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Reframing the Debate on Sustainable Food Policy: Applying a Business Networks Perspective

Introduction

In this paper we begin to ask the question: what would UK food policy look like if food supply chains were conceptualised as industrial networks using an IMP (Industrial Marketing & Purchasing) framework, rather than as conventional markets using a neo-classical economics framework? As we will see, there are good prima facie grounds for considering that food supply chains in developed countries are more akin to managed industrial networks than neo-classical competitive markets. Nevertheless, there is a great deal of work to be done before this relatively new theoretical paradigm can be put to work in a policy context, and we can only do a little of that work in this paper. Inspired by Håkansson's (2006) efforts to extract policy insights from IMP theory, here we seek to apply an IMP conceptual framework to the empirical realities of the UK vegetable supply chain. Although at this stage we are not able to articulate solutions to complex food policy issues, we aim to demonstrate the shortcomings of solutions based on neo-classical economics and identify some lessons for food policy. UK food policy will need re-structuring as a result of the decision to leave the EU so it is important to stimulate new thinking on the role of the vegetables sector in British farming. We proceed by first providing a background to the UK food policy debate and, second, identifying key concepts from the IMP literature that are relevant to our theme. We then briefly describe our research methods, and subsequently present our findings and conclusions in respect of the application of an IMP-inspired theoretical framework to the realities of UK fresh vegetable supply.

UK food policy for the fresh vegetables sector

In the wake of various crises in British farming the *Policy Commission on the Future of Farming and Food* was set up in 2001. Its report (the Curry Report), marked a watershed in food policy because for the first time government engaged with sustainability and (re)turned to the market for solutions to the problems in British farming (Curry, 2002). The fundamental ideas remain the basis of agricultural policy in Britain today. The report, based on the three pillar model of sustainability (people, planet and profit) encouraged farmers to adopt more sustainable methods of production, and look to the market to address the challenges that confront the sector. An increase in production and consumption of fruit and vegetables has long been a policy goal but efforts to increase vegetable consumption have not been particularly successful, and the long term trend for home production as a percentage of total vegetable supply continues to decline (Defra, 2014).

Some farmers turned to alternative food networks (AFNs) to become more competitive and more environmentally benign. AFNs have been successful in highlighting the deficiencies of mainstream food supply networks, for example, by encouraging more active participation by consumers in food networks, and by addressing food-related anxiety (Kneafsey et al., 2008). Nevertheless there have been criticisms of AFNs (Defra, 2014). Although AFNs serve to highlight concerns about the unsustainable nature of mainstream food systems, their place at the margins of food supply means they have a limited impact on the overall sustainability of food supply. Given the prevailing high-tech, market-oriented direction of food and farming policy in Britain today (HM Government, 2013), more government-led support for the development of AFNs seems unlikely, so it is doubtful that, in the short term at least, AFNs will be able to deliver a significant contribution to addressing sustainability.

Whilst acknowledging the contribution of AFNs, we argue that increasing domestic production of vegetables could deliver sustainability and health-related goals better than AFNs. Thus we argue that a policy priority to increase domestic production of vegetables, and provide better support for domestic growers, might provide a pragmatic alternative to AFNs in achieving sustainable goals for food supply.

Our research, which included interviews with conventional vegetable grower organisations and those involved in AFNs, suggests that government attempts to increase vegetable production using orthodox marketing ideas were largely unsuccessful. We argue that alternative ways of thinking about markets and marketing may help us move beyond the simple dichotomy of *either* mainstream food *or* AFNs. The theoretical framework we adopt is based on the IMP perspective. Understanding food systems not as discrete markets but as industrial networks provides additional insights for policy makers.

Theoretical framework: Alternative perspectives on how markets work

From a theoretical perspective this paper embraces alternatives to the standard neo-classical view of markets (Araujo, Finch, & Kjellberg, 2010). In particular, and in contrast to the standard economic market model, those who approach the food market from an industrial networks (IMP) perspective concentrate on the ways in which actors seek to position themselves within the network and to influence network forces for their own purposes (Snehota & Hakansson, 1995). Several studies have pointed out that the industrial networks approach can be considered an alternative to markets as a fundamental way of conceptualizing economic activity (Easton, 1992; Håkansson & Snehota, 1995). However, the public policy implications of this re-conceptualization remain relatively little explored. When economic activity is conceptualized as transactions within markets, there exists a wide range of terms with which to analyse public policy interventions; examples are market failure, positive and negative externalities, information asymmetries, and natural monopoly. Håkansson (2006) argues that when conceptualizing economic activity as relationships within networks, there is a need for new conceptual tools at the policy level. In this article we aim to contribute to this research gap.

The empirical context for this paper is the UK fresh vegetable supply chain, an interesting research context for a number of reasons. A substantial literature already exists concerning the problems of supply chain management in the food industry; fresh foods (such as vegetables, dairy products and fish) have been investigated using IMP ideas (Snehota & Hakansson, 1995). Gadde (2010:165) contends that the IMP approach is “an alternative meaningful conceptualization” that can handle the fragmentation of distribution research, and that “the ARA model used for analysis of industrial networks is a highly relevant framework for the investigation of (complex distribution networks)”.

IMP researchers have often sought to re-conceptualize food and agriculture ‘industries’ and ‘markets’ as industrial networks, and to apply the conceptual tools of relationship and network management to them. Olsen (2012) pointed out that the fishing industry is subject to “natural stochastic variation and regulatory interferences”, and the goal of IMP studies in this field has been to discover ‘how the real-market-economy actually works “below the surface” of competitive market images’. Commenting on IMP research studies of the seafood industry, Olsen (2010) interprets fish markets ‘as battlegrounds between historical distribution networks across the world with their traditional market arrangements and power structures on the one hand, and the emerging integrated retail chain to supply chain ... networks on the other.’ A good example of such parallel networks is the Japanese seafood distribution system (Abrahamsen & Hakansson, 2012). Similarly, the UK fresh produce sector contains parallel, traditional market arrangements, alongside the increasingly dominant integrated supply chain networks headed by major supermarkets, and also emerging AFNs such as farmers’ markets (Wycherley, 2000). Hingley and Lindgreen (2001) researched both the UK fresh produce industry and the New Zealand wine industry, concluding that there is ‘widespread criticism of “partnership”/“relationship” terms as lacking substance and a PR gimmick’ (Hingley & Lindgreen, 2001:20). Hingley (2005a:4) asserts that competition in the UK food industry is best conceptualized as competition between managed industrial networks, a major retailer at the centre of each network, and super-middlemen as network coordinators within each network.

This stream of research, proposing that we need alternatives to straightforward neo-classical conceptions of the free market in the fresh food sector based on industrial networks continues to thrive. Brindley & Oxborrow (2014) proposed that the themes of relationships, networks, channels and partnerships were essential to the development of sustainable food supply chains. Looking at Norwegian fresh fish supply Abrahamsen & Håkansson (2012) contrasted the “jungle metaphor” of antagonistic actors involved in zero-sum games with an IMP conception of economic interaction. Hingley has continued to contribute to this debate, focusing in particular on the ‘overall inefficiencies and ineffectiveness’ resulting from asymmetric power relationships in food supply chains (Hingley, Lindgreen, & Grant, 2015, p.2). However, relatively little attention in this debate has been paid to the public policy implications of an alternative re-conceptualization of economic activity from an IMP perspective. It is towards that gap that this paper is directed. Inspiration is taken, in particular, from Håkansson’s (2006) attempt to frame economic policy matters using a business network conceptualization of economic activity. Håkansson (2006, p.163) argued that ‘from a policy point of view networks should never be left alone to develop according to their internal driving forces as these always will favour the most powerful within the network’ leading to economic inefficiency; the parallel with the consistent findings from Hingley’s (Hingley, 2005b; Hingley, et al., 2015) research into power in food supply chains is striking.

Table 1 provides a summary of the key conceptual theme derived from the review of the literature and used in the analysis of the empirical data for this study.

Table 1: Principal Conceptual Themes

	Conceptual Theme	Source
Theme 1	Retailer dominance (retailer managed networks)	(Hingley, 2005a; Hingley & Lindgreen, 2001; Hingley, et al., 2015)
Theme 2	An alternative explanation of how the real-market-economy actually works ‘below the surface’ (in contrast to the orthodox competitive markets narrative)	(Araujo, et al., 2010; Olsen, 2012)
Theme 3	AFNs and conventional networks (two or more distribution networks operating largely in parallel with limited inter-network interaction)	(Abrahamsen & Hakansson, 2012; Olsen, 2012; Wycherley, 2000)
Theme 4	Managing Relationships (relationship management processes)	(Hingley, 2005a; Munksgaard, 2008)
Theme 5	Sustainability (3 pillar model: economic, social (including health), and environmental sustainability)	(Elkington, 1998; Peattie, 1995)

Research methods

The study makes use of key informant interviews: individuals selected because of their unique knowledge or perspective. Our empirical study focused on the English vegetable sector and explored how marketing and sustainability are understood and interpreted by actors across the sector, using qualitative data from 23 key informant participants. The aim was to explore both ‘conventional’ and ‘alternative’ perspectives. The interviews explored the following issues: the failure to market (lack of competitiveness in the vegetable sector), and sustainable production. In network terms we explored respondents’ accounts of the management of relationships within the parallel networks of pioneer AFNs and conventional supply and how different participants conceptualized environmental sustainability.

Interviewees fell into five categories (see appendix 1): grower/farmers [n=8]; grower/packers [2]; consultants to growers [4]; representatives of growers such as farmers' associations [6]; and policy experts [4]¹. Growers' first-hand experience and practical knowledge are important in the study. Grower consultants (e.g. agronomists) provide rich contextual evidence that draws on a scientific and technical understanding of the problems of vegetable production. The views of grower representatives and policy experts such as the horticulture specialists at the UK Department for Environment, Food and Rural Affairs (Defra), provide cross-sector insights. For the growers, most of the interviews took place face to face at the grower's farm, other interviews took place in London or by phone. The grower interviews were conducted using an interview topic guide based on production/marketing activity and sustainability/protection of environmental resources. The interview topic guide for grower representatives and policy experts sought their views on industry-wide policy issues as well as supply chain challenges. 94 individuals and organizations were contacted in order to arrange the 23 interviews that took place. A thematic analysis of the transcripts was carried out facilitated by qualitative data analysis software (NVivo).

Findings and discussion

Themes 1 & 2: Retailer dominance and how the real-market economy works

There is a great deal of agreement that there is a problem concerning margins for growers. Supermarkets were able to appropriate a large share of the value created in the supply network. The perishable quality of vegetable commodities means that they cannot be stored until prices improve so prices below the real cost of production have to be accepted: *'And if somebody says to you, "We don't want your lettuce this week," what are you going to do with, you know, half a million lettuce?'* (Con01)²

One grower consultant highlighted the interconnected problems associated with growing vegetables. Scale was required to ensure low unit costs but scale locked a grower into the supermarket supply network since only about 15% of vegetables go through other routes to market. Without funding from profits, innovations in domestic production (such as extending the growing season) were being stifled, and the large grower-packer marketing organisations (GPMOs) that typically acted as focal suppliers in the conventional network, could turn to overseas suppliers as an alternative to domestic produce. The policy solution proposed to *retailer dominance* was to encourage growers to become more competitive by reducing costs, by collaborating and forming Producer Organisations (POs), or by adding value (e.g. through provenance schemes), and seeking new routes to market. These strategies did not always sit easily with the *real-world* problems that growers encountered: retailers could continue to take a disproportionate share of the value whatever the production cost base or margin on added value produce. Becoming part of a PO might disrupt existing agreements with retailers, and growers were wary of upsetting retail buyers. Policy-makers, who rely on competitive retailers to keep food prices low, and to enforce quality and safety standards, are reluctant to tackle issues of retailer power.

Theme 3: Parallel networks

The dominance of the supermarket supply chain meant that AFNs remained at the margins of vegetable supply: *So what have we got left? We've got box schemes, we've got farmers' markets, we've got a few little local markets might happen every Saturday and so on...* (Con04)

Growers in AFNs discussed the quality of the relationships they have with their end customers suggesting that, for some customers, identity and authenticity are important. The AFN growers also

¹ Note that 23 interviews were conducted but 24 roles are listed in the text at this point; one consultant moved into a policy expert role during the course of the study, hence straddling two categories.

² For interviewee coding see appendix 1.

challenged the view that their produce was more expensive, suggesting that clever marketing and packaging gave the impression of lower prices in supermarkets for some lines of fresh produce. Policy experts agreed that consumers' knowledge of prices for vegetables is rudimentary and focuses on headline price rather than price per kilo, but supermarkets are convenient and fit in with mainstream consumers' lifestyles better than AFNs. There are few alternative routes to market for many growers apart from the retail multiples. One conventional grower claims that supermarkets do want British vegetables, reflecting consumers' interest in local produce and a policy expert suggested that the long term consequences of contraction and consolidation in vegetable supply might not be positive for the retailers since we may soon reach a point where: '*...Asda has no one to buy carrots from ...*' (Pol02).

Policy initiatives to develop alternative routes to market included AFNs but also some support for wholesale markets and for export. Some of the larger growers see long term opportunities in export, but at the moment it remains a small part of the overall market. A policy expert acknowledged that plans for a business development program for alternative routes to market have been cut as part of the UK Government's policy to reduce public spending. The pattern of separate, *parallel networks* of retailer dominated supply chains for conventional growers and AFNs for smaller, organic producers remained.

Theme 4: Managing relationships

As a mechanism for managing relationships, contracts are perceived as relevant only when relationships fail. The protection that a contract provides to growers was largely illusory because the retailers controlled the enforcement of contracts. For growers, contracts were seen as a double-edged sword, a formal mechanism whereby powerful downstream actors could require compliance from the grower, secure in the knowledge that few growers would use contracts to enforce agreements. The retailers normally dealt with growers via a focal supplier, often a large grower-packer marketing organisation that coordinated year round supply of produce to a retailer. The GPMOs were more closely aligned to supermarkets in terms of their view of contracts: '*So if the farmer produces it and he gets a disease problem or a pest problem he will, you know, he will fall out of contract and, you know, the retailers or we [emphasis added] would have no rights or reason to take it.*' (GP02)

In contrast, there was a more collaborative approach in AFNs, with examples of cooperation between growers and AFN downstream organizations: '*... there has to be a bit of give and take [...] especially when you're dealing with the soil and the weather [...] with this year, you know, we'll be working very hard to try and return whatever we can to our growers because I really want them to be there next year...*' (Gr04)

The GPMOs are gatekeepers to large retail markets who have effectively integrated the downstream supply chain, taking on more intermediary functions that were once performed by the retailer. Market-based, arms' length relationships between growers and intermediaries have been replaced by longer term arrangements and coordinated interactions within managed networks dominated by a retail multiple and the GPMOs. The GPMOs continue to exercise control upstream through contractual arrangements with individual growers at home and overseas. As far as *managing relationships* was concerned, policy makers relied on a regulatory instrument (the Grocery Code Adjudicator) and a voluntary code of conduct (the Grocery Supply Code of Practice) but growers did not see them as an effective control mechanism to address retailer power in conventional food networks.

Theme 5: Sustainability

The conventional network tended to see sustainable production in terms of incremental improvements in productivity within the sector. Policy initiatives encouraged the development and use of alternatives to fossil fuel energy such as anaerobic digestion facilities. Nevertheless one manager in a

GPMO claimed a focus on renewables diverted growers from investing in growing crops: *'Growers have only got so much money to invest so if they're putting it into solar [...] it has its benefits but, it's also, I think it's negative. We [should be] putting all our capital into growing this business and producing more...'* (GP01)

Those in AFNs generally talked of sustainability in terms of transformation of the whole system of production and consumption of food: *'Now all of that fits really well because we're eating too much meat, we ought to be eating lots of beans because beans are ever so good for us, beans need to go back in the rotation and so on ... Now, somehow in order to change the whole agricultural dynamic [...] we have to convince people [i.e. growers] that there is a market for crops, we have to convince people, the growers, to invest in those production systems and make it happen.'* (Con04)

In terms of *sustainability*, policy initiatives provided incentives for growers to engage in practices to reduce waste and to make more use of low carbon energy. These options aligned economic and environmental considerations, within a narrative of sustainable intensification. Policy largely ignored the potential for realignment of agricultural production towards more vegetable production and away from reliance on sectors that have more impact on the environment such as livestock and dairy.

Conclusion

Appendix 2 provides a summary of the results from the empirical study organized using the conceptual framework provided in Table 1 and appendix 3 summarises how neo-classical economics and IMP-inspired perspectives frame the policy discourse. Our study indicates that the dominance of the major supermarkets over the UK fresh food production sector found in prior studies remains a key feature of the sector; power asymmetries are at least as significant as they were when these earlier studies were reported (Hingley, 2005a; Hingley & Hollingsworth, 2003; Hingley & Lindgreen, 2001; Hingley, et al., 2015). There is evidence that the way that the 'real market economy' works in practice in this sector (Olsen, 2012), is best described as competing managed networks with a major supermarket at the hub of each network and, collectively, supermarkets in almost complete control of the routes to market. While AFNs do exist in this sector (Abrahamsen & Hakansson, 2012; Olsen, 2012) the alternative routes to market, such as farmers' markets, are not a viable alternative for large-scale growers. As a consequence of the network structure and supermarket dominance, relationship management in the sector seems to be rudimentary. The actors in the networks understand that the exercise of supermarket power, whether implicit or explicit, is the central factor in relationship management. Formal contracts play a relatively unimportant role in the sector. While vegetable producers appear willing and even enthusiastic about investing in sustainable production, the evidence from this study is that the price pressures exerted by the supermarkets reduce margins to such an extent that investment in sustainable practices becomes difficult or impossible. Growers are focusing their efforts for more sustainable production on sustainable solutions that also yield economic benefits. Renewable energy may have cost benefits for farmers but environmental solutions that affect their already low margins will be difficult to implement.

From an orthodox perspective, economic sustainability is framed in terms of individual enterprises and individual consumers in markets so that opportunities to improve sustainability of food production overall may not be realised. Heterodox ideas from industrial marketing scholars, particularly those associated with the IMP approach (Axelsson & Easton, 1992; Ford & Hakansson, 2006; Håkansson, 2006; Håkansson & Snehota, 1995), suggest an alternative conceptualization of the UK fresh produce supply chain as a network rather than a market. The strategic focus becomes the network rather than the individual enterprise so that options that enhance the position of the individual firm but which jeopardize the network as a whole are not seen as effective long-term strategies.

Appendix 1 : List of Research Participants

ID Code	Description
Gr01	Conventional network grower Medium/large mixed traditional farm, field and protected crops, East Anglia Model farm, professional manager but conservation also an important concern Main supply network avoids retailers
Gr02	AFN grower Organic grower mainly protected crops, East Anglia Entrepreneurial young owner family farm but branched out into downstream supply Alternative supply network through traditional/farmers' markets
Gr03	AFN grower Organic producer/lifestyle farmer field and protected crops, West Country Small farm, experience of food cooperatives, runs market stall as outlet for produce
Gr04	AFN grower Medium/large organic grower/supplier field and protected crops, Successful box scheme, main location is West Country but also overseas
Gr05	Conventional network grower Young owner famer third generation family farm, South East, sustainability champion Field scale vegetables, serving mainly ethnic wholesale foodservice markets
Gr06	Conventional network grower Semi-retired, traditional family medium sized farm Field scale vegetables, Eastern England
Gr07	AFN grower Organic grower (not certified), West Country Very small niche producer (chillies) supplements income from farm, part time, lifestyle choice Serves farmers' markets and some food producers
Gr08	Conventional network grower Grower owner (retired) with some consultancy experience, small/medium sized farm, South East Formerly a mixed farm, most recently focused on specialist vegetable production for catering trade
GP01	Conventional network grower Grower/supplier of field and protected crops, based in South East Crop technical manager for large GPMO, focal supplier for retail multiples
GP02	Conventional network Supplier of field and protected crops based in South East Business Development Director for large GPMO, focal supplier for retail multiples
Con01	Conventional network Consultant/agronomist, experience of UK and overseas production Knowledge of large scale production and mainstream supply networks
Con02	Knowledge of AFNs and conventional networks Senior representative from LEAF, grower environmental standards body Broad knowledge of vegetable sector across England, conventional and organic production
Con03	Re-classified as PoI04
Con04	AFN network Aligned to organic or non-conventional approach to production, South East Grower consultant and writer, sustainability champion
Rep01	Experience of both AFNs and conventional networks Representative from Tomato Growers Association - mainly protected crops Knowledge of both conventional and organic production
Rep02	Mainly conventional affiliation Representative from CLA (Country Land Association) Rural business focus, traditional farming
Rep03	Mainly conventional affiliation Representative from CLA Rural business focus, traditional farming
Rep04	Conventional network affiliation Representative of British Growers Association (Senior manager) broad knowledge across field scale and protected crops
Rep05	Conventional affiliation Representative from FPC (Fresh Produce Consortium) Broad knowledge of the supply network,
Rep06	Conventional network affiliation Representative of British Growers Association (Chair) Conventional affiliation, broad knowledge of field scale and protected crops

	Also successful niche grower (asparagus, sprouts) for conventional network, based in North, farming background
Pol01	Conventional network Also a grower traditional family farm, Eastern England Medium/large traditional mixed farm field scale vegetables and other crops Member of the Policy Commission on the Future of Farming and Food Had been involved at a senior level in a farmer representative organization
Pol02	Mainly experience of conventional networks Representative from Defra, senior role Extensive knowledge of horticulture across both field and protected crops
Pol03	Mainly experience of conventional networks Representative from Defra, middle manager role Extensive knowledge of horticulture across both field and protected crops
Pol04 (originally Con03)	AFN affiliation Writer on food and agriculture (semi-retired) Former member of Agriculture and Food Research Council A critical voice in the policy discourse

Key: Gr = grower/farmer; GP = grower/packer marketing organisation, involved in home and overseas production; Con = grower consultant, involved in advisory role to growers (e.g. agronomist); Rep = grower representative, crop association or farmer association; Pol = policy expert (e.g. Defra horticulture specialists)

Appendix 2: Summary of the results

	Summary	Indicative quotes	Policy Solutions – based on orthodox marketing ideas
Retailer dominance and how the real-market-economy works	<p>Low margins for medium-sized growers in the mainstream network, retailers able to appropriate large share of the value</p> <p>Growers claim that prices do not cover costs of production. The market mechanism is failing since producers are not receiving the long-run marginal cost of production (that is, short-run production costs plus sufficient contribution margin to fund long-term investment and a normal rate of profit).</p>	<p><i>'And if somebody says to you, "We don't want your lettuce this week," what are you going to do with, you know, half a million lettuce?' (Con01)</i></p> <p><i>'...I think that whole circle needs to be reconnected, rewired in a way which there is a better balance. So the retailers don't continuously take 50% margin.' (Rep04)</i></p>	<p>Growers to become more competitive – by reducing costs or adding value. Policy initiatives – e.g. FCC - to rationalise production processes; Red Tractor or higher quality provenance schemes – to add/signal value; Formation of POs to increase scale of production and address retailer power</p> <p>Policy makers relied on retail multiples to keep inflation low and to enforce food safety standards</p>
Parallel Networks – conventional and AFNs	<p>Access to mainstream consumer markets largely controlled by the retail multiples and the GPMOs that act as their focal suppliers.</p> <p>Growers in AFNs are able to understand customer requirements and meet their customers' needs. They challenge the view that their prices to consumers are higher.</p>	<p><i>'I suspect it might be a barrier to entry as well, that if you decided that you wanted to grow some carrots, you would have trouble selling them.' (Pol02)</i></p> <p><i>'... having that direct link with the customer. It gives us a chance.... We can talk to people and find out what they want...' (Gr03)</i></p>	<p>Policy plans to develop a range of AFNs have been discarded.</p> <p>AFNs such as farmers' markets provide opportunities for pioneer producers – but are not a solution for medium sized conventional growers</p>
Managing Relationships	<p>Growers wary of written contracts because enforcement of contracts shaped by the retailers or GPMO buyers</p> <p>Contracts a double-edged sword used by supermarkets to secure year round supply.</p> <p>More contract production/block cropping – growers rent out land to large scale contract producers.</p>	<p><i>'...it's very rare that anyone sticks to the contracts [...]in a difficult season, you know, they can be worthless at the end of the day...' (Gr01)</i></p> <p><i>'...if they [the growers] get one thing wrong they'll [the supermarkets] terminate the contract, [...]. There is a clear fear factor within the vegetable sector...' (Rep03)</i></p>	<p>GCA and GSCOP to enforce written contracts</p> <p>But growers reluctant to enforce contracts in networks for fear of damaging long term relationships</p>
Sustainability	<p>Integrated farm management is commonplace, as is more crop rotation – conventional producers are addressing environmental impact especially where there are cost savings, sometimes using and adapting ideas from AFNs.</p> <p>Investment in renewable energy may be diverting resources from investment in sustainable production.</p>	<p><i>'Growers have only got so much money to invest so if they're putting it into solar [...] it has its benefits but, it's also, I think it's negative. We [should be] putting all our capital into growing this business and producing more...' (GP01)</i></p>	<p>Priority for sustainable intensification. AFNs seen as niche alternative for consumers willing to pay more.</p> <p>Key concern to increase food production to meet rising global demand. Focus on reducing the environmental impact of vegetable production.</p> <p>The alternative systems narrative that agricultural production needs to shift to proportionately more vegetable production and less meat and dairy production is side-lined.</p>

Appendix 3 Neo-Classical Economics and IMP-Inspired Perspectives: A Summary of How They Frame the Food Policy Debate for the Fresh Vegetables Sector

	A Neo-Classical Economics Perspective	An IMP-Inspired Perspective
Theoretical base	Self-regulating markets, the dynamic disequilibrium of markets drives innovation and better ways of satisfying consumers	Markets as networks, industrial marketing, networks may be efficient and effective but are not self-regulating
Societal problems to be addressed	Economic demise - an inability to compete in global markets	Ecological disequilibrium, resources depleted by destructive technologies
Policy goals	Productivity, economic growth, wealth creation	Efficient resource use, prosperity and stability, well-being
UK Food Policy solutions based on:	Competitive markets; sustainable intensification of global commodity supply chains, optimal societal outcomes emerge from competitive markets	Managed networks; institutional and structural change to support network interaction, regulation of networks to ensure optimal societal outcomes
Policy priority for vegetables sector	Strategic focus: individual firms Competitiveness, efficiency and consolidation of individual grower organizations, sustainable vegetable production in England based on low energy and low carbon, development of export markets	Strategic focus: the network Resilience and diversity, sustainable agriculture based on a larger vegetable production sector relative to more resource intense agricultural sectors
Producers and nature of their relationship with their customers	Mainly conventional production, some organic production as value-added produce, engaged in thin, discrete, adversarial transactions with customers	Diverse range of producers engaged in thick, embedded, relationships, supply chain made up of interdependent, incomplete organizations
R&D and desired output	Focused on mechanization and bio-tech developments to improve competitiveness and produce affordable, plentiful produce, using low carbon, efficient production	Focused on the adaptation of natural ecological systems, low and high tech, learning over time, to produce healthy food, sufficient production, balanced appropriation of value across supply networks

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