1). This change has significantly impacted the South West, resulting in animals having to travel considerable distances in order to be slaughtered, as well as fewer opportunities for 'private kill' whereby carcasses and offal can be returned directly to the producer (a service often not provided by larger abattoirs). There also appear to be fewer opportunities for 'organic kill' in the South West, partially resulting from an increase in regulatory and bureaucratic barriers, or issues with capacity and demand. Smaller abattoirs are also able to offer other services such as butchery and packing, which allows many farmers without such capacity to supply their products into local markets more easily as their transport costs remain low.

> *'[Cattle} were slaughtered at [local site] which is [not too far] for us but unfortunately, they stopped the organic killing there and so, our cattle now have to go to Bedford [...] The South West isn't well off for choice.' (Producer 2)*

The increased transport costs arising from fewer local abattoirs can force some suppliers away from local markets into larger retail or wholesale markets, which may result in lower returns for producers.

Labour issues

Labour is a barrier to local procurement in the South West. Applicable to transport, distribution, processing, packing, and administrative tasks, as well as on-farm labour, the inability to access the necessary labour required across the supply chain has become extremely prohibitive.

'We've had a crisis of being able to recruit people… we're about 40 people down at the moment' (Processor 8)

Producers who might grow more vegetables or produce more milk, for example, would, in the contemporary climate, likely struggle to do so. Several participants mentioned issues with housing for farm workers in local areas:

'For the kind of farming which requires more labour input, there needs to be the possibility for […] more permanent accommodation on the land' (Overview 5)

'For the first time ever I've had two members of staff in effect saying they can't afford to survive on the wages I offer them. I know they're not as high as the national average, but they are a reasonably good wage. They're saying they just can't survive with current rents' (Producer 3)

Drivers of labour shortages are multiple, but have been highlighted and exacerbated by recent events.

'Since the pandemic and furlough, Brexit and all the other factors […] we're there with everybody else. I really don't understand it. There seems to be now suddenly more work to do and no people to do it' (Processor 5)

'Since Brexit, since the vote, we started losing staff, and since then we've had to increase the amount of agency labour we use and it's all becoming more challenging' (Producer 6)

Labour shortages play a key role in the decision-making processes of suppliers investing further in their business, the uncertainty dissuading them from buying new equipment, for example, which might facilitate their entry into the public procurement market.

'Investment decisions take much longer and there is ongoing uncertainty over staff' (Overview 6)

Several participants, however, believe that by shortening the supply chain, wages and working conditions will have to improve which might attract domestic labour back into the supply chain.

'There are plenty of people in the West Country who want to work if you look after them well enough' (Processor 2)

'Having shorter hour contracts helps us find staff. If somebody works 25/30 hours you say, can you stay on a bit?, the answer's normally yeah.....our relatively sociable hours in contracts are a major advantage to us too' (Caterer 2)

Labour issues also extended to some public organisations and procurement managers. The lack of procurement staff limited changing procurement strategies in the short term.

'We had just a very small handful of procurement staff at [organisation]. And we have recently lost a couple of those. And haven't been able to replace them because we just couldn't recruit' (Overview 10)

Storage

Food manufacturers in the South West seem held back in terms of the possibilities for storage and regional distribution. There is no largescale distribution centre in the South West that can take multiple food products and then distribute these to supermarkets, on demand. Some food manufactures send products to distributors in the north of

England; these distributors then manage the manufacturer's contract with the supermarkets (e.g. sending goods as and when required). This saves food manufacturers money; rather than sending a single pallet to customers as and when required, manufacturers send a lorry load of goods to the distribution centre and then these get grouped with other products for delivery. In order to see more coordination among food producers and manufacturers in the region a South West distribution centre of this type could be important (depending on the nature of the procurement contracts). It could also make contracts with other procurers throughout the UK more viable.

> *'Storage space might be a might be a good one, actually. We're in different times... pre-COVID, I might have seen a product, and if it was good value, we might have stocked that to the ceiling, tried to buy as much of it as possible. But we really, really don't know what's around the corner, so our stock levels are significantly reduced now'(Procurer 4)*

Transport and distribution

Distribution issues emerged as a key barrier to aspirations to localise procurement. Logistically, it was considered by many to likely be extremely challenging in terms of producer/processor capacity to deliver, both in terms of frequency of deliveries required by different organisations, and the costs associated with distribution. Without the presence of sub-regional aggregation depots or a similar facility, many stated that they could not consider changing their system. This applied to producers, processors and procurers alike.

> *'Everyone requires a different level of service, a different range of products, where you've got to do a lot of deliveries, it's a complex thing to deliver. So, if somebody's going to deliver all that then you really need a specialist who's going to do that' (Processor 5)*

Some limitations related to distribution will be related to other barriers faced by kitchens and procurement sites, such as storage capacity, availability of cold storage facilities and processing limitations. These factors feed into the delivery requirements of each site (many schools, for example, prefer daily deliveries).

> *'The local school can only handle one day's worth of products [...] It's the boring stuff but it's the stuff that makes or breaks contracts. Because if I'm a dairy and I say, well, I can only supply to you on a Monday and they say, well, I can only hold two days' worth of fresh milk for my children, then that's difficult' (Overview 11)*

> *'We don't want to be delivering to schools every day. Ideally, we'd supply them twice a week, maybe, if it was a local school. We supply our shops two or three times a week. We don't want to be delivering every day' (Producer 3)*

Equally, the impact of using multiple vehicles for multiple deliveries from a variety of suppliers must be considered in terms of sustainability. Local supply will not necessarily equate to more environmentally sustainable supply if carbon emissions increase as a result of poor distribution decisions.

'"Availability of wheels" [is] the biggest problem – how do producers get products from A to B cost effectively? Many producers don't operate their own delivery fleet and bulk delivery is always going to be the most cost effective. Currently COVID and Brexit have led to shortages of skilled labour and many businesses facing huge problems here' (Overview 6)

It was suggested by one participant that, overall, the infrastructure in the South West is already in place to some extent, but that it lacks investment.

'We've got a lot of infrastructure in the South West. I don't think we're missing a massive amount of infrastructure. Whether or not we have infrastructure that is sufficiently invested I think is a different question' (Processor 1)

Further examination of investment in current infrastructure would be worthwhile.

4.5.5. Broad market structures

Accreditation requirements

Participants stated that multiple accreditation requirements across different sectors prove cumbersome for SMEs, so many prefer to avoid the process completely, or do not have the capacity to apply.

'A single accreditation system would be useful, I'm sure. But I understand they're quite expensive to get yourself through these kinds of systems. So, you're going to be a large-scale person to do it' (Overview 4)

Equally, procuring organisations can be deterred from dealing with SMEs due to barriers presented by accreditation.

'You might be the greatest fresh salad producer down the road, but if you've not got the accreditations, I can't verify or validate that the vendor assurance is there for your product. I haven't got the capacity to do that for 25, 30, 50 different local suppliers within a 30 mile radius. I have to make sure that I've got traceability and assurance for every single thing (Caterer 3)

It was suggested that changes to the accreditation system or clear guidance to assist with the process of accreditation might benefit smaller producers lacking the time, skills or capital to engage currently.

Food safety and labelling

Concerns around food safety and food safety legislation (e.g. Natasha's Law) were noted as a barrier to food producers in the region supplying public organisations. Food safety legislation creates commercial risks and liability, both for producers and procurers.

'Food safety is a major barrier - not so much for wholefoods, but for other processed foods – every time something new comes into schools we need to provide allergen information for every school' (Procurer 3)

'We're not allowed to handle glass in this [food processing business] [...] The other thing is nuts. We're not allowed anything with nuts here [...] We're not allowed bread and eggs in the [food processing business]' (Processor 5)

Large wholesalers are seen as having the resources to understand the nuances of the legislation and are able to navigate this.

> *'It's easy to [source everything from a large national supplier], particularly at the moment, because we've got things like the Natasha's Law, and the labelling and the allergen information [...] [if we source elsewhere] it means that when we do nail a product down, we've got to make sure we know the ingredients, we know the allergens, and things like that ... I think the unfortunate thing is that people will find that too much of a hassle and they'll just say sod it, I'll get it all from [a large national supplier]' (Procurer 4)*

Regional food businesses often do not have the staffing capacity or expertise 'in-house' to do this (although this needs to be further explored). Opportunities for local producers supplying public organisations could be developed, if ways of supporting producers through food safety legislation could be found. This might be achieved by better signposting of information, by developing 'roadmaps' for digesting that information and providing a point of contact who can help answer questions. Software is also available which can help SMEs navigate barriers arising from food safety and labelling requirements.

Regulations and Standards

Suppliers will also have to adhere to additional standards and procurement criteria, some of which will be legislative, and others according to the preference of specific organisations. It became apparent that some public bodies demand stricter adherence to standards and criteria than others. For example, there may be procurement criteria around how certain foodstuffs are transported, methods of production (e.g. Soil Association assured), proof of origin, plastic-free pledges, Red Tractor Assurances, quality of produce (e.g. proportion of fat in a meat product), size stipulations (e.g. vegetables), locality, ability to meet volume of demands, and/or net zero scoring. Many of these might prove daunting for smaller suppliers. One participant expressed by saying:

> *'A big fear is "do all my carrots have to be five inches long"' (Overview 4)*

Due to different standards and criteria required by public organisation, other markets might be more attractive to suppliers due to fewer stipulations. It was not just producers who were concerned about meeting procurement criteria and regulations; processors and wholesalers also did.

> *'Nobody's got any sympathy for the middleman. Of course not. We're the processor. But we're absolutely being battered by regulation' (Processor 5)*

General uncertainty – agriculture industry

The current and ongoing uncertainty of producers in the UK agricultural industry was a cause for concern for some participants. The Agricultural Transition (which sees the Basic Payment Scheme being phased out between 2021 and 2027), and the associated ambiguity linked to the new Environmental Land Management (ELM) programme, alongside other issues such as international trade deals, and labour shortages, means that fewer farms are likely to feel inclined to invest in technology or facilities which might facilitate a diversion of production and supply into public procurement, or to pursue new markets for their product.

> *'A farmer said to me a couple of weeks ago "I am just really confused. And I don't know what to believe anymore. And I am terrified about the coming changes. And this is just something else to think about and I don't want to go there"' (Overview 10)*

> *'We need government support [for food standards on imports]. I don't think that the sourcing policies require the same level from imported products as they would from UK products' (Processor 1)*

While few procurers referenced this as a worry, general doubt regarding the capacity of local producers to supply might be linked to this uncertainty around the future of farming. One respondent described the current climate as a 'mixed-messages' scenario, whereby farmers feel unclear as to whether the government, and the consumer, want them to produce more food for market (e.g. public procurement), plant more trees, or set aside more land for environmental delivery.

> *'[Tendering is] still quite a formal process and quite a long-term commitment. And I don't know many farmers who are actually in the in the sort of long-term commitment phase of their relationship with their jobs at the moment' (Overview 2)*

> *At the moment farmers feel like we're being pulled in all directions. And we're very proud of what we produce, but we need the markets to function, and we need the policy framework to support us, and we need the people to want to buy our food' (Overview 11)*

Financial barriers

The potential financial barriers of moving towards a more localised food supply chain for procurers and suppliers were highlighted by most interview participants. Such barriers might be directly associated with budget or cost-price, but could also include other organisational or business costs, such as an increase in labour, processing, storage, or distribution requirements, for example.

The most commonly cited financial barrier was the operating budget of public sector organisations. While budgets differ across organisations, catering budgets for the public sector are generally perceived to be low, posing a challenge for attempts to transition to buying more food from within the region. Financial pressures faced by local authorities, and services such as health and education, were recognised as having driven price points down and constraining buying choices.

> *'As far as I can see, there is only one obstacle, there's only one barrier, and it's budget. And if budgets are increased, the procurement will follow' (Processor 9)*

> *'Everyone will advocate better quality, locally produced food that gives back to the economy. But the money isn't there in government. The money isn't there in the public sector' (Processor 9)*

> *'We've got to be economically viable. So, let's not beat around the bush, it's got to be a good commercial deal for the [organisation]' (Procurer 2)*

Some procurers and caterers in particular felt unfairly criticised for not doing enough within their organisations, due to pressures exerted by limited budgets.

> *'Government should have realised prices were going up, and we should have had an increase in line with that. You know it's so easy for people to throw the*

bandwagon at [us] And actually that's unfair, because what we should be saying is clearly the schools aren't getting enough money' (Caterer 4)

One participant stated that following one contract with a large public organisation, the budget per meal was halved, making the contract unviable for them as a small business. While another reported knowing of an educational organisation in the region that effectively built on the budget in order to improve the quality of the food served to end consumers.

'[One organisation I am aware of is] ignoring the budget for the food costs and, as a consequence, food quality has gone up, however, of course, to do that they're having to take money from other parts of the [organisation's] budget to do that' (Procurer 6)

'They only get a certain amount back from the government, but they've topped it up out of their surplus budget' (Procurer 9)

We learnt that some schools sought top-ups to their budget to improve the quality of food from parents, but that this reportedly has been met with some resistance.

Balancing financial drivers against sustainability factors was regarded by many procurers as a challenge to the success of any local buying agenda. As one procurer stated:

'Smaller suppliers usually have a higher price' (Procurer 3)

Concerns about price also acted as a deterrent for regional food businesses who could supply public organisations. Many assumed that supplying their product into the public sector would offer lower margins than those they are already battling in other markets.

'The biggest concern is would they pay the price it costs to grow our vegetables, plus a profit! We need to make a profit' (Producer 3)

'Driving price down does not leak well into local supply chains' (Procurer 8)

One regional supplier with experience of supplying into public organisations locally also complained that their payment terms meant that payment was always received too late to be of value to the business.

Not all respondents viewed lower prices as a barrier to SME's entering public procurement supply, with one suggesting that economies of scale could work for the supplier.

'Everybody knows public procurement is at a lower price than independent retail, for example. But there are plenty of cases where a product has been delivered in at a lower price point, still producing a profit back to the producer. Probably not so much per unit sold, but actually, because the numbers of units are so much greater, it is still worth their while doing it' (Overview 1)

The perceived mismatch between organisational budgets and SME supplier prices was contested by a number of interviewees, with several suggesting that locally-sourced food need not be more expensive than any other.

4.6. What works?

We spoke to several individuals who had experienced supplying or procuring local food into public organisations and who were able to highlight some of the strategies that contribute to the process working efficiently and successfully. Although comparatively few in number, these respondents demonstrated a range of ways by which food from the region was sourced by their organisations, from going direct to certain local suppliers for specific foodstuffs, to using an aggregated format, or by specifying local food supply requirement to national wholesalers with whom they had pre-existing relationships.

Change led by individuals

Participants reported that many initiatives aimed at changing procurement practices have been driven by an individual rather than organisational policy or top-down regulation. Individuals who are passionate about driving forward a sustainable procurement agenda for their organisations are crucial in the movement towards localised food procurement and their knowledge, experience and vision is something to be valued and where possible, harnessed, in order to drive change in the South West region.

> *'I don't know how easy it is for that to start to be rolled out more widely, without there being those dynamic, visionary, passionate people in place in those public sector organisations' (Overview 4)*

> *'They had a group of people there who were determined, dedicated to buy local produce and worked really hard to make it happen against, what I would say was, all the odds' (Processor 5)*

In order to shift the perception that desiring more local food for the end consumer of an organisation is 'going against the grain', one suggested solution was that the sustainable procurement of food should be written into the job description and contract of public sector procurement managers. Until more mandatory national measures are introduced, such a shift will of course be at the discretion of each public sector organisation.

> *'I am charged with ensuring that wherever possible, the food that we procure is a locally sourced product. So, it's ingrained in my role profile and my job description that that's what I do. And every time I set up a conversation… so if, for instance, I get lots of emails from different companies who want to have a conversation about perhaps getting a product onto the menu. And some of the very first things I will say to them is where are you based, where is this product manufactured. Now they find that a bit odd that why am I not asking about the cost, but actually it's kind of a non-starter if they are not where I would like them to be, especially if I know that I can get a product in the South West' (Procurer 1)*

Forward planning

Individuals alone cannot be relied upon to drive changes in the procurement process of their organisation, as any new strategy may become obsolete upon them leaving their role. Organisations with an interest in shortening the supply chain should, therefore, include food produced in the region in their procurement policy. By mandating some level of regional food supply into their procurement process, an organisation can use forward planning to ensure that many of the afore-mentioned barriers are mitigated. This might include designing menus early on in the procurement process in order to ensure that local and seasonal food can be written into the purchasing strategy, and being able to adjust them accordingly.

'Being in-house, we've got the ability to tweak our menus as we go' (Caterer 4)

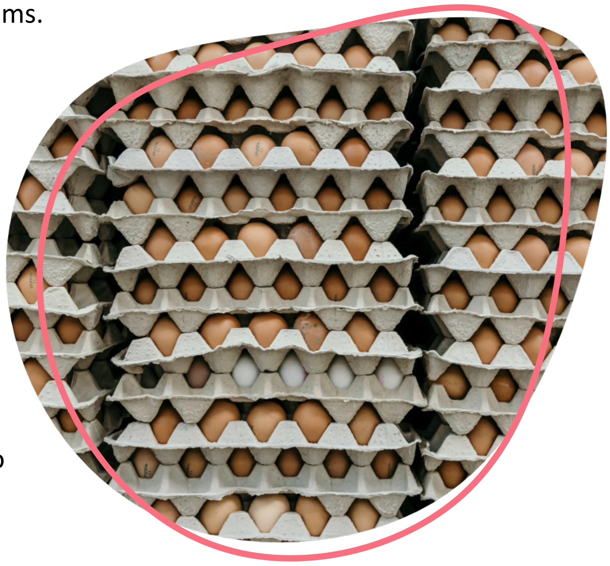
It may also include putting contingency plans in place to protect the supply chain against shocks. For example, one participant stated that a local fish supplier with whom they work would forecast issues with supply due to upcoming poor weather, and would inform the purchaser, offering the solution of a similar fish which could be caught that day, and freezing it until the day of delivery. Such forecasting and communication maintained a stable supply and neither party suffered. Other suppliers also highlighted the importance of forecasting.

'We're forecasting all the time. So, we forecast annually, but every week or so, we'll be making adjustments depending on the new information that we receive [...] We can be quite agile in terms of what we've already got in stock' (Processor 6)

A number of other participants also suggested that a solution to capacity issues and shocks was freezing the product. The ability to implement this will be dependent upon cold storage availability and will not be applicable to all food items.

'It's that ability to chop it, chill it, freeze it. That's what lets us down, really, because a lot of public procurement food, I suspect, is frozen' (Overview 2)

'Frozen food could really help South West producers maintain supply' (Overview 6)



Where cold storage is not currently available to small suppliers or some procuring organisations within the South West, the development of some kind of shared facility would be of benefit to facilitate this solution. A food hub would be well-placed to deliver such infrastructure. For some small, organic producers, being part of a farmer cooperative has also allowed them access to cold storage (Bailey *et al.* 2021).

An intermediary or hub

A commonly cited strategy to resolve issues such as capacity or volume limitations, scalability, logistical issues (such as transportation and distribution) and infrastructural issues was the presence of an intermediary body or management agent to facilitate the consolidation of produce, orders and distribution. Food hubs are often suggested as a means to approach this, particularly due to their potential to involve multiple, smaller producers and suppliers. Although no specific definition of what a food hub should be exists, they are generally recognised for their potential to help with the economic and operational performance of smaller farm businesses and suppliers, as well as driving a sustainability agenda in terms of the environment and the local economy (Manikas *et al.* 2019).

The concept of food hubs has been in existence for some time in the UK, but it is only recently that the South West has actively moved towards developing the idea at a regional level. Smaller iterations of the food hub concept have been operating in various parts of the South West and neighbouring regions with varying levels of success. Other countries have created successful food hub networks, such as the US where, with federal support, over 200 hubs have been created across the country to assist with aggregation and distribution of local food (Yarnit 2021). These hubs have provided favourable outcomes from producers, tending to offer a higher return to farmers than supermarkets. Such hubs require investment; Yarnit (2021) suggests coupling public procurement with a pump priming investment per unit, as well as generating funding from sources such as the Big Lottery, the proposed Shared Prosperity Fund and private and charity sectors. Once in place, such a system can allow for a much smoother local food procurement process.

> *'The way that the previous contract was set up for schools, because we had this managing agent in the middle, they did all that, and the consolidation, both from school orders into them, and then out to suppliers and supplies back and then delivery to schools and once that was set up it was actually really easy'*
> *(Procurer 5)*

A Dynamic Purchasing System (see Box 1 in Section 2) could be used by public organisations to facilitate aggregation of produce among South West producers and processors. This could provide procurers a means to assure buying volumes while making food supply from regional food businesses more viable. It is likely that relevant stakeholders would, however, need training in the use of any new platform.

Relationship building, engagement and support

For those participants where relationships already existed between regional food businesses and public procurement managers, greater local market engagement was repeatedly cited as a factor towards success. This includes engagement between procurers and producers/processors as well as wider engagement activities which incorporate the end consumer. Through a procurement manager and a local processor working together to meet specific demands of the end consumer, one participant described how being able to deliver a specific type and size of meat product for a buyer not only added value to their existing product, but helped in the development of a new product.

> *'We were there to live and learn and experiment […] It gives them value'*
> *(Processor 2)*

Demand for this newly developed product quickly grew beyond simply that of the procuring organisation, thus subsequently benefitting the processor too.

Suppliers should be encouraged to evaluate all available opportunities to increase supply into public sector and, where possible, collaborate with wholesalers who might facilitate this. If processing facilities are not immediately available, other avenues in the locality should be explored.

> *'In many cases in the more regional areas there's more regional wholesalers, rather than the internationals. So, there's probably more scope for working. The advice to anyone is "understand it". Ask the questions and attend the webinars and read the documents before dismissing it' (Overview 3)*

It is imperative that seasonal demands on producers and processors are considered when organising both events and tenders, so as not to exclude them due to clashes with lambing, calving or peak harvesting times, for example.

> *'If you're dealing with food producers, particularly small local ones, give them double the amount of time, because something, with them, will always come up'*
> *(Procurer 5)*

The benefits of engagement activities which connect consumers to the producer/ processor has also led to an increase of overall sales for some, as it acts as another marketing tool, bringing awareness to their product and the importance of knowing the provenance of food items.

Engagement within organisations is also key to dealing with inertia among staff, particularly those designing menus and preparing food.

> *'My [heads] of kitchens are really, really good. They want to provide the best food they can. They've got second in commands at each site and they again, everyone just wants to rally around and get decent food on the counter' (Procurer 9)*

Transitions in procurement should be inclusive of all those who will be affected by it, in order to highlight why it is important, and identify gaps in skills or needs related to using seasonal products, for example.

> *'We have got staff who have been there for a very long time. Upskilling them is a constant challenge' (Procurer 8)*

Cooperation and collaboration are seen as vital to be able to compete with larger wholesalers. And while the emphasis so far has been on the possibilities of aggregation using digital platforms and/or food hubs, it is important not to disempower the suppliers in terms of suggestions moving forward. Several farmer cooperatives exist across the UK, including the South West, where small producers work together to reap the benefits of shared infrastructure, and facilities (such as cold storage) as well as being able to share skills and knowledge. By cooperating, there is also potential for machinery or labour sharing.

> *'If it's not cost effective for them to recruit these kind of people, well then group together, and then it would be cost effective to recruit. So, you're operating at a slightly larger scale' (Overview 1)*

Producer collaboration is on the rise, as the number of farmer groups and clusters increase across the region. Harnessing this shift in producer dynamics would prove of substantial benefit to the local food agenda.

Skills development

The development of skills was reported as being extremely important in any transition towards supplying or procuring local food into the public sector, according to participants with experience of doing so. Such skills development is relevant to procurers, suppliers and catering staff if a programme is to be sustainable. Suppliers in particular were reported as lacking the relevant experience and knowledge, particularly with regards to the tendering process, but that this could be remedied through support and training.

> *'They started out as a being a grower with all of the technical experience and expertise that they needed for that, but they have also now developed the expertise and the knowledge in terms of packing, in terms of supply chain management, distribution… to make sure that they get the whole supply chain properly working. So, it does come back to knowledge, it does come back to experience and expertise to be able to make some of these things happen' (Overview 1)*

> *'Support for smaller growers and producers and suppliers, and for them to have more government, or whatever it may be, support to be able to access accreditations and be given the tools to be able to meet the stringent standards that we, as a public food outlet, whatever you want to call it, have to meet. […]*

> *That kind of world of regulation and legislation may not even exist in their sphere, so I guess it's education, resource, and ability to upskill' (Producer 2)*

On the part of the procuring organisation and staff both working directly in the kitchens as well as in more managerial roles, the development of skills was also seen as having facilitated a more sustainable local food procurement system. Experienced respondents believe that relevant staff across all levels of the organisation need to understand the supply chain system, understand food, have the right skills to be able to communicate and engage with a variety off stakeholders (including catering managers and chefs), and recognise how to create menus using local, seasonal ingredients, among other things.

> *'It means procurement people need to understand the product again and understand the seasons again' (Overview 2)*

This task was not viewed as onerous by everyone, as one procurement manager stated:

> *'We try and do as much seasonal as we can. We love changing things up, because it keeps the kids interested' (Procurer 9)*

4.7. Opportunities for the public procurement of food

4.7.1. Aggregation of supply from South West producers

Facilitate aggregation of products from regional producers

A number of interviewees noted that if someone could organise local producers and bring about greater co-operation between them, some of the challenges relating to scale, meeting demand and food safety could be addressed.

We found examples of suppliers successfully aggregating supply:

> *'We got a group of suppliers together, we made them believe that there was enough there for everybody to benefit from, and we incorporated it as a company and it's now a roaring success' (Overview 3)*

There were suggestions that more producers should work together to minimise overheads:

> *'Can they combine their resources? If there's nine farmers around [Devon town], can they share two cold stores, one either side of the town, and deliver tractor and trailer or Landrover into that. So, they haven't all got to build their own cold stores running 24/7, half empty, they can be running efficiently, centrally. Communication… cooperation (Overview 2)*

Regional producers, processors or suppliers working together could level the playing field with larger wholesalers. The knowledge is there in the South West to join up local producers/ manufactures, but at the moment the level of co-operation and organisation is not. Facilitation will, for many, be crucial due to time and skill limitations among producers.

Develop intermediaries or hubs

The most commonly cited strategy to resolve issues such as capacity limitations, scalability, logistical issues (such as transportation and distribution) was the presence of an intermediary body or management agent to facilitate consolidation of produce, orders and distribution. Hubs could be assigned to one aspect of the supply chain, such as transport and distribution, or organise several stages along the chain.

> *'We need a distribution hub in the South West' (Overview 7)*

> *'I definitely think we need a food hub where producers could take their produce and they wouldn't have to deliver it to individual schools and then the schools and hospitals can go in. They've got one place to put their order in and they've got one delivery of the milk, the meat, the vegetables. Even the processed things. Maybe on that site you could do the processing as well for the schools and hospitals. The whole infrastructure just needs investment to relocalise food. We can do it. There's the will' (Producer 3)*

Dynamic purchasing was suggested by some as a way of aggregating supply from South West suppliers. Such a system is yet to be fully rolled out across the region but it could provide procurers assurance in their buying and volume requirements, while encouraging smaller businesses to supply public organisations.

> *New models have been developed to help open up this market, and to help to fundamentally address the issue of visibility and market access. Any procurement solution can look at new ways in which you can access this market in a way that's feasible for whether you are a small dairy with a little bit of processing capacity, or you're maybe a potato producer that can bag it up in different lots' (Overview 11)*

An initiative like the South West Food Hub could play an important role here, though we note that some of the procurers queried whether it could guarantee supply due to the scale of the producers that might be involved.

One participant suggested that the development of a database detailing the contact details and product specifications of all suppliers in the region might be a useful tool for procuring organisations.

> *'I do think having the database of local suppliers so that they can see who is local, what they can deliver and that sort of thing, is a good option' (Processor 1)*

Dynamic procurement platforms that aggregate produce from multiple smaller suppliers are dependent on funding and are not necessarily the panacea for all barriers facing small producers; as accreditation and policy thresholds could still deter some suppliers from engaging. One participant also suggested that a more diversified logistical solution will be required for a dynamic platform to be successful, but interest is high in such a development and so should be supported. Certainly, an accessible certification process will be necessary to minimise barriers to use.

4.7.2. Improve engagement between public organisations and regional food businesses

Improve regional market engagement

Participants viewed the way public organisations engage with potential suppliers as playing an important role in shortening the supply chain the South West. As one participant put it:

> *'Collaboration is so key… so if I was the local contracting authority, and if I want to start a new strategy, I'd want to get the distributors involved and the producers involved, and everyone involved because you need to make sure that your market is ready for local producers and local procurement' (Overview 11)*

One procurer described how they work with potential suppliers and take feedback on their plans for food procurement.

> *'We try and make it a two-way process in that we say, "this is what we want, we need to feed these people, it's this number, this is the route we're thinking we're going down, the procurement route, talk to us about how it might work for you better"' (Procurer 5)*

Participants acknowledged that improving relationships between public organisations and potential suppliers would take time to develop, given the way food procurement currently works.

> *'If you're talking from a supplier's angle at the bottom these relationships in the food industry take years. They really do take years to develop, and so this is not a quick fix. Everybody talks about public sector procurement as if it's a tap that you can just very quickly turn, and turn that market on overnight. That's not the way it works' (Overview 1)*

> *'If you want to get supply, you've got to do it now. You've got to plan for 2023, start talking to him now, and then you need to commit to take his product' (Overview 4)*

> *'Some [farmers] definitely just don't know that this stuff is going on at all [...] How do we move it from sort of academic, social enterprise circles [...] but also bring in far more farmers' (Overview 10)*

One participant raised the risk of putting too much burden on producers, stating that careful engagement with smaller food businesses is needed.

> *'You just need to work with the suppliers to make sure there's a good amount of lead time. You need to make sure of the expectations. You've got to manage it and work with your producers, not putting too much burden on [them] that they step away' (Overview 11)*

There is an opportunity for public organisation to improve engagement with regional suppliers and improve relationships, but participants emphasised that this would take time and that through this process of working with potential suppliers, public organisations needed to consider what is being asked of producers. Language and format of engagement was also described as key.

Improved regional market engagement supplier events, such as marketing sessions, potential supplier engagement workshops, 'meet the buyer days' or supplier development training can all help inform participants of opportunities they may not be aware of, or provide assistance with administrative aspects of the tendering process.

> *'Just before we advertised the tender we got them [potential suppliers] all back together again in a room and actually went through the paperwork, step by step, saying "we're not giving you the answers on this one, but this is the sort of thing we're looking for"' (Procurer 5)*

Producers also acknowledged that greater engagement and communication was key in establishing new relationships and market strategies.

> *'Realistically, it is opening up the lines of communication and so, it might be setting up a meeting with whoever supplies the procurement managers from the*

hospitals and the schools and things like that and allowing them to meet up with the producers direct' (Producer 2)

Streamline procurement processes to support regional suppliers

Participants queried whether procurement processes could be simplified to support bidding from smaller and regional suppliers.

'Can we slim it [tendering] down? Can we make it easier, so we can't coach them in writing because that's not right, but can we make the process slicker, easier for them? Are we using the right language or are we using very technical language?' (Procurer 8)

Time considerations were also taken into account by one procurement manager in terms of the tender process itself. They suggested that a two-stage tender process would allow bids to be scored on a set of primary criteria, such as quality and capacity to supply, with only the second stage round in the form of 'mini competitions', scoring price.

'It gets people on board and also if they fail that bit to begin with, once they remedied what they failed, they can apply again and get that on way, without going "oh gosh, we've got to do our pricing again"' (Procurer 5)

Regional suppliers who may be deterred as a result of any of the barriers previously outlined are likely to find engaging in a shortened supply chain process more appealing if sufficient guidance and support were to be provided. This should encourage the facilitation of engagement activities between stakeholders in order to determine a process that works for all parties. Transparency, visibility and accessibility are key.

'We'll just do some guidance notes to ask the people that are going to pitch for that contract, what their philosophy is, or what their approach is to these certain things [...] to make clear what their objectives are in terms of shortening supply chains, and then being more open about how producers can get involved' (Overview 3)

Support for regional suppliers may also take the form of adapting the tendering process to make it more understandable and easier to complete, to level the playing field with larger suppliers. This might take the form of breaking down the tender into smaller lots. Marketing advice and skills training would also prove beneficial.

'They're working with a company [...] who had managed to break contracts down. So in theory, you could just do the milk for your local school and the local hospital' (Overview 2)

'I think more product will go through this market [public procurement] if, for example, there were more open tendering processes, if the tendering process was broken down into smaller lots' (Overview 11)

'There's no reason why the small guys can't do it if they pull together and recruit the same level of skills and expertise and knowledge [as larger organisations]' (Overview 1)

4.7.3. Encouraging investment in existing supply chain infrastructure

Producers willing to invest if they have reliable demand

Producers demonstrated a willingness to participate in public procurement and would likely invest in equipment or resources that would facilitate a greater-level of on-farm production, processing and packaging if a consistent and reliable demand could be guaranteed.

> *'The public sector can come in with a base load of demand that is, you know, a prison, a hospital, it's every day of the year, 365 days of the year, and that can give them [producers] the confidence to invest, to make that next leap' (Overview 7)*

> *'If you're in a long term agreement, or if you're working directly with a contracting authority you've got more confidence to invest, to innovate, to grow' (Overview 11)*

One producer stated that they had land that is currently out of production due to lack of demand that could easily be used to grow more vegetables. The same individual also stated that a significant amount of produce is wasted due to imperfections (e.g. 'ugly' veg) which, if it were processed on-site, would mean less waste and greater output.

Several processors also said that they were producing under capacity and, should the demand arise, would be willing to increase production. They highlighted that short contract terms presented a risk though, especially in the dairy and meat sectors.

> *'Because of the way the milk contracts on farm are currently set up, it might take us 18 months to actually be able to secure the milk that we need to increase production. So, to then only have a three year contract and then not have it at the other end is potentially quite challenging' (Processor 1)*

4.7.4. Clearer national food procurement policies

Our research suggests that more guidance is required for procurement staff regarding tendering legislation, buying standards, and the tools in place to assist with greener procurement.

> *'Government must be clearer with contracting authorities on what good food purchasing looks like. I think at the moment they're left to themselves and they don't have any legally binding mandatory standards for most sectors. So we have the government buying standards for food and catering [services], the GBSF, [but] there is no monitoring or auditing within that piece. It's not mandatory across different public sector[s]. I think government have to be much clearer on what they want the supply chains to do. Because at the end of the day, these are individuals that are trying to feed as many people as they can with as much good food as they can, at very low cost' (Overview 11)*

4.7.5. Develop a greater level of public buy-in

The power of the public and the end consumer emerged as being particularly important in driving in any new initiatives forward. Some participants suggested that shocks such as the COVID-19 pandemic and Brexit have created a heightened awareness among the public of food security in the region which should be harnessed to develop a greater level of public buy-in for localising the food system.

> *'The scales are starting to fall from people's eyes. So, I think they are going to start going, why the hell can't I buy it from the farmer down the road? When it snowed here three winters ago, the local dairy kept going supplying bottled milk to [two local towns], but the national chain couldn't fill the [local supermarket] up for 10 days. People notice these things, suddenly. Actually, we're quite vulnerable, and yet we live in a farming area' (Overview 2)*

> *'How are we going to leave behind a better world than we inherited in terms of sustainability [...] People are going to have no choice but to be more aligned with that. And I hope that, actually, many people will actually adopt it as being something they want to do, not just that they're being told to do it' (Overview 3)*

> *'I think there is increasing public interest and pressure on knowing where we get our food from and yes, asking for accountability on how taxpayer money is being spent. Is that being spent to support local business and good healthy soils or not? And I think kind of how we harness that public interest and increasing understanding of these issues will be really important. How do we work with that tide of public engagement?' (Overview 10)*

Regarding end consumers, greater buy-in can be achieved through increased engagement efforts. It was reported that end consumers enjoyed engaging with local suppliers and engagement activities are viewed as useful strategies to build farm-to-fork relationships and understandings. Information is considered key as so many end consumers or related stakeholders, such as parents, are perceived as poorly informed.

> *'With the greatest respect to these parents, they're fairly ill-informed in as much as they're just saying "we want it better" without considering how to make it better' (Procurer 6)*

Attitude-behaviour gaps, where an individual might hold a value but not behave in accordance with it, are still likely to exist, particularly among end users who might be economically disadvantaged, such as students. However, further research into end consumer attitudes would be beneficial within organisations.

> *'[Interviewer: Do you think the people who are actually eating the food care [if it is local], do you think there's a demand for it from the elderly people who are eating it?] The elderly might. I don't think they have ever been asked' (Procurer 5)*

> *'The missing link that didn't happen very well in schools [...] was we didn't target the parents saying this is the most the most amazing stuff that's coming into a school, did you know what your children are eating?' (Procurer 5)*

Re-connecting consumers with food and food production was regarded as an important outcome of, and driver towards, a more localised food system by many interview participants.

Greater flexibility and agility

Participants suggested that greater autonomy for procurement staff would enable greater sourcing of food from the region:

'If people were empowered to make those decisions in the public sector and were given free hand to go and buy from wherever they want to buy, then that would be transformational [...] Just take the shackles off people' (Overview 4).

Greater flexibility is also required among catering staff and chefs, in the development of menus which can encompass the use of more local and seasonal produce. This might be facilitated by engagement activities, training, farm visits, or changes in organisational policy, as well as demand from end consumers.

Bringing procurement decisions and catering in-house and developing a system that is not reliant upon tenders is also reported to allow for a more flexible food-purchasing strategy.

'They're just on a month to month basis. They don't set up any particular contracts with them, they just set up a trading account and then off to go' (Procurer 6)

Another participant flagged the need to be prepared to adapt to the changing needs of the end consumer of the food provided by public organisations.

'There's absolutely no reason to have something on the menu, no matter how good it is and how local is, if the children put it all in the bin' (Procurer 1)

Sustainability and price

The development of clear, strategic sustainability agendas within organisations appears to be a slowly emerging phenomena, but one which is well-regarded by procuring individuals with an interest in supplying local food into their organisations. It was reported that, due to significant pressures such as time and budget, it is easy for sustainability agendas to rapidly move down the list of priorities. One procurer report challenges prioritising sustainability when the pressure on price was so strong.

The term 'sustainability' was regarded as ambiguous in relation to procurement.

'What does that word sustainable mean for us here? Like are we saying sustainable in terms of economic considerations only? [...] It was kind of clear that actually the people in certainly my [organisation] making these decisions weren't sure how to assess good social value, good soil health, good support for farmers' (Overview 10)

'Sustainability isn't just all about climate change, climate change is obviously really, really important, but it's also looking at economic sustainability and communities and the SDGs [Sustainable Development Goals], and all those sorts of things. It's supporting local businesses as well, rather than just saying sorry it's financial, we're getting it nationally' (Procurer 4)

There is an opportunity to examine the multiple ways food procurement intersects with sustainability and sustainability agendas. Procurers were supportive of sustainability as a concept but implementing change will require a more nuanced approach that recognises the ways procurement can contribute while acknowledging the role price plays in procurement decisions.

5. Conclusion

That just seven organisations spend an estimated £17.3m annually on food procurement demonstrates the potential market for public sector food procurement in the South West. As producers face ever more uncertainty and unpredictability of the market, the public sector represents a source of demand which is consistent, stable and predictable. Relocalising food supply in an efficient and collaborative way will not only provide schools, prisons, hospitals and other public sector bodies with more secure and reliable food supplies, but it will also create conditions where many local producers, processors and manufacturers will flourish under this guaranteed demand for their produce and products. At the same time, a greater degree of local supply into public sector food procurement has been seen to offer benefits in terms of environmental health and sustainability, as well as human health. Our research shows a growing interest among stakeholders regarding the opportunities and benefits of shortened supply chains, but instigating change is still seen as challenging by many.

Although many public sector entities have demonstrated plans to move towards more sustainable food procurement processes in the future, more work is required to advance the concept. This will only be achieved through greater levels of engagement, improved networks and a cooperative approach from producers, public procurement and operational staff, and organisations such as the South West Food Hub. Enhancing and communicating demand from consumers and related stakeholders themselves (such as parents) is also vitally important. At the same time, it is important to acknowledge the limitations to relocalising food procurement deriving from the availability and seasonality of certain food types in any given area. A goal of 'local and sustainable' food should be sought alongside one of 'global and fair' food, to ensure that end consumers have an interesting and nutrient dense diet, as well as supporting commodity producers elsewhere.

A successful, localised food supply chain in the South West is likely to be multidimensional, combining a dynamic food purchasing system with direct producer-customer and producer-national wholesaler relationships. Indeed, although there will be need for capital investment (see Section 6), many of the steps towards a more rationalised public sector food procurement system require change in working practices and culture. Individuals (and organisations) who can 'champion' a more revitalised approach will be key.

Many of our recommendations (see Section 6) stemming from this research concern improved transparency and a more collaborative approach. We would like to note that although we experienced excellent engagement in the research by many individuals and organisations, it was also often hard to identify who to engage with and to access relevant information from publicly funded bodies. If the research team and our funding partners (with all the networks and resources available to us) found this difficult, then no wonder many smaller, regionally based business face considerable barriers and challenges in engaging with public sector food procurement. These barriers are far from insurmountable given sufficient will and drive by key individuals and organisations in the south west’s public sector food procurement system.

Ultimately, streamlining the procurement process between South West suppliers and the public sector will require a wide range of barriers to be addressed. There are processing opportunities available at a micro level and there is the potential for a cultural shift across the supply chain at the macro level. Change can only begin with the encouragement of dialogue between all stakeholders involved. Further engagement between public bodies and regional food businesses is essential. By harnessing existing experience, knowledge, passion and possibility the South West can move towards a successful procurement supply chain from which all stakeholders, including the end consumers, can benefit.

6. Recommendations

Each broad recommendation has two themes in which we have suggested a range of specific actions. Each specific recommendation has a priority rank;
1 = Urgent, short term action, and 2 = Medium term action.

Recommendation	Aim	Action	Priority
Drive culture change, within and between, public organisations in the South West	Build accountability	Develop a South West Food Procurement Declaration. This regional mission statement should have input from a range of public organisations.	1
		Secure buy-in from CEO and senior decision makers and ensure change in procurement forms part of organisational Key Performance Indicators, and implement local food procurement action plans on the basis of a South West Food Procurement Declaration (S).	1
		Include sourcing local food in procurement officer job descriptions.	1
		Public organisations should publicly report spend on food and the proportion produced/sourced from the region and its hinterland, on an annual basis, to ensure accurate monitoring and evaluation.	2
	Foster regional insight and share knowledge	Create a network for procurement officers from public organisations in the South West to share knowledge about procuring from, and engaging with, regional food businesses.	1
		Design knowledge extension/training that drives public sector demand for regional and seasonal food from relevant public sector stakeholders (e.g. catering staff and managers, chefs, procurement managers).	2
		Streamline data sharing. Data should be more easily accessible. Research ethics processes for low-risk research could be streamlined; the resources required to engage with several public organisations in the region place limitations on research.	2

Recommendation	Aim	Action	Priority
Make public procurement more accessible to regional producers and suppliers in the South West	Streamline tendering processes and build transparency through engagement with regional producers and suppliers	Use pre-market engagement to improve the quality of tenders. Public organisations should engage with regional producers and suppliers to explain how tenders will be evaluated and allow potential suppliers to shape tender.	1
		Consult regional producers and suppliers about alternative public procurement processes; examine concrete options, such as a two-stage tender process with the first being scored on capacity and quality etc, and the second round (or mini competitions) being scored on price.	1
		Develop a single accreditation system for all organisations across the public sector (avoiding new accreditations being required for each type of organisation).	2
	Make tenders more accessible to regional producers and suppliers	Reassess procurement criteria so as not to exclude regional producers. For instance, more could be done to accommodate the payment and delivery terms of regional producers.	2
		Reassess the design of procurement competitions. Consider where competitions could be limited to regional food businesses using PPN 11/20 to reserve below threshold procurement by geographical location and/or business type. Examine where contracts could be split into smaller lots to encourage regional food businesses to tender.	2
		Assist producers and suppliers in gaining relevant certifications and accreditation, such as Safe and Local Supplier Approval (SALSA).	2

Recommendation	Aim	Action	Priority
Support farmer focussed supply chains in the South West	Enable the aggregation of food products from producers and suppliers in the South West and support its supply into public organisations	Invest in the facilitation needed to aggregate food from multiple regional producers, such as farmer cooperative initiatives.	1
		Increase regional capacity for food processing, distribution and freezing by exploring investment in South West 'processing units' or 'distribution centres', or by building on existing supply chain infrastructure.	1
		Test options for the procurement of food produced in the region through a trial of a Dynamic Procurement System, for example through Food Hubs.	1
	Commit to sourcing healthy, sustainable food from the South West	Commit to making a proportion of regional food supply mandatory in public organisations in the South West.	1
		Commit to use of DEFRA's balanced scorecard; giving sustainability, health and quality and socio-economic impact more weighting, and to schemes that encourage sourcing fresh, sustainable and healthy food, such as the Soil Association's Food for Life Awards. Align with local initiatives, national campaigns and partnerships, such as Sustainable Food Places encouraging equitable supply chains.	1

Recommendation	Aim	Action	Priority
Continue to develop the South West as a test bed for national change, share findings with government and other regions, and lobby government for changes to procurement processes	Develop better understandings of the impact of food procurement on the region	Agree metrics for measuring the impact of public food procurement in the South West.	1
		Monitor and evaluate the impacts of food procurement from the region on its economy (for instance by measuring local multiplier effects) and on health and diet.	2
	Lobby for clarification and implementation of relevant legislation of food policies	Call for re-evaluation and simplification of Defra's Balanced Scorecard; it should be easier for procurers to use.	1
		Call for increased clarity around government buying standards and legislation. Government needs to clarify what criteria can be specified for procurement of local food in public sector tenders and ensure this is known throughout the supply chain.	1
		Call for more clarity for the farming sector generally regarding Defra's Environmental Land Management programme to ensure that a) a greater resilience of local farms in the South West and b) production capacity can be increased should the public procurement market become more accessible to local suppliers.	1
		Ensure sustainability agendas in new food policies move beyond simply focussing on environmental issues, and include social value, health, and economic growth. Food procurement should be part of sustainability action plans within and beyond the region.	2

7. References

Bailey, A. R., Fu, J., Dong, H., & Martins, T. S. (2021) Sustaining supply chain relationships for co-operative success: The case of South Devon Organic Producers Co-operative (UK). *International Food and agribusiness management review*, 24(1), 162-178.

Bite Back 2030 (2020) *Student Voices on the school food standards*. Spill the beans campaign report. Accessed online 10.01.2022. https://biteback2030.com/spill-the-beans#download

Bua, A., Taylor, M. & Gonzalez, S. (2013) *Measuring the value of traditional retail markets: Towards a holistic approach*. New Economics Foundation.

Devon County Council (2021) *Written evidence submitted by Devon County Council (PRO0024).* Accessed online 14.01.2021: https://committees.parliament.uk/writtenevidence/10274/pdf/

Crane, R. Douthwaite, S. and Organ, E. (2020) Farm Business Survey 2019/2020: Poultry Production in England. Rural Business Research. Accessed online 10.01.2022. www.ruralbusinessresearch.co.uk/publications/

Cabinet Office (2020) *Procurement Policy Not – Reserve Below Threshold Procurements.* Action Note PPN 11/20. Accessed online: 10 January 2022. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020223/20210923-PPN-11_20-Reserving-Below-Threshold-Procurements.docx.pdf

EFRA (2021) *Public Sector Procurement of Food Sixth Report of Session 2019-20*. Accessed online 14.01.2021. Public Sector Procurement of Food

DEFRA (2019) *Structure of the agricultural industry in England and the UK at June: regional and county/unitary authority (2018-2019)*. Accessed online: 01.12.2021. https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june

DEFRA (2014a) *A Plan for Public Procurement: Enabling a healthy future for people, farmers and food producers*. Accessed online 14.01.2021: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332756/food-plan-july-2014.pdf

DEFRA (2014b) *A Plan for Public Procurement*: *Food & Catering Balanced Scorecard for public food procurement*. Accessed online 14.01.2022. Balanced Scorecard for Public Food Procurement.

DEFRA (2021a) *UK Food Security Report 2021*. Accessed online 14.01.2021: United_Kingdom_Food_Security_Report_2021_16dec2021b.pdf (publishing.service.gov.uk)

DEFRA (2021b) *Total Income from Farming for the Regions of England, first estimates for 2020.* Accessed online: 14.01.2021: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fassets.publishing.service.gov.uk%2Fgovernment%2Fuploads%2Fsystem%2Fuploads%2Fattachment_data%2Ffile%2F1053876%2Fagriaccounts_tiffregstatsnotice-17nov21.odt&wdOrigin=BROWSELINK

DEFRA (2021c) *Livestock prices, finished and store*. Accessed online 10.01.2022. https://www.gov.uk/government/statistical-data-sets/livestock-prices-finished-and-store

DEFRA (2022a) Quarterly UK statistics about eggs - statistics notice (data to December 2021). Accessed online 10.01.2022. https://www.gov.uk/government/statistics/egg-statistics/quarterly-uk-statistics-about-eggs-statistics-notice-data-to-june-2021

DEFRA (2022b) *Latest UK milk prices and composition of milk*. Accessed online 10.01.2022. https://www.gov.uk/government/statistics/uk-milk-prices-and-composition-of-milk

DPUK (2021) *Dynamic Food Procurement*. Accessed online 14.01.2022. https://www.thesouthwestfoodhub.co.uk/the-opportunity/future-food-framework/

Duffy, R. & Pringle, A. (2013) *Buying Local: Tools for Forward-Thinking Institutions*. Columbia Institute, LOCO BC, and ISIS Research Centre at the Sauder School of Business.

Dynamic Food Procurement National Advisory Board (DFPNAB) (2021) C*ase Study for the Provision of Food in Bath and North East Somerse*t. Accessed online 14.01.2021. https://www.dynamicfood.org/_files/ugd/6b24d7_55630340ed8140b0b118a2cc04d8b68d.pdf

Dynamic Food Procurement National Advisory Board (DFPNAB) (undated) *Principles of Dynamic Food Procurement*. Accessed online: 15 January 2022. https://www.dynamicfood.org/_files/ugd/88ba3c_1683b14981d64eb8999522e7a7c85b89.pdf

Farm Business Survey (2021a) *Data builder.* Accessed online: 01 December 2021. FBS data builder (farmbusinesssurvey.co.uk)

Farm Business Survey (2021b) *Benchmarking and projections*. Accessed online: 01.01.2021. FBS Farm Business Benchmarking (farmbusinesssurvey.co.uk)

Food Standards Agency (2022) *Approved Food Establishments*. Accessed online: 15.02.2022. https://data.food.gov.uk/catalog/datasets/1e61736a-2a1a-4c6a-b8b1-e45912ebc8e3

Franks, J.R and Penden, R. (2021) *An economic analysis of the role and viability of small abattoirs in the red meat supply chain*. Accessed online 10 January 2022. https://www.princescountrysidefund.org.uk/wp-content/uploads/2021/08/AN-ECONOMIC-ANALYSIS-OF-THE-ROLE-AND-VIABILITY-OF-SMALL-ABATTOIRS-IN-THE-RED-MEAT-SUPPLY-CHAIN.pdf

Glaser, B. G. & Strauss, A. L. (1967) *The Discovery of Grounded Theory: Strategies for qualitative Research.* Chicago: Aldine Publishing Co.

Goodwin-Hawkins, B. (2020) *How local is local? Rethinking local food and the public plate in Monmouthshire, Wales.* Aberystwyth University & Wales Institute of Social and Economic Research and Data (WISERD).

Manikas, 1., Malindretos, G. & Moschuris, S. (2019) A community-based Agro-Food Hub model for sustainable farming, *Sustainability*, 11(4), 1017.

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

Morley, A. (2021) Procuring for change: An exploration of the innovation potential of sustainable food procurement. *Journal of Cleaner Production*, 279, 123410.

National Food Strategy (2021) *An Independent Review – The Plan.* Accessed online 14.01.2021. https://www.nationalfoodstrategy.org/the-report/

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. *Environ. Dev. Sustain*. 20 (5), 1905-1933.

Preuss, L. (2009) Addressing sustainable development through public procurement: the case of local government. *Supply Chain Management*, 14 (3) (2009), 213-223.

Rural Business School (2020) South West England Benchmarking Handbook 2020: 2018/19 financial year. Accessed online: 10.01.2022. https://www.ruralbusinessschool.org.uk/wp-content/uploads/2020/12/FBS-Digest-2018-19.pdf

Russell, C. & Cottingham, M. (2007) *A fresh approach to hospital food The Cornwall Food Programme, pioneering tasty, healthier and environmentally friendly hospital meals*. The Soil Association.

The South West Food Hub (2021) *South West Food Hub.* Accessed online 14.01.2021: SWFHOverview.pdf (thesouthwestfoodhub.co.uk)

Walton, S and Hildreth, D. (2020) *Farm Business Survey 2019/20: Pig Production in England. Rural Business Research*. Accessed online 10 January 2022. www.ruralbusinessresearch.co.uk/publications/

Willett, W., Rockstrom, 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. *Lancet 393* (10170), 447-492.

Yarnit, M. (2021) *Boosting local food and drink through hubs and networks*. The Churchill Fellowship.

Appendix 1: Research Ethics I

There are three main reasons for significant time input into these external ethics applications.

The first is the length of the applications and the administrative burden of document preparation. The HRA application contained 65 questions, the HMPPS application 46 questions, the MOD's 20 multi-part questions. In addition, we completed a 30-page research protocol for the HRA. Although material was re-used where appropriate, the phrasing of questions often differed and bespoke answers were usually required. Templates for standard documents, such as information and consent forms differed between organisations. An array of supporting documents were also required. For example, we submitted 23 supporting documents to the Health Research Authority. In addition to preparing the content or obtaining the relevant materials, each document must all be individually labelled according to a file convention, and then manually described on the online platform. The combination of the amount of the material required and the administrative details was painstaking. We appreciate that due to the volume of applications, a standard system is necessary. However, when one wishes to interview approximately 2 people per public organisation, the amount of time spent on research ethics per interview borders on prohibitive.

Second, research ethics platforms and the associated applications, are, quite understandably, set up to allow evaluation of the high risk and sensitive research, such as the trial of a new drug with several thousand patients, or interviewing military staff about decisions made during conflict. We often had the feeling that systems were not really designed for smaller, lower risk projects like ours. We were not seeking to engage with patients, inmates or military personnel in combat roles, but rather interview professional and catering staff in public organisations.

Third, the application process is so complex that it is necessary to obtain guidance from University services, from HRA/ HMPPS/ MOD ethics contacts, and from guidance documentation available online. We are extremely grateful for the support we received, and the submission process could not have been navigated without that help. As a first-time applicant, the learning curve is steep. Applicants must understand the stages of preparing an application, the presentation of information within the application, the process of submitting an application, and how to respond to a review of an application. There are numerous stages (see Appendix 2 for indicative list of tasks) where support is required to decode what the next step in the process is. This has a time implication. A visual roadmap of stages and factors to consider when embarking would be useful.

We recognise the value and importance of research ethics processes and this strengthened the research design. We acknowledge that the 22 days we spent does include tasks we would have completed as part of the research design, for instance design of interview questions. However, the review timelines of external research ethics processes mean that one must design the questions at a very early stage of the project. While completion of tasks 'up front' has some advantages, it can cause replication, for instance writing an invitation to participate in the research (required as part of ethics applications), which one needs to use later in the project, but which then needs rephrasing by the time one comes to invite participants to take part.

Appendix 2: Research Ethics II

Indicative list of tasks in research ethics application using HRA application as an example

- Initial meet with University Research Governance Team
- Registering on ethics portal (Integrated Research Application System)
- Draft of research protocol including information and consent forms (c.8000 words) Draft of answers to online questions (65 questions – HRA, 46 question HMPPS)
- Internal review 1 of Research Protocol
- Internal review 1 of answers to online questions
- Modification/ development of research protocol
- Modification/ development of answers to online questions
- Internal review 2 of Research Protocol
- Internal review 2 of answers to online questions
- Minor amendments
- Drafting and collating 23 supporting documents (e.g. lay summary of research, non-technical outline, CVs, insurance information, cover letter)
- Labelling files according to file convention and uploading
- Labelling files on the online system and adding descriptive details
- Securing a Lead (NHS) Site for the application – emails to identify and agree
- Submission processes; authorisations, verify application, book application for submission, electronic submission
- Email correspondence with HRA reviewer
- Minor amendments
- Receive approval
- Find Research and Development contacts of NHS Research Sites
- Contact NHS sites/ Trusts to apply for Capability and Capacity approval
- Email correspondence and reminders
- In some cases, submission of a further form
- Approval
- Seek to recruit interviewees – email correspondence with potential participants

Appendix 3: Livestock models

Livestock models: Beef and Sheep

The DEFRA June Census (DEFRA 2019) provides accurate cattle and sheep figures as it uses the British Cattle Movement Service and the Annual December Sheep Survey. However, it is problematic to give an exact figure for the annual South West output of meat from these figures. This is due to the possibility of movement of animals in and out of region; the need for breeding replacements; the use of sexed semen in the dairy industry; the fact that cattle from beef and dairy herds are recorded as one.

To reach an estimate of annual output, we have therefore developed and used the following models, using broad brush but informed parameters.

Beef cows

Number of beef cows (June Census 2019)	181,527
Assumed calving index	0.8
Annual births	145,222
Births less 5% losses	137,961
Calves less 14% replacements	118,646
Beef fat cattle output if average 2 years	59,323
Dairy fat cattle output if average 2 years	N/A
Average deadweight per animal (kg)	346
Total output (kg)	20,505,003
Total output (tonnes)	20,505

Dairy cows

Number of dairy cows (June Census 2019)	428,220
Assumed calving index	0.85
Annual births	363,987
Births less 5% losses	345,788
Calves less 10% dairy bulls	311,209
Calves less 25% replacements	233,407
Dairy fat cattle output if average 2 years	116,703
Average deadweight per animal (kg)	346
Total output (kg)	40,338,507
Total output (tonnes)	40,339

Total output beef

Total output from beef cows (tonnes)	20,505
Total output from dairy cows (tonnes)	40,339
Total output beef (tonnes)	60,844

Mutton

Number of ewes (June Census 2019)	1,556,624
If 17% replacement	264,626.08
Deadweight (kg per animal)	26.84
Deadweight total (kg)	7,102,563.987
Total output (tonnes)	7103

Lamb

Number of ewes (June Census 2019)	1,556,624
If 1.32 lambing percentage	2,054,744
Less 17% replacements	1,705,437
Deadweight (kg per animal)	19.96
Deadweight total (kg)	34,040,528
Total output (tonnes)	34,041

Image credits

Front cover: Önder Örtel (Unsplash)
p3: Yu Hosoi (Unsplash)
p8: Hans (Pixabay)
p12: Veronica White
p13: Veronica White
p15: Jonathan Borba (Unsplash)
p16: Veronica White
p17: Uriel Mont (Pexels)
p20: Polina Kovaleva (Pexels)
p22: David Vazquez (Unsplash)
p25: Tomasz Filipek (Unsplash)
p28: Max Delsid (Unsplash)
p30: Daniel Dan (Pexels)
p34: CRPR library
p37: Maria Lindsey (Pexels)
p40: Maria Orlova (Unsplash)
p44: Veronica White
p48: Blair Fraser (Unsplash)
p50: Veronica White
p52: Alexas Fotos (Pexels)
p54: Marjan Blan (Unsplash)
p60: Michael Burrows (Pexels)
p63: Peter Wendt (Unsplash)
p64: Louis Hansel (Unsplash)
p65: Zoe Schaeffer (Unsplash)
Back cover: Irene Kredenets (Unsplash)

CIOS LEP CORNWALL & ISLES OF SCILLY LOCAL ENTERPRISE PARTNERSHIP

Devon County Council

heart of the south west local enterprise partnership

NFU

SOMERSET County Council

UNIVERSITY OF EXETER