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CHAPTER 11. REVISITING EVOLVING WEBS OF AGRI-FOOD AND RURAL DEVELOPMENT IN THE UK: THE CASE OF DEVON AND SHETLAND

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Introduction: changing places

Noting the emergence of alternative and re-embedded sets of production chains and networks, Marsden (2010) notes that these are interlinked in providing stimulus for rural development. In this way, it is suggested that the relocalization of agri-food plays an important integrative function in the development of what we call rural and regional ‘webs’ of interconnection (Ploeg, 2008), through an examination of two regional case studies – Devon and Shetland, UK. In this paper, we revisit these case studies in a third phase of longitudinal study, exploring the challenges and continuities in the unfolding of the rural web, paying particular attention to the role that agri-food initiatives play in mobilizing distinctive rural and regional development processes. Crucially, the intervening period since the first phase reported by Marsden (ibid.), based on data collected in 2007/8, has witnessed wide-scale political, social and economic change under the 2010 administration of the Conservative/Liberal Democrat Coalition Government. Drawing on interviews with the same respondents interviewed in 2008 and 2010 (reported in Marsden, 2010) we find that agri-food plays an increasingly peripheral role in rural and regional development across these regions. That is, with state retreat from strategic engagement with rural development, and a concomitant squeeze on rural ways of life and livelihood making, diversifications that were previously considered new novelties move to the fore. Indeed, we might imagine that these novel diversifications were welcomed by the European Commission in its 6th Framework Programme, given their reformed focus away from a living countryside underpinned by agricultural activity, towards a more integrated rural development strategy focused on “increased diversification, innovation and value added of products and services, both within and beyond the agricultural sector” (EC 2005:32) . However, we argue that trends in this direction raise serious questions for governing transitions towards a more sustainable and food secure future for the UK, particularly in the context of global environmental challenges associated with climate change and biodiversity loss.

The paper begins by outlining the concept of the ‘rural web’ (Ploeg, 2008) pointing to its continuing utility as a heuristic tool for the longitudinal study of continuity and change in rural and regional development processes. We then introduce each case study, beginning with an overview of advances and challenges across the Devon Farms Co-operative as an example of an initiative pursuing an eco-economic development pathway, before exploring the unfolding rural web in Shetland. Here, the advances of the oil industry and the burgeoning development of wind energy suggest a more bio-economic trajectory. In each case, we note the peripherality of agri- food as a novel and creative industry aligned to the support of tourism. The living countryside is, in both cases, certainly no longer based on agriculture alone nor indeed is it bestowed policy priority despite the recent alarms made about food security (see Royal Society, Poppy et al. (2014) and House of Commons Environment (2014).

Methods

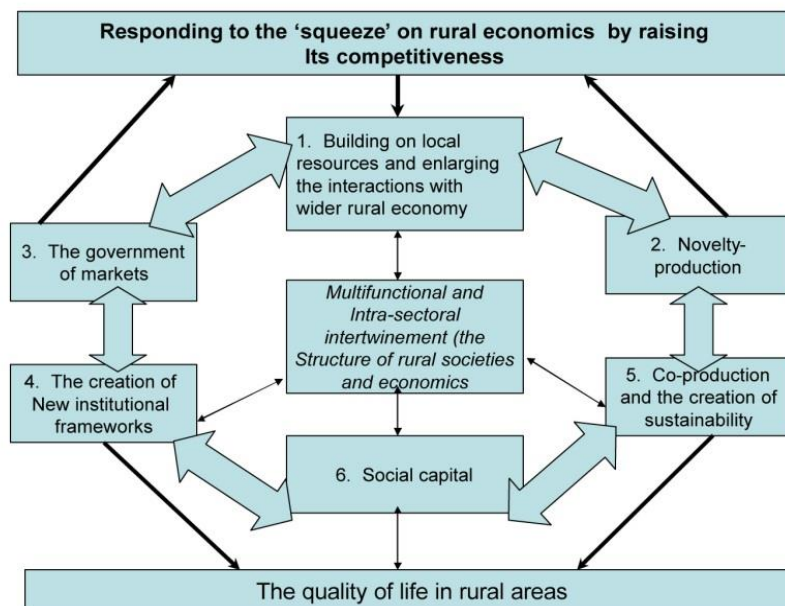
Semi-structured interviews were conducted with a total of eight members of Devon farms as well as two key development actors working for the Devon Local Authority. In Shetland, a further seven interviews were conducted with farmers, food processors, development actors to include the Local Authority as well as both protagonists and opposition to the proposed Viking Energy Wind Farm. Guiding this process are key research questions; how is the rural web configured? Have there been any changes since 2010? How is the rural development agenda framed at an institutional level and how is it understood by actors ‘on the ground’?

In this way, our methodological approach is both qualitative and longitudinal, pursuing an in-depth understanding of development processes rather than statistical inferences and measurements. Our goal is not to achieve a statistically accurate description or explanation of development processes in each case, but to arrive at a greater understanding of their complexities. An important part of this pursuit is an ongoing refinement of theoretical devices such as that of the rural web. Quantitative methods such as a questionnaire survey were thus deemed unsuitable for these purposes, while not precluding the potential benefit of more statistically oriented approaches in future research. Indeed, through ‘re-interview’ (Thomson and Holland, 2003) we are able to consider the development of narratives around rural development, food and farming over time as related to a their particular locality. During interviews, an aide memoir guided discussion, leaving considerable freedom for the interviewees/interviewers to digress to capture new insights, issues and themes. All of the interviews were tape-recorded with the interviewees’ permission and later transcribed. Questions typically put to interviewees pertained to discussion of changes since 2010, any opportunities, new novelties or challenges that have arisen. All interviewees were invited to speak of their future development vision for their business as well as their county and region, as a means of garnering their insights, hopes and fears for their future.

The Rural Web

The rural web concept acts as a heuristic tool to highlight the differing responses to the squeeze on rural economies in order to maintain quality of life in rural areas at different times and places. This tool suggests that at the heart of each region's response are the intertwined institutions of society and economy of public and private life that draw differently on local resources in interaction with the wider economy, novelty modes and means of production, markets and market governance, the creation of new institutional frameworks, the co-production of sustainable ways of life and finally, the benefits of social capital. Rural development is thus grounded in and driven by a varied "set of internally and externally generated interrelationships that shape the relative attractiveness of rural spaces economically, socially, culturally, and environmentally" (van der Ploeg and Marsden, 2008:vii). These sets of relationships and transactions create synergies as they come to mutually reinforce one another. That is, rural development processes are not considered the result of direct policy interventions, but are informed and shaped by the unfolding of these creative patterns that we call the rural web, as illustrated below.

Figure 1. A conceptual model of the rural web (Marsden, 2010)



To explore these very rural development processes, we revisit participants, actors and their networks of the 2007-8 and 2010 study, eliciting accounts of continuity and change, of the private troubles of their 'contested countryside' (Cloke and Little, 1997)

as they connect with their milieu and come to form larger structure of social, political and economic life that forms their development pathway. Indeed, reversing C. Wright Mills' (1959) consideration of the city as an example of a private trouble and public issue requiring unpicking by the sociological imagination, we consider the structural fact of the rural by examining the political and economic issues that affect innumerable personal and individual milieu- what Mills (ibid.) calls the social setting that is directly open to her or his personal experience. In Devon, we find the rural web unfolding in ways that are more aptly characterised by eco-economy, which we define as an alternative and diverse spatial arena for the development of new endogenous production and consumption chains and networks. On the other hand, in Shetland there are clear tensions arising over the development future, with a current trajectory set to a pathway characterised by the bio-economy mode, characterised by exogenous development through corporate controlled production of biological products (fuels, mass, technology, enzymes, genomics) for global markets. In both cases, agri-food initiatives play an increasingly peripheral role,- a new agri-food 'squeeze'- which we suggest will have a calamitous effect on the potential for the UK to secure its food futures, and for the broader co-evolution of rurality and rural development. The conceptual and policy implications of this new agnosticism to the agricultural and the rural are occurring just at the time that society needs to consider the future sustainable resilience of its rural land based resources. This paradox is explored in the conclusions to the paper.

Pathways of Development - Devon

Devon is the third largest county in the UK, sparsely populated by just under 754, 000 residents in 2008 (Devon County Council, 2010:9). Moreover, there is a lower proportion of people of working age compared with the rest of the UK, and a higher proportion of people aged over 50. Thus, Devon (Council, 2010) has an ageing population, while the numbers of young people are in decline. The population is concentrated in the South of the county, with urban areas such as Exeter providing home to over 33 per cent of Devon's population, while urban areas in the North of the county account for 11 per cent of the county's population. However, more than half of the population live in rural areas, villages and small towns. Administratively, the landscape of the county is complex, being split into eight districts, 357 parish and town councils with nine parliamentary constituencies. Two national park authorities – Exmoor and Dartmoor – acts as planning authorities for protected landscapes. Noting the uniqueness of their economy, Devon County Council report that the most significant contribution to the increase in Devon's output between 1998 and 2008 were in industrial sectors – construction (7.8%), distribution (13.7%), and business services (30.4%). These three dominant sectors together contributed some 52% of the increase in total output for the county. The agricultural sector, including crop and animal production, hunting, forestry, fishing and aquaculture has the lowest labour productivity in Devon. It is also less productive when compared to the country, with output at 83% of the

national average. This may be partly accounted for by the topography that lends itself best to livestock, dairying and lowland cattle and sheep and upland hill farming, which tend to be more labour intensive. While the outbreak of Foot and Mouth Disease in 2001 marked a low-point, the share of output contributed by the agriculture and forestry sector grew in this period up to 2008, which Devon County Council note as the result of diversification.

“Not only has the growth of the agricultural sector outstripped the overall growth for the Devon economy – increasing its relative share – it has also outstripped the national growth rates. The national economy grew by just 5.4%, the Devon economy grew by 6.2% but the agricultural sector in Devon expanded by 12.5%. In Devon the agricultural sector expanded almost six times faster than the sector nationally (growing by just 2.4%). In the ten years to 2008 agriculture was the fastest growing sector in the Devon economy. As a result the relative contribution made by the agricultural sector almost doubled – from 2% to 3.6%. Whilst agriculture makes an important contribution to the Devon economy in terms of critical natural capital, the sector is the least productive in terms of output per worker” (DCC, 2010: 58).

Moreover, food and drink contributes just 10% of the total manufacturing output (around 1% of total output), a share that DCC report as falling over the ten years to 2008, while DCC report that agriculture in Devon “contributes *four times more* to output than it does in the national economy (DCC p.56). With such a decline in agricultural output, alongside an increasing focus on diversifying agricultural output towards value-added products and services, what is the development destiny for rural ways of life? To explore this question, in February/March 2014 we revisited the same members of the Devon Farms Co-operative interviewed across the intervening periods of 2008 and 2010, asking them to discuss the changes and continuities in the challenges they face operating a farm business, as well as the diversified aspect of their business; farm tourism. This retreat from mainstream agricultural productivism, characterised by the shift towards intensification, extensification and diversification marks an outlook on farming that is less well understood as what Drummond et al. (2000) term a ‘crisis’ but as a longer process wherein the extent to which farm households are able to depend upon their farm for their livelihood is increasingly challenged.

Devon Farms

In March 2014, the Devon Farms Co-operative of 110 farms providing bed and breakfast as well as self-catering accommodation to visitors, celebrated their 25 year anniversary. Over this period they have supported each other to develop the diversified aspect of the farm business, not least, advertising and promoting themselves as one co-operative. While they comprise separate businesses, the farm and the accommodation components complement each other in providing a unique landscape and experience for visitors, while the generated income relieves pressure on farm productivity and the widely noted ‘cost-price squeeze’ explored by Horlings and Marsden (2011), Darnhofer

(2005) and Van der Ploeg (2000). Indeed, the story of Devon Farms speaks to the persistence of a business form that has largely disappeared elsewhere (Whatmore et al., 1987), that is, the combining of family ownership of assets with managerial control as an institutional unit. Indeed, while Lobley and Potter (2004) find in their survey of agricultural households in England, that the economic centrality of agriculture for the family farm business had declined, we also suggest that Devon Farms offers an example of the collective reconfiguration of the farm business towards an eco-economical form of endogenous adjustment and development to the cost squeeze in agriculture, echoing what has been termed the new rural development paradigm in Europe (Horlings and Marsden, 2012).

Indeed, Evans and Ilbery (1989) devise a conceptual framework for the investigation of farm-based accommodation and tourism in Britain, using on a political economy perspective as advocated by Marsden (1984) that interrogates the interactions between market and family relations that coalesce around the family farm. Here, external institutions shape farm investment through the supply of capital for the development of farm tourism accommodation; from high street banks and heritage organisations to direct government influence in the form of grant aid for the establishment of alternative enterprise. Furthermore, the internal farm environment demands diversified activity to boost family income and farm profitability. As the external capitalist environments pressures the internal farm environment to restructure, Evans and Ilbery (ibid.) argue that a diversification to farm accommodation may not necessarily reduce reliance upon external capitals, but in some ways deepens this relation of dependence through loss of control over business assets and management rights. Here, they also note the emergence of farm based accommodation and tourism as an important phenomenon for agricultural restructuring, one that received little serious attention, scholarly or otherwise. While this has somewhat been redressed by further studies in advertising (Evans and Ilbery, 1992a), marketing (Clarke, 1999) and in communication (Clarke, 1996), further work by Evans and Ilbery (1992b) has returned to the conceptual framework outlined above, arguing that outside organisations are increasingly involved with farm-based accommodation, thus facilitating the penetration of agriculture by private and public capitals.

These trends mark commentary on the resilience of the family run farm business, one that we seek to develop by means of revisiting the conceptual framework of the 'rural web'. This section now draws upon the experience of X number of respondents as related to the thematic categories derived from the analysis of each interview. We focus here on a common thread that permeates each narrative: (i) the growing economic centrality of the tourism aspect of the farm business, (ii) the travails of meeting the demands of a shift towards the novelty driven customer-facing service sector and (iii): the perceived and real retreat of the state from the support of family farming agriculture as a mode of commodity production. These shifts, when taken together, we argue, represent a devalorisation of food and food production as a centrifugal force in rural

economies that will serve to undermine the balance of a sustainable rural web of interconnections now and in the future.

Novelty as economic centrality in diversified family farming.

Speaking of the bookings that returning customers make annually, respondent 1 (pseudonym) reflects upon the intertwining and co-production of the farm and service aspects of the farm business. Crucial to note here is that the agricultural aspect is not only called into question in the first instance in terms of its profit making potential, but is considered only in terms of its capacity to generate income and profit for the tourism aspect. Agriculture is *itself* the value added.

For instance, Easter is fully booked and has been, well, apart from the fact that the schools have messed up and they're going back Easter week this year, but the two weeks before Easter, the school holidays if you like, have been booked for a year, because people book before they leave, because they want their children to experience lambing. So therefore from a research point of view, or a cost analysis thing, how do you work out how important the sheep are? Is that profitability for the sheep, or is that profitability for the cottages? And inevitably, it's very interlinked.

Respondent 1: livestock

Indeed, respondent 1 and her husband began as dairy farmers, working with 100 acres of land. Recognising the somewhat limited capacity for productivity with this size of farm – “It's going to make you money but you're not going to live on it” - He developed the cottages for farm-stays. The cottage business then became “absolutely key in providing our family with an income”, which was not necessarily noted at the time as being quite so central to the business. Rather, farming “was the most important thing”, and the cottages were considered a bonus, as a little “pin-money for the wife”. Noting a considerable shift in emphasis since what she describes as the “most amazing agricultural downturn”, he explains that;

Those bits of cottages on the side were probably the only things making any money on a lot of farms, and certainly hugely important in the farm income, and that has changed the way that women have run them, because I think women if you like, I think I'm being very rude and very categorising, but I think women went from something they did and, you know, the husbands were pleased that they did it and it was quite nice and everything - to actually realising how important it was, and also when really it didn't particularly matter if they sold 20 weeks or 22 or 18 or 30, then suddenly it really did matter, so those women became much more professional in what they wanted to achieve, because they needed this business to make money, because it was a key part of the farm, and as such was being respected as such by the farmers.

Respondent 1: livestock.

The professionalization of service provision on Devon farms thus also points towards an often underappreciated and less well understood aspect of the farm business as ecological entrepreneurship – the contributions made by women (Gasson, 1992). While

many women are not perceived to consider themselves entrepreneurs, and, as noted by Little (2002), are therefore less likely to apply for Local Authority grants to support the development of their business endeavours. Indeed, with the shift from government to governance, the sorts of project funded at local partnership levels tend to focus on masculine interpretations of development centred upon the 'bricks and mortar' projects with literal concrete outputs, rather than those focused around community development. This is not to even mention the competitive and corporate style application, a process found to be unfamiliar and typically uncomfortable for women. It seems worthy to point towards the benefits of the eco-economical trajectory of endogenous development that has brought recognition, professionalisation empowerment for women who begin to see centrality of their contribution to the business as more than a fringe activity. For another participant;

I mean, there's a long way to go for all of us [women], in various - you know, we all have our different strengths, but I would say over the fourteen years, I've seen a lot of people realise that they are actually running a successful business, and that it is a business, it's not pin money, it's not something you do on the side, it's integral to the business of the farm.

Respondent 1: livestock

Moreover, interviewing husband and wife farmers, respondents 2 and 3, they go further in emphasising the economic centrality of the tourism aspect of the farm business. Crucially, it is the farm that provides the building block for the success of the tourism business;

R2: And I think lots of the men farmers have realised that their wife's got a lot of input into their farm industry combining them both. The farm might have been struggling and then suddenly they've got these barns that they've converted and two things; the value of the farm's gone up because they've got not just a shitty old barn, they've got another house sort of thing and it's supplemented the income without using up any land in a way. So we've never really relied on the land as income. It's been more what I call an attraction, that's why we've got the sheep and so the guests can see it. We did have outdoor pigs and that's why we put in the woodland, 40 acres of woodland, and that was all to –

R3: Make it more attractive for our visitors.

Respondents 2 and 3

Developing further this narrative of economic centrality of the diversified aspects of the farm business is the growing sense that the family business and its resilience as a whole suffers, still, from the widely recognised problem of succession (Gasson and Errington, 1993).

How are you going to get the next generation in? Which you know, if you're doing agricultural things, you'll know. The trouble with these businesses, they're so capital-intensive. My husband and I are both in our middle fifties. This business is very profitable, it's a nice business, it's a lovely place to live and all the rest of it. There's not room for one of our children here. We have three children. We employ, effectively, we did a study the other day on it, we worked it all out - we effectively employ one full-time person, by the

time we've contracted out the cleaning and painting, you know, you have a contractor to come and bale the hay or a contractor to cut the hedges or whatever it might be. If you add up all the hours of people that help us run the business, it's almost one full-time person. Well, it probably is one full-time person. Probably 50, 60% of that on minimum wage. Well, our children don't want to work for minimum wage! (Laughter). Well, you know, they don't. I mean, they're all university-educated. Ruby, get down! It's a shame, isn't it? So, I mean, although this business has made us a good living and has brought up three children and helped them through uni and all the rest of it and we're making a nice living, it requires us both to work full-time and there's no way that any of our children could carry it on, which is a challenge, isn't it, if you like, in the rural community?

Respondent 4: livestock

Indeed, these challenges are exacerbated by those of meeting the demands now of a service industry defined and led by consumer demands for services to be delivered at digital pace. Speaking not only of the shift to online booking, the use of card payment terminals and the provision of wireless internet, there is the growing sense of demand for high-spec fittings, furnishings and decoration;

From our business perspective it's how I keep abreast of everything, and how you have the energy to keep abreast as well, because I think that not only have you got the changing electronic market, I think people's expectations have massively changed over the last fourteen years. When I was a child, we used to go on holiday to a holiday cottage, and you were delighted that you were away, and whoever owned the cottage, it was all great-granny's old furniture and it was all mix and match and it was just chaos, but that was fine. And then it became that that was completely unacceptable, and now it's really... better than home, almost. It's meeting that balance of not going down the iPad route, but providing them with access... Because if you just say, "Well, this has been good enough for all our guests up until now," you'll drift backwards, and I don't want to drift backwards, but sometimes I don't like to be dragged forward! (Laughter).

Respondent 1: livestock

Meeting more specific and novel customer demand is similarly a struggle for Respondents 5 and 6, whose farm cottages undergo continuous refurbishment and investment. Painting, updating bathroom suites and increasing access to digital services through the provision of wireless internet and flat-screen televisions are but only the beginning in the potential for the growth of the farm tourism business. Indeed, they find a market for the provision of childcare on the farm, corporate retreats and team-building trips as well as cooking holidays for groups of friends and families celebrating holidays and special events such as birthdays and anniversaries. Indeed, catering to these events requires further investment in specialist cooking equipment requested from customers, time to be spent in party planning and decorating, all of which they provide without increasing prices, in fear of the loss of custom. This, we argue, represents a second squeeze, that is, upon the diversified resource of the family farm;

R5: We're finding that people are asking more and more and more and we don't quite know how we need to package it or... Because, you know, it's spending more time doing it but "Oh yeah, course we'll dress it," but then that's taking you...

R6: Well that's right, we had find somebody who makes gluten free cakes, that was the last one, birthday cake, we had to find those sorts of things.

R5: We were thinking about what to do because this is ridiculous that we spend all these hours...

R6: But it's hard because somebody just asks you, "Could you hang up some balloons?" Well, yeah, I could really. But course then it's, "Can you do the balloons and can you find me someone who (inaudible 00:39:20) and can you...?" and then it adds up. But is that the best way, though, because of the experience, is that the best way to optimise a second booking? You know. The experience will far exceed by me hanging up some balloons than it would to be petty and charging £5 for hanging up some balloons.

Respondents 5 and 6: livestock

Trepidation over raising prices to cover the cost of inputs to the farm tourism business is not unique to Respondents 5 and 6. Indeed, this sentiment resounds across interviews with each of the participants revisited in this round of study, with concern expressed over the potential loss of custom if one was to charge for an evening meal, charging a premium for local and farm produce sold directly to farm stayers, to reflect the costs of refurbishing converted farm buildings to such high specifications, or simply raising prices to cover the costs of services now charged to individual businesses such as recycling and rubbish collection.

I think more people are more aware of being customer driven, rather than, "I've got a nice house and if you don't like it, well that's up to you." Now it's actually, more people are saying, "Okay, if you don't like my house like this or you want me to put in whatever, or you want me to provide meals or get the shopping in for you, of course we will," sort of attitude, I think.

Respondent 1, livestock

This customer driven focus, we argue, represents an added form of self-exploitation that has been widely noted as unique to the family farm business. Here, individuals may be more exposed to exploitation within the privacy of their own family business than anywhere else in the economy (Errington and Gasson, 1994). Indeed, while the flexibility of primarily family owned and operated farm businesses afford the weathering of hard times better than other business models typical of the wider economy, farm tourism adds a further string to this bow of resilience. However, the further restructuring of the agricultural business towards the provision of not only accommodations, but the tourism services associated with entertaining, add a further labour burden, without immediate remuneration, thus complicating the strong vision of leadership presented by Horlings and Padt (2013) in their comparative analysis of farm diversification initiatives across Europe. That is, while the additional labour associated with entertaining is treated as a trade-off for the long-term profitability of the business, or a benefit to be repaid through inheritance of the farm business in the longer-term future, without the concomitant rise on prices charged to the customer, this restructured

farm business is figured, we argue, in a further exploitative relation that adds to the devalorisation of agriculture, rural ways of life and the services and benefits that can be derived from it.

Crucially, this cost-price squeeze on the service aspect of the farm business, as has been the case with the agricultural dimension, is coupled by a decisive retreat of state investment and support for development. While the Local Enterprise Partnership (LEP) is presented by Devon County Council (DCC) as a means for such rural business development, it is widely perceived by farmers and more specifically the Devon Farms network, as biased in favour of capital intense businesses with direct employment returns, amounting to an urban bias. From an interview with DCC, it is clear that future pathways for development for the county as a whole are focused upon attracting new businesses in the 'knowledge economy and digital services sector' as outlined by the Heart of the South West Local Enterprise Partnership's Strategic Economic Plan 2014-2030 (Council, 2014). Better transportation links are considered key to bringing employment to rural areas, as rural dwellers may commute more easily to take up employment in the towns and cities across Devon. This a far removed from an endogenous rural development policy or strategy; and it is left to farm families and other rural entrepreneurs to create endogenous developments. Moreover, speaking of his experience of the dwindling institutional support for family and more diversified farming, Respondent 7 explains that;

Because you certainly don't get any sort of help from institutions in terms of Devon County Council now. That's all gone. I've had a go with the LEP as well and they're not particularly ... I mean they're interested and they pretend to be terribly ... oh yes, but you don't get anywhere. Because we're not a high sort of capital type job which could create employment.

Respondent 7, livestock

Furthermore, speaking of the deterioration of the local village amenities, Respondent 5 speaks also to the feeling of isolation as a rural business;

R5: Yes, I mean, there is so much really deprivation in the rural areas in our villages reflected in that. Like we only have now, you know, one bus a week, we don't have a shop anymore, you know, it is becoming... and the roads –It's only going to get worse. It's all getting worse because the investment is not happening in the rural areas at all. So you're becoming even more isolated within rural economies actually.

Respondent 5 livestock

Given the sense of abandonment felt here, what are we to make of the unfolding of the rural web in the case of Devon Farms? While as a co-operative, Devon Farms demonstrate use of their collective social capital, capacity for diversification through introduction of new novelties while drawing upon endogenous resources afforded by the Devon landscape to boost their resilience in the aftermath of agricultural downturn.

However, the wider financial crisis, shifts from government to governance (Rhodes, 1997), and the provision of knowledge services as key strategic development focus, alongside growing disaffection with food and agriculture in the context of apparent plentiful global supply, what role for food in rural development in the UK? While Marsden (2010) has suggested that the relocalization of agri-food plays an important integrative function in the development of what we call rural and regional ‘webs’ of interconnection (Van der Ploeg, 2008), there is little confidence among Devon Farm members that food represents more than a side-line role in supporting a business focused on the provision of tourism related services.

There are lots of issues within the agriculture industry, like food security I think is something that the Government never addresses, never thinks it should invest in sort of a structured agriculture sort of kind of policy at all really; it’s just from hand to mouth.

Respondent 5, livestock

Should this particular configuration of the rural web of interconnections continue to unfold in such a way as to cement the ‘hand-to-mouth’ approach to rural development, we suggest there is further cause for concern for the family farm business as food is increasingly fragmented into obliteration. While Gasson and Errington (1993) argue that the family farm business will indeed survive, they note that it will not necessarily do so “in the form that we know today” (ibid: p.305). Twenty years on, with increased diversification, innovation and value added of products and services within the agricultural sector, we are led to critically explore the implications for UK food security, as food production is increasingly relegated as a marginal and non-productive sector. To do so, we first consider the accounts of participants who represent and account for experience of the divergent development trajectory of Shetland.

Pathways of Development- Shetland

The Shetland Islands are the most northerly Local Authority area of the UK, with a development history characterised by the rapid expansion of the petroleum industry since the 1970’s. Given the unprecedented level of economic prosperity brought by the oil industry, Shetland remains relatively wealthy today, owing also to the continued success of a long-standing fisheries sector and a well-resourced system of public administration, which remains the largest employer on the islands (Shetland Islands Council (2012). Indeed, according to data compiled by the Office for National Statistics (Statistics, 2014). Shetland has considerably lower unemployment rates (1.3%) compared with the rest of Scotland (4.3%) and the rest of Great Britain (3.8%). Individuals who are economically active in Shetland also surpass the average figures for the rest of Scotland and the UK, with 81.3% economically active compared to 70.7% in Scotland and 70.1% in Great Britain. These figures are also higher than other island communities. Orkney, for example, has 79.3% economically active, and an unemployment figure of 1.5%. The number employed full-time in shellfish aquaculture

across Shetland is growing each year, while there has been a steady increase in the number of fish processing firms and factories from 11 and 15 in 1977 to 18 and 19 in 2011, respectively.

Speaking of the development and investment plans for Shetland, a representative of the Shetland Island's Council's (SIC) economic development branch states that support is now geared towards the development of business projects that "bring value to the economy" (Interview, SIC 2014) rather than circulating "what is already there" (ibid.). This support for exogenous development is further demonstrated by its support for a wind farm proposed by a partnership between Viking Energy Shetland LLP and Scottish and Southern Energy (SSE) Viking Ltd, which is a subsidiary of SSE plc. The proposed wind farm consists of 103 turbines, to be located on the central mainland, which would be the third largest wind farm in Scotland and the most productive onshore wind farm in the world. Running alongside this proposed development are tensions between other development trajectories that have traditionally represented the mainstay of the Shetland economy; fisheries and agriculture. While the wind farm poses little known or direct threat to the fisheries sector, it tears a fault line through the heart of the agricultural community, and for many Shetlanders alike. A voluntary organisation - 'Sustainable Shetland' - was set up to directly oppose the development of the wind farm. With a membership of approximately 870 - 900, they hold more support than the number of votes that Labour, the SNP and the Tories combined in Shetland.

Indeed, while Kanemasu et al. (2008) suggested that it was unclear in 2008 what role the Viking Energy wind farm project would play in the unfolding of the rural web – would the farm represent a bio-economical replacement of oil, or a mode of endogenous development on the basis of multi-functional use of land and resources? Indeed the 50:50 partnership structures between Viking Energy Ltd and SSE Viking Ltd implicates considerable community ownership, for VE Ltd is 90% owned by the Shetland Charitable Trust. However, differing interpretations over the use of these Charitable Trust funds lie at the heart of the controversy, and, we suggest are representative of competing ideas as to the pursuit *bio*-economy or *eco*-economy development trajectory for a sustainable Shetland. That is, the future is undecided, with clear support from the SIC to continue on the bio-economy mode; but with considerable trepidation on behalf of communities, particularly those represented by 'Sustainable Shetland', over the use of the reserve community funds for investment in what they consider a risky project, that may not deliver the returns for further community investment. In other words, there is fear that the wind farm will lock Shetland into one bio-economical pathway of development that will disable potential for a multi-functional eco-economy. Several interviewed to different stakeholders were carried on this problematic of which we give some items. Seeing the wind farm as a potential to replace oil as its primary industry, stakeholder 1 speak to the view that the wind farm will bring long-term community benefits.

Looking ahead we have got renewable energy, a wind farm looking to be built towards the end of this decade which will be quite a lot of investment and work as well, and big income. Because the wind farm is going to be 45% owned by the Shetland community itself it is going to be a huge amount of money coming in to help the community build its future. A lot of that money will be able to use for our economic development potentially. Nobody has decided what the money will be used for yet, they won't discuss it because it is not in the bag yet. And humans have got this aversion to count their chickens before they are hatched I suppose. But I see that money which could be £20/£30 million pounds a year coming into the public...into this trust charity that is owned by the community [...] so we can use it for developing industry. And no other community in Britain will have that sort of vast amount of money for such a small number of people to use to build a stronger future.

Interview: Stakeholder 1

Opposition, however, arises from severe scepticism over the financial statements made by Stakeholder 1. Indeed, while they suggest there are long-term community benefits to be derived from profits, due to the unique ownership structure of this wind farm -they anticipate only a successful outcome for the project. Furthermore, there is perceived to be little discussion of the high risk and other community-based opportunity costs involved in investing £180m of Shetland Charitable Trust resources in the project. Sustainable Shetland emphasise that the best-case-scenario publicised by VE is based on financial conjecture, as the final build costs, cost of energy transmission to the mainland, and the final price of electricity to be sold are all unknown. In this case, conflict over two differing potential outcomes are sorely debated, and divide communities and families across Shetland. This painstaking process has been met with sustained opposition, starting with a petition to the Court of Session in Edinburgh to review consent granted by Scottish Ministers under section 36 of the Electricity Act 1989. This process culminated in judicial review in September 2013, wherein the application made by the Viking Energy partnership was found to be 'incompetent', for they did not hold a licence to generate electricity. Furthermore, Ministers were found to have failed to address issues under the Wild Birds Directive as concerning the whimbrel. During this phase of fieldwork, the project strives to meet concerns and awaits approval, while the opposition suggest the VE wind farm project is "dying a slow death" (Interview: Stakeholder 2). The explicit undercurrent of this conflict is debate over competing sustainable and post-carbon visions and pathways for Shetland's development. Will the rural web unfold in ways that support a bio-economical trajectory through the export of energy, as wind power gradually comes to replace oil as the mainstay of Shetland industry? Or, will the VE wind farm project create new sets of relationships and transactions, that create synergies as they come to mutually reinforce one other? Indeed, while revisiting interviewees from the previous round of study, it is clear there is thirst for the latter mode, which, if the wind farm were to go ahead, would be seen to stifle any such opportunity for the creative unfolding of these patterns and interactions.

But I'm thinking smaller. If something big comes along fine, but not to the exclusion of all else. I think we're not big enough to sustain failure on a big scale but we can manage lots of

small ones, lots of small failures and lots of small successes. It's not going to be headline news but it creates a really healthy diverse economy. [The wind farm project has] also stopped sensible renewable things going ahead because we can't think about a smaller scheme because we've got this one big one. So it stopped a new power station being built, because it could have been built five years ago and so our emissions could have been far lower five years ago but they didn't do it because they were waiting on this wind farm and waiting on this cable. So it's an opportunity lost. I think that's the biggest thing is the opportunity cost because it's difficult to measure. What we else have we really done with the time?

Interview: Stakeholder 2

Speaking of future challenges and opportunities, there is clear verve for Shetland's development strategy to be hinged upon endogeneity and multi-functionality;

I think the kind of reality check in that we're a lump of rock in the middle of the ocean. We can't change geography no matter how much we pretend we want to. So I think recognition of transport links and where we're physically sitting and making use of the assets that we've got. We've still, despite the cuts and closures, we've still got a relative egalitarian society compared to a lot of places so that regardless of someone's background there's a good chance they'll get reasonable care and attention through the education system.

Interview: Stakeholder 2

This is similarly echoed as we revisit a local business and branding consultant, who has been active in building Shetland's brand 'Pride of Place' in order to advance the reputation of Shetland across the rest of the UK and worldwide, boosting the attractiveness of Shetland as a place to live as well as for tourism. While reflecting upon changes and challenges arising, the bio-economical pathway of development in Shetland is subject to further trepidation.

I think I would want to try and realise ... I'm quite wary of lots of eggs in one basket. And I think we've suffered to some extent to that in some ways, in relation particularly to oil. But I think it would be good to ... and I know everybody says this, we need to diversify. But I really think we need to make more of some of the things we do at the moment which we're not doing enough of. And I'm thinking particularly about the food sector away from fishing. I think there are things we need to do in terms of fishing as well. Mainly to do with value adding, provenance, there is more to be done there... But we need to do more in terms of other kinds of food production. Certainly the agricultural sector, the sheep, cattle.

Interview: Stakeholder 3

Large-scale Oil, and indeed energy and biological products are thus considered to be detracting potential to realise a more multi-functional eco-economy characterised by the social management of the reproduction of ecological resources in ways designed to "mesh with and enhance regional and local regional ecosystems" (Kitchen and Marsden, 2009). This not only presents a picture of a contradictory and contested development landscape, but is the site of struggle and tension over the potential to become *locked*

into the bio-economy to the exclusion of all else. Again as with Devon, the Shetland case is most acute in the apparently growing peripherality of agri-food initiatives, which, for van der Ploeg and Marsden (2008), play a crucial role in mobilizing distinctive rural and regional development processes in the unfolding of the rural web. Indeed, efforts to develop agri-food initiatives by the Shetland Livestock Marketing Group (SLMG) are now (2014) found to have been met with some disinterest from the SIC, who instead focus on what they call “big projects” synonymous with the bio-economy. Indeed, while the wind farm project presents in such potential development, the singular focus upon fish and fisheries is frustrating to those with a more holistic view of a rural development landscape that embraces also an agri-food dimension;

Well, the food and farming is ... unless you're into fish you don't matter anymore. The SIC don't do agriculture anymore, they've removed all the support payments that they had for various grant schemes and they have no development officer dedicated to it, so as far as agriculture's concerned that's a dead stop and ... so any development that goes on now we'd basically have to try to do it ourselves and so as chair of the cooperative then I try to if possible foster schemes that I think may have potential that we might be in a position to persuade people to help fund. I mean we're involved in a couple of projects at the moment which Development weren't interested in at all. One project on climate mitigation and carbon sequestration in sheep production on the peat moorland and we've been involved with the University of Aberdeen in a knowledge transfer partnership and the figures suggest that if livestock management is maintained at a certain level the whole system can be viewed as being carbon benign, can actually sequester carbon as well as producing lambs and wool, which is probably a first anywhere in Europe for an agricultural system to be showing a positive balance in climate change mitigation, so we've tried to do things like that, things that no other agency is willing to take on, but obviously we have no resources at all, so whatever we do we basically have to cheat and swindle our way. We have to be very quick and very shrewd in going about any kind of development, it's just simply not something that's encouraged.

Interview: Stakeholder 4

Development concentration focused around oil and fish result in a fragmented experience of Shetland's economic 'boom'. Indeed, the volatility of Shetland's oil industry since the 1970's is thought to be forgotten with the boost to the construction, service and transport sectors since decisions were made to build a new and refurbish the existing gas terminal. The benefits of which are therefore enjoyed by only particular sectors of the Shetland community.

That bit is booming, but you go out to the village here and you look through the streets and you try and find where it's booming down there. It's not booming with your average person. There's huge disparity there, so if you are told that Shetland's economy is booming – only for some.

Interview: Stakeholder 4

This exogenous focus is, moreover, considered by a representative of the stakeholder 4 as damaging to the potential to develop initiatives that have impact within the wider

community, for a pound spent locally through traditional industry circulates within the local economy for a longer period of time.

I mean that's the frustrating thing about the Shetland example at the moment is ... some years ago I learnt the use of the word synergy, there's no synergy here. It's all pigeonholed. The same as if you ever get into battles with the Civil Service you'll find that Civil Servants all sit in their own little pigeonholes and they're basically not interested in anything else outside their realm and the consequences of that are ridiculous legislation, ridiculous regulation and that's what's happening here. You have people who, "Oh fishing, fishing, fishing, fishing," and ignore everything else. The multiplier effect was on spending a pound within a local economy on a local product because it went around and it stayed within that local economy for a long period of time before it disappeared out, whereas the pound spent on imports was like giving it to Tesco, it was bye bye. You'd think a Development Agency, be it either the Development Department of the SIC or the HIE would grasp that and be actually saying, "Hold on, why not do this? Why do you persist in doing something that's obviously costing the local economy lots of money?" Nobody does it. Nobody does it.

Interview: Stakeholder 4

The profits gained by the oil industry are understood to be leaving Shetland. This focus upon one development pathway is met with further exasperation, compounded by what is perceived as an obstructive attitude on behalf of the SIC towards the continued development of traditional industries on Shetland, including agriculture in particular. This is exacerbated by not only the expense of imported food, but the profits that do not circulate in ways that boost the local economy.

A Landscape of Food Insecurity: fragmenting the rural web in the post carbon economy.

Following the trajectories of the rural webs in Devon and Shetland have unearthed some significant generic as well as local results. The longitudinal (2007-14) research has allowed us to begin to assess how the 'pathways towards rural sustainability' are being shaped and articulated. A major finding in both regions is the realisation that moves towards a sustainable rural development trajectory under more post-carbon conditions are not likely or necessarily likely to lead to more cohesive rural web developments. Agri-food in particular can play a potentially leading and synergising role. Yet left to their own state –led and governance devices, since 2010, both regions show that attempts at sustainable place making is showing more signs of fragmentation, contestation and a diminution of cohesive rural webs built upon synergy, facilitative institutional arrangements, and endogeneity. In both regions there has been a diminution of state support for agri-food developments, especially when it involves struggling multi-functional family and micro businesses (as in Devon), and the arrival of bio-economical mega projects in Shetland.

In this context, and to be critical of our earlier conceptual formulations, we have underestimated the growing and powerful exogenous forces linked to both the bio-economy (the attractiveness of wind power developments in Shetland), and shifts towards neo-liberalised and urban biased, spatial governance (in Devon); both of which prioritise (and by implication devalue) small and middle sized endogenous rural business development, especially in the multi-functional agri-food sector. These new exogenous factors, combined with those that we did incorporate in our earlier models of the rural web (such as the severe cost –price squeeze on agriculture-) also now combine to marginalise and peripheralise small land-based businesses and the networks (social capital etc) upon which they are based.

This does not necessarily devalue the conceptual power of our rural web. Rather it shows that its very dynamic and contingent mobilisation is indeed a site and a place of dynamic and valuable struggle. A struggle we see clearly in our Devon Farms Network; a network which has been developing over 25 years, but having to adapt and self-exploit itself and its members in ways which allow it to continue to innovate in ways of providing an increasing array of novelties to their growing and more demanding tourist consumers. These practices and network building activities increasingly operate *outside of the state* and its institutional and regulatory frameworks. The latter are now less interested in encouraging endogenous rural and sustainable development- at least for the time being.

Also, although we point in both cases to the marginalisation of agri-food and its potential centrality in rural development, it is clear that this fails to disappear completely. It is a central part of the construction of landscape value ('eco-system services') in both regions, and central for the maintenance of ecological bio-diversity. *But it is not, at the moment, or indeed in the foreseeable future being valorised as such.* However, there are real generational and reproductive vulnerabilities on the social and economic fabric of multi-functional family farming in both regions, as family occupancy ages and actual farm-derived income continues to fall.

If we are in Europe to manage the post-carbon transition we will have to devise ways of re-valorising the socio-ecological infrastructures upon which it depends. The trends in these two rural regions, at either ends of the UK archipelago, suggest that the combinational effects of declines in multi-functional agri-food support, on the one hand, and a neo-liberalised retraction of non-agricultural rural development support on the other, are providing a potential and chaotic *new governance squeeze* which is likely to severely reduce the massive, but latent adaptive capacity embedded in the rural eco-economy. One implication is therefore that we need to create new and more reflexive pathways for good governance so as to harness this potential if we are to protect and build resilient rural communities.

Indeed, a more multi-functional governance and policy-based approach, based upon creating conditions for the eco-economic rural web to flourish needs to find ways of

harmonising different aspects of the post-carbon landscape such that it's various segments (energy, tourism, agriculture, creative industries etc) can work in synergy with one another. This is very much what the Devon Farms Network is trying to do, but largely outside governance frameworks, and at considerable (potentially unsustainable) self-exploitative cost to themselves. Such fragmented and competing conditions as those revealed in both case study areas are unlikely to be sufficiently capable of meeting the new national and global demands for food security which have gained prominence on the political agenda since our earlier phases of field work.

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