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Citation for final published version:

Marsden, Terry 2016. Exploring the rural eco-economy: beyond neoliberalism. *Sociologia Ruralis* 56 (4) , pp. 597-615. 10.1111/soru.12139 file

Publishers page: <http://dx.doi.org/10.1111/soru.12139> <<http://dx.doi.org/10.1111/soru.12139>>

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Exploring the rural eco-economy ~~and sustaina~~: beyond neoliberalism.

Terry Marsden.

Abstract

Rural areas become central sites for the development of the post-carbon transition, yet this is a highly contested and contingent process whereby neo-liberal models of development and framings compete with the emergence of the alternative circular eco-economy. The paper argues for a grounded conceptual and empirical approach in tracing this overall process of sustainable place-making. It explores three key highly contested dimensions: reflexive governance, distributed eco-economies, and re-financialisation, arguing that such explorations are critical in developing more sustainable rural-urban functionalities for the necessary post- carbon and post-neoliberal transition.

1. Introduction: Neo-liberalism, rural development and contested sustainabilities: ~~an approach to unruly capitalism.~~

A key lesson we are learning in the critical social science of the environment field and , more specifically with regard to rural development, is that the steps, transitions and pathways towards a 'post carbon' economy are both highly contested and volatile to backwards ~~as well as forward~~ swings. There is no doubt that overall, this will have to be the way the world evolves (not least post the recent Paris summit, [COP21](#), 2015; and in line with the ambitious Sustainable Development Goals (SDGs)). But what we are witnessing- and especially since the combined retrenchment ~~of the~~ (food, fuel, financial and fiscal crisis (FFFF) of 2007-8 ~~--~~ is the contested unfolding of revised and reinvigorated claims and framings around 'sustainability and 'sustainable development'. This is such that a key task for scholars now is to critically unravel these contested framings made by combinations of corporate, state, civic and other economic and political actors and institutions.

Some ~~sceptics might might~~ ~~arguesay~~ that because of this broad spectrum of framings in the usage, and indeed what we might regard as the appropriation and co-option of the [sustainability](#) concept, that ~~it's~~ currency becomes weakened and less relevant to guiding and enacting change and the necessary transitions ([see for example, Roston \(2016\)-](#) I disagree with that stance here, arguing that it is now timely and critical to develop more robust and co-produced sustainable intentionalities across our governance, policy, economic and civic arenas; and indeed to progress a 'post-normal' sustainability science of which the rural holds a central place-making element (see Marsden and Farioli, 2015). In enacting this I, with several colleagues have over recent years attempted to frame these debates with reference to agri-food and rural development in the dialectics playing out ~~tr~~ between the 'bio-economy' and the 'eco-economy' (see Kitchen and Marsden, 2009; 2011; Horlings and Marsden , 2014; Marsden, in press). This endeavour has not just been designed to unleash or inflect yet another blanket oppositional binary upon the rural sociological or wider environmental studies field. Rather, the aim has been to begin to tease out, in fine-grained and complex ways, ~~how some of ways in which~~ combinations of economic, policy, governance, technological and (not least) scientific interests are reacting to and managing the FFFF crisis that has unfolded. There are

important dimensions of this relatively new 'battlefield of knowledge' (Long and Long, 1992) that need to be expanded upon and developed in this paper.

First, and particularly since 2007-8, I wish to argue that rural areas and ~~their~~ regions ~~globally~~, and indeed once again at critical transition points in the historical evolution of modern capitalism (see Moore, 2010~~±~~), have become a major fulcrum and stage for more intensification of these sustainable contestations, and are likely to continue to be so.

Second, they are also, partly as a result likely to hold a central part of the overall post-carbon solutions and outcomes of these sustainable contestations.

Third, the enactment of these contestations in the global rural domain, and especially how they condition new sets of spatial relationships and functionalities with the urban and con-urbanisation processes, pressage the possibilities for a ~~more~~ post-neoliberal form of experimentation and innovation, which is guided by a new set of normative and policy principles.

Fourth, ~~and despite the continuing growth of the 'consumption countryside', because~~ rural areas and their practices and economies still rely significantly upon the transformation of nature (farming, forestry, energy, aquatic etc.); ~~Now in an increasingly contested-a-contested~~ post-carbon context, when the competitive search ~~intensifies on~~ for bio-spherical solutions for continuing modernity (see Smil, 2013), their ~~ecobio~~-economies ~~and, indeed the broader shift towards a spatial bio-politics,~~ become a key potential driver for real sustainability transitions. Hence rural areas and their new interfaces with the urban are becoming key sites for understanding and delivering the transformations necessary for post-carbon pathways.

The 'site' of the rural then, I wish to argue here, becomes now post 2007-8, and into the foreseeable future, *a key site of contested sustainability transitions*; and as such it becomes a renewed focus for an engaged and post-normal sustainability science. ~~This main aim of this paper explores-proposes~~ three key areas of conceptual and ~~grounded-practical~~ development which are needed to begin to ~~progress-move forward these contested- these~~ sustainable transitions in ways which enhance and mainstream the rural-urban eco-economy. ~~This is a~~ An eco- economy which will not only be more adept at sustaining vibrant rural communities and places, but one which will provide the revised ~~socio-ecological~~ functions for the growing and indeed dominant cosmopolitan arenas in which most people live. ~~Here there are some~~ As with historical parallels with the first phase of rapid and carbonised industrialisation and urbanisation in the mid19th century Europe; when questions of food, energy and health security became prominent concerns- we ~~Now~~, as then, we need to debate how we are to re-calibrate the urban and rural in ways which sustain massively increased and resource consuming populations, but drastically reduced, ~~and~~ diminishing and vulnerable natural resources.

Here it will focus upon three key areas which are important building blocks to progress this renewed eco-economic rural agenda: (i) reflexive governance processes and intentionality; (ii) distributed and translocalist place-based systems; (iii) and re-financialisation. These conceptual building blocks begin to partly address the four rural-based centralities and dimensions of sustainability transitions addressed above. Before embarking on this argument it is necessary to make some broader theoretical observations with regard to the perspective developed here on the nature of post-carbon transitions.

2. Transitions in theoretical perspective.

The approach adopted here draws upon but does not stay within the boundaries of what we might regard as macro-theories of transition, so far developed over the past 20 years. I have summarised and critically examined these macro theories elsewhere (see Marsden, 2013; Marsden and Farioli, 2015). Like many I argue that there are many advantages in the careful application of Multi-level transition (MLP) theories and socio-technical systems (Geels, 2004; Kemp, 2000; Grin et al 2010), and in particular their more specific application to agri-food and rural development (see Spaargaren et al 2012; Wiskerke and van der Pleog (2005); and more recently Adams, 2015). Similarly theories of panarchy, resilience and vulnerability (Folke, 2006, Erikson et al 2010; Peck 2005); and again recently Friedmann, 2015); and complexity science and complex adaptive systems (Kauffman (1995; Martin, 2010), are all relevant in providing and provide important launch pads for the conceptual development I embark upon here.

They do so in that they are all clearly grappling with the processes of globalised transition, landscape changes and fundamental feedback mechanisms which make the post-carbon transition far more complex than any assumptions built upon linearity or, indeed bald technological determinism or reductionism. Their particular value to this discussion here is their accommodation of the *combinational power of different sets of actors and institutions* in either bringing about change, or absorbing risks and pressures in ways which create new forms of (often destructive/catalytic) innovation. By these I mean the often synergised ways in which paradigms of development are formed and dialectically progressed around specific policy, state, scientific, economic and community actors and institutions. This has been particularly powerful in the MLP literature and it is not necessary to dwell on it further here.

Building and drawing from these 'macro' theories of transition, I wish to progress *a more grounded socio-spatial approach to contested sustainability transitions* drawing on earlier work in contributing to theories of rural and regional development (see Murdoch et al, 2003; van der Ploeg and Marsden, 2008; Marsden, 2013; Horlings and Marsden, 2014). This body of work emphasises the more contingent social, economic and political regionalisation and differentiation of regions and places, and the new relations and 'equations' which are emerging between urban and rural places (see Franklin and Marsden, 2014).

This is more 'grounded' in the sense also that it counterpoises how new, alternative assemblages or 'niches' are dialectically engaged, through, for instance, the making and breaking of market boundaries, different regulatory and institutional frameworks, different politics and policy frameworks, different science and technological logics, with the more dominant to employ MLP language- socio-technical regimes. This is the approach which has guided our work on the bio-economy and the eco-economy framings. This in avoids ways which does not creating set-up rigid binaries or categories, but instead it uses these organising frameworks to explore the types and forms of contestation between these framings (see Marsden, in press), and how these assemble and shape, at the same time, places and assemblages of social and bio-physical artefacts, techniques, paradigms and practices (Marsden, in press). In addition there is There is also, perhaps more so than in the macro transition theories outlined above, something of a re-enactment of a key causal and rural socio-logical tenet here; that is that *place itself becomes an active agent in shaping economic development through re-ordering and combining social, economic and ecological*

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~~practices, matters in the sense not just of being a passive place to assemble these components, but also to drive them forward as active agents of change and transition.~~ I will return to this point in the conclusion to the paper. Places, thus become shapers of transitions themselves due to their particular combinations of socio-natural assets.

A further grounded central element ~~of this it can be argued to this more grounded and~~ place-based approach to theorising transitions is to recognise that the dominant neo-liberalised 'socio-technical regime' is in itself vulnerable (see Marsden, in press; Bevir, in press); and potentially becoming far more 'decentred'. In fact as some recent accounts have demonstrated it both actively disseminates its vulnerabilities (Brenner and Theodore, 2005) and is, as we shall see later in the paper, increasingly generating its own endogenous forms of vulnerability. As Bonanno (2014:27) argues:

'The limits of neo-liberalism are theoretically clear and empirically evident...existing contradictions make it problematic to argue about the existence of an organised system. Neo-liberalism appears more like a project in crisis, rather than a regime. Yet, and despite claims of economic unsustainability and lack of substantive democracy, neo-liberalism remains the dominant ideology and, in many instances, the preferred political choice of the second decade of the twenty first century'.

In the agri-food and rural development sphere, as Moore (2010) has eloquently depicted, these 'limits' to the current neo-liberal capitalist ecology, are increasingly becoming evident, even though these vulnerabilities, in many ways only lead to a refreshed and accelerated puresuit of a narrow technocratic framing of the intensified bioeconomy (see Goven and Pavone, 2014). The agri-food rural domain becomes therefore, as we shall see below, a contested governmentality domain, whereby as Collier (2009: 88) reminds us:

'One technology of power may provide guiding norms and an orienting telos. But it does not saturate all power relations. Rather it suggests a configurational principle that determines how heterogeneous elements-techniques, institutional arrangements, material form and other technologies of power- are taken up and re-combined.' Such... 'conditions of possibility (95) are situated precisely amid upheaval, in sites of problematisation in which existing forms have lost their coherence and their purchase in addressing present problems, and in which new forms of understanding and acting have been invented'.

In this sense it is theoretically and empirically- now becoming more -legitimate to pose the arrival of a contested evolution of 'post-neoliberalist' processes of governance and practice. ~~For as; for as~~ Hall and Massey (2010:57) contend:

'history moves from one conjuncture to another rather than being an evolutionary flow. And what drives it forward is usually a crisis... crisis are moments of potential change, but the nature of their resolution is not given'.

We can see here then that the arrival of the fundamental and combined FFFF crisis from 2007-8 onwards is leading to new opportunities for both post carbon and post neoliberal forms, but that both are subject to continued backlashes and contestations as the dominant 'socio-technical regime' fight's back and attempts to appropriate these movements. This is why we need to build a more

conceptually and empirically rigorous approach around grounded forms of sustainable place-making.

3. Reflexive governance in unruly and neo-liberal capitalism.

There is increasing evidence from around the world that the development of the eco-economy and its role in sustainable place-making necessitates the development of more reflexive governance systems and processes. As Feindt (2012:5-6) proposes, sustainable transitions require second and third order deliberation, inclusiveness and representation, attracting and using knowledge networks which address the necessary complexity and multiple pathways involved in sustainable development. He argues that different types of policy platforms need to be established at various levels of governance and/or various epistemic backgrounds, in an effort to reflect on and acknowledge their cognitive and normative beliefs, in ways which take account and acknowledge alternative understandings of the problems; in an attempt to integrate multiple approaches to problem solution.

Such reflexive governance assemblages also relate and rely upon a wider vector of scientific knowledge and expertise. Such post-normal science (see Funtowicz and Ravetz (2003) cannot simply rely upon the assumption that there is one answer to a sustainability 'wicked problem'. Rather where risks cannot be quantified, when possible damage is irreversible, where values are disputed and contested, the stakes high and decisions urgent, the application of routine scientific techniques of normal applied science are not sufficient (see also De Schutter and Lenoble (2010). Many of these approaches to governance offer a learning-based approach based around a revised notion of the public interest and inclusion of a variety of expert knowledge and stakeholder groups. One such example is the EU governance frameworks in the fields of corporate governance, institutional frames for markets, Fundamental Social Rights, Healthcare services, global public services and Common goods (see De Schutter and Lenoble, (2010). Other examples concern the area of sustainable food procurement (see Otsuki, 2014; Sonnino et al 2014) in their examples of Brazil), where efforts to promote quality food procurement worked in ways to shape reflexive governance in a decentralised political environment, creating cooperative civic participation and state-engagement. The research identified significant unevenness in application and take up of policies and the need to make improvements in place-based infrastructures, promotion of trans-local cooperation, and the building up of existing informal institutional arrangements. Marsden (2013) argues how the recent raft of national and regional food strategies (for instance in Wales) are examples of at least engaging in processes of reflexive governance, through the assemblage of a wide range of actors and stakeholders; and Anderson reports on the same with respect to the inclusion of a wide range of civic and NGO actors in the global UN body on Food Security (Anderson, 2015).

Indeed, we can see here how some authors are making connections between some direct links between the development of reflexive governance approaches and progressing transition management theory; for instance, with the Dutch government, for instance, (Loorbach, 2010) in terms of its the Dutch national energy transition programme; and more generally around, and sustainable development policy more generally (Meadcroft and Steurer, 2013; Smith and Sterling (2007; Rotmans and Loorbach, 2008).

Whilst the general literature on reflexive governance and sustainability policy has indeed grown over recent years, there have been few attempts to apply it to the agri-food or rural domain. This may of course be because of the dominance of more (first order, market-based) neo-liberalist practices and realities (see Bevir, in press) and, indeed in the variety of ways with which such neo-liberalist governmentalities play themselves out. However, we can see, especially since the crisis of 2007-8 that it did spawn a raft of epistemic and strategic policy reports and multi-level government 'futures' exercises, some of which may have informed government policy making (see for instance, Chatham House, 2009; Foresight (2011)). This lack of consideration is also surprising given that many recent accounts of the alternative food networks literature tend to suggest in their conclusions the relevance of governance and institutional arrangements in the scaling up and out of these initiatives (Blay-Palmer et al 2013). Moreover, we have seen in policy-making circles (not least at EU level) significant emphasis placed upon what we might call strategic futurity, whereby scenario planning and assessment becomes built into policy debates. (e.g EC, 2016).

We can argue that there is considerably more progress to be made with regard to the critical and normative study of reflexive governance frameworks and mechanisms, and the ways in which these begin to mainstream and develop the rural eco-economy. There are at least two important considerations in progressing this agenda.

First, and dialectically, we need to recognise the complex *blockaging processes* which countervailing neo-liberal governmentalities and their technologies of *power put in the way of* reflexive governance processes. Standard neo-liberalised narratives of the economy can envelop emerging and reflexive knowledges of the 'circular economy' (see EU, 2015) for instance in multi-level governance contexts. This is particularly the case in the national UK government since 2010, whereby the earlier raft of policy reports on more integrated food strategy following the 2007-8 crisis were largely shelved and sidelined, by the reassertion of more fragmented and sectoral thinking.¹⁴ This active process of silencing, blockaging and what we might term purposive institutional deafness is an important neo-liberal feature and demonstrates how scholars need to be far more sensitive to economic power translated through neo-liberalist governmentality.

Goven and Pavone (2014) provide a very substantial and Polanyian critique of the OECD's (2009) Bio-economy 2030 report, as well as critiquing much of the science and technology studies literature for its over emphasis upon technological innovation over and above questions of power and its institutional applications. They argue (21-22):

'Like the 'liberal creed,' the bio-economic vision works to overcome resistance to fictitious commodification and to obstruct alternative approaches to defining and meeting needs. However, neo-liberal reshaping of the state since Polanyi's work was written have introduced new obstacles against those attempting to utilise the democratic trappings of the state to protect human communities and the environment against fictitious commodification. These re-shapings include the application of market logic to the state itself; the removal of a range of public activities from potential democratic control; and the shifting of the focus, capacity, and rationality of the state toward international competitiveness. Dramatic increases in inequality and the concentration of wealth have further enhanced the political influence of those who benefit from fictitious

¹⁴See Food Matters report 2010; Foresight, 2011; also recent food poverty reports, Feeding Britain (2015, Fabian Society, (2015); Square Meal, 2014; 'Force fed' (2015) The Food Foundation.

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commodification over those who seek protection from it..... The Bioeconomy to 2030 (OECD, 2009) works to entrench these developments by both promoting further fictitious commodification and by advocating further restriction on the possibility of democratic use of the state to secure the protection against commodification.... One effect of ignoring the underlying causes of the problems for which the Bioeconomy to 2030 (OECD, 2009) promises solutions is to isolate the problem of environmental sustainability from the (unacknowledged) problem of inequality, a move that a number of studies suggest may be effective in splitting coalitions of opposition’.

We can see here then that these active processes of fragmenting, blocking and unacknowledging ~~are~~ part and parcel ~~part~~ of the neo-liberal repertoire to undermine and marginalise reflexive forms of governance. And that ~~it~~ it thus follows that the very unveiling of these ~~se~~ processes becomes an important element in ~~need critical engagement in~~ developing and analysing reflexive governance processes themselves.

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A second additional dimension which needs to be taken into critical consideration in using and progressing the concept of reflexive governance concerns what I will term the *power of intentionality*. Over the past decade or more it has been common for scholars to expand the concept of governance in ways as to incorporate a widening vector of actors and institutions and bodies lying outside strictly governing institutions. This developed rapidly not least in the Anglophone literature on neo-liberalism during the 2000’s as governments, like those in the UK and US, combined market-liberalising strategies with the incorporation of a wider vector of actors and networked governance systems as part of its governmentality. This process has continued and suggests more fluid forms of governance based around networks and time limited projects (see Bevir, 2013; Sjobom et al, 2012).

Echoing Goven and Pavone (2014) again, however, it is important to assess how those networks and associations are actively and dynamically assembled in ways which create effective ~~and at least for a time, and~~ coherent combinations of state, policy ,technology, science, corporate, market and civil interests. ~~These can become into coherent and often~~ ‘fixed’ concrete mobilisations and framings, which can then, in turn, gain and then hold onto and indeed contest relational power. The networks and associations, thereon, are far from being devoid of power, action and , importantly, *intention*. They are far from ‘empty vessels’. They hold and fix power over nature (both human and physical) ~~both~~ over time and space.

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This inherent intentionality, and indeed capacity to act strategically, is a critical and additional dimension of reflexive governance debates, because more and more of these agents and networks of governance, be they state, market or civil society led, are indeed focussing now upon the bio and eco-politics and policies of what we might term ‘natural powers’ (see Marsden and Farioli, 2015). This involves the contested wrestling ~~and~~ ~~at~~ ~~is~~ taking control over aspects and ‘bundles’ of nature so as to intentionally and sometimes strategically transform its features and practices. This extends Foucault’s concepts of bio-power and its technologies, and it recognises- unlike much of Science and Technological Studies (STS) and Actor Network theory- that relational power is both generated and sustained through human induced intentionality and strategy.

By taking this more grounded and humanist conceptual pathway we begin to see how relational power and its natural intentionality of governance becomes the lifeblood of dynamically linking ‘agency’ with unfolding and contingent ‘structures’, ~~as well as overcoming its traditional binary~~

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~~assumptions~~. In this sense, and indeed unlike during much of the modernisation phases of the 20th century, we can no longer exclude or render marginal bio-power or 'natural powers', or their consequences. Reflexive governance of nature and sustainability is-, therefore, not just studying more or proliferations of networks or assemblages and their ever more~~about, more, on indeed proliferations thereof, of networks and more~~ fluid associations and coalitions *for their own sake*, however important and relevant these are.

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It is crucially also about how these multi-plex and combinational governance interests-not least in their modus of science and its framings of rationality- intentionally mobilise, institutionalise and then render marginal their actively opposed and alternative framings. This is the new contested 'natural powers' dialectic between what we have termed the bio-economy and the eco-economy. Sustainability, not least in the agri-food and rural arena, provides now a relatively unmapped but ~~central~~central political and governance terrain upon which these active contestations and intentionalities are unfolded and played out.

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4. Towards a distributed rural eco-economy.

A key aspect of reflexive governance systems to address as they assemble and re-assemble their intentionalities concerns how to foster more equally and functionally distributed systems of production, consumption and service provision in rural areas, and indeed between rural areas and urban places. This is also now becoming a critical aspect of sustainable place-making in rural areas, for as we are all too aware they have in general terms been subjected to a secular decline in their infrastructures during the neo-liberal governance period, and despite the vestiges of EU rural and regional development policy attempting to stem the tide. As we see below, and especially again since the 2007-8 period of crisis, ~~there~~is evidence that this process of centralisation (rather than distribution) has continued, (see Paddock and Marsden, 2015) at the same time that more sustainable 'rural web/network' developments have been evolving (see Milone and Ventura (2010), Horlings and Marsden, 2014). Hence this dual and co-evolving process of struggle for sustainable rural development infrastructures (both physical, social and digital) is now a major feature in many rural areas. And it becomes a key touchstone for any effective reflexive rural policy process which aims to progress sustainable place-making.

Despite the pronouncements over the last decade by bodies like the OECD (2009; 2013) about the dawn of the new multi-functional rural development paradigm (NRDP), and the development of new effective webs of rural development (see van der ~~Ploeg~~Ploeg and Marsden, 2008), the crisis of 2007-8, and in particular its reactions by some governments, has meant that the process of centralisation in many rural areas has been re-enforced. Our longitudinal research in rural Devon and Shetland for instance over the past decade (Paddock and Marsden, 2015) has demonstrated how the growth of the rural web- combinations of social, sustainability and physical infrastructures built around new or revised eco-economic initiatives and local branding and production (~~see Horlings and Marsden, 2014~~) have come under severe pressure from renewed concentration processes. These are associated with the continued cost-price squeezes placed upon primary production and processing in rural areas (not least food and forestry businesses), but also the further centralisation of service infrastructures (schools, hospitals, shops, legal services, transport) brought in by local authority austerity measures.

This has severely curtailed ~~NRDP its~~ development and expansion. We found, moreover, that cut backs in public support for distributed rural services and functions was also re-enforced by an emerging and dominating policy intentionality associated with urban-based agglomeration and spatial interpretations of urban-based efficiencies through 'economies of scale' arguments ([Hildreth and Bailey \(2013\)](#); [Krugman, 1998](#)). In the UK since 2010, this concentration logic has been dominant in governance systems whereby the emphasis has been upon spatial concentration of function and services, the further concentration of buying power in food and energy systems; feed-in tariffs and retailer-led contracting; further centralisation and corporatisation of science and R&D, and an enhanced assumption that rural areas are there to provide an increasingly commodified range of 'eco-system services' for the increasingly 'smart' city regions ([Slack and Cote, 2014](#); [Rodriguez-Pose and Gill, \(2004\)](#)).

This particular centralisation logic has tended to at least curtail many rural areas in their traditional and new rural development paradigm role of providing a range of multi-functional services from a range of land-based businesses across the food, forestry and tourism sectors. Rural bodies have struggled to convince many politicians facing swinging public sector cuts since 2010 that they are indeed the providers of a range of often invisible distributed services. The Brecon Beacons National Park, for instance, in South Wales provides 90% of water services for the neighbouring 'city-regions' of Cardiff and 78% for Swansea. The three National Parks in Wales provide £557 million gross value added (1.2% of Wales economy), 12 million visitors and 13,000 jobs in Wales, whilst 40% of total ~~W~~welsh employment is linked to the small scale, eco-economy; an economy which is highly dispersed and distributed. [Concentration and agglomerative logics tend to exclude such eco-economic contributions.](#)

Under these countervailing conditions it is necessary for rural development actors to attempt to develop more resilient and distributed businesses very much from their own social and physical resources. In Finland and in the Netherlands, these systems have been more effectively promoted (see [Sitra, 2011](#)) around attempting to design bio-economy value networks in and across a range of villages and small communities, which counter the centralising tendencies. [The development of eco-villages in rural Finland are one set of examples.](#) The transition to the post carbon eco-economy provides a strong opportunity to link spatially and locally, for instance, 'circular' energy, food, and waste systems (see [Barbero et al, 2010](#); [IIIEE, \(2009\)](#)). [Johansson et al \(2005\)](#) outline the architecture of more distributed economies as part of more sustainable regional development around the bio-economy. And this work also echoes that of [Adamson and Lang \(2014\)](#) in their 'deep place' studies which ~~place a~~ [give](#) renewed emphasis upon locally based food, energy, care services and transport systems as part and parcel to sustainable regeneration of former mining communities. The recently completed EU funded Rural Alliances programme has actively supported over 70 local and translocal alliances between businesses and community groups and developed innovative local interfaces with devolved local municipality systems (see [Rural Alliances, 2015](#)).

One area of significant development here is creating new local and regional financial re-engineering schemes and initiatives, such as in the Netherlands ([het Groene Woud](#)) creating regional accounts with banks for local sustainable business development; community share schemes and community-based energy initiatives on farms (in Brecon Beacons); and a variety of time banking and crowd sourcing initiatives. Currently it is difficult to assess whether such schemes are genuinely 'post- neo liberal' in character, but they have emerged out of the neo-liberal crisis, and they tend to prosper

when national, regional and local governments are capable of decentralising functions, and often passing control and responsibility back to the local community and networks of local actors ([Rural Alliances, 2015](#)).

The development of *sustainable distributed systems* as a counterforce to the processes of centralisation of both power and facilities become a key mechanism and opportunity for rural areas as the post carbon transition occurs. This requires mainstreaming new innovative 'quadruple helix' models of regional innovation and development, whereby ~~for a and~~ platforms are created in rural areas and small towns to bring together business, community and municipal actors. Regional and rural development funding to kick start these initiatives becomes critical.

5. Re-financialisation and the emergence of 'stranded assets': opportunities and threats.

In order to scale- out more circular eco-economic initiatives in rural areas, as a central part of the post-carbon transition, and to truly embed the ecological 'circular economy' as part of this (see EU, 2015), it will be necessary to develop a far more diverse financial and investment framework in which rural areas fit. As with other branches of the economy over the past decade, and despite the deepening financial and fiscal crisis, we have continued to see the intense concentration of finance based largely around global cities. It is also necessary to recognise, however, that many rural areas, especially through investment surges in agricultural and estate land, have also been recipients of high levels of privatised investment over the past decade, as many rural regions and resources have been seen to be 'safe-havens' for large amounts of financialised and surplus cash (see Fairburn, 2014). This, ~~as we know, and~~ is now well documented, ~~something of and~~ a global phenomenon ('land grabbing etc). The 'land rush' can be interpreted as a sign of the internal contradictions of neo-liberalism as intensifying, even at the same time as they become even more vociferously articulated and implemented. McMichael (2012:681) interprets the land rush globally as evidence of a crisis in the neo-liberal globalisation project seeing it as 'a short term attempt to resolve the contradictions of rising agro- industrial costs on the one hand, and rising (food) costs of reproduction of labour on the other, but under conditions of agri-business as usual that will only accelerate ecological and social contradictions'. Such proposed solutions to this crisis have also extended neo-liberalisation into new areas. Fairburn (2014) calls these a package of 'green grabs'; for the purposes of land for carbon trading and other environmental 'eco-system services', hinging of course on the further and centralised commodification of nature, and the assumptions that neo-liberalised market forces are the main remedy for solving complex environmental problems like climate mitigation and adaptation.

There is no doubt that during and after the FFFF crises of 2007-8 'financialisation' of land and wider natural resources continued to be a major structural driver for rural and agri-food restructuring, as investors were encouraged by the new found scarcities in these resources to invest and create high financial returns by colonising new areas of land. However, there are some important qualifiers to this process when we consider the European context. This was by far not just a dynamic which involved the agri food sector, as it was also intimately tied to the wider bio-economic nexus combination of energy and water resources. In advanced European economies it has also been a more subtle and nuanced process, whereby private and corporate investors have cash- purchased rural land resources as positional consumption and amenity goods. This is true, for instance in the

UK over the past decade, whereby agricultural and forestry land prices have increased well above general inflation rates (and thus been seen as convenient financialised assets) by corporate and private investors, not only by means of their agricultural value, but for their amenity and financialised attractions.

In many parts of Europe then rural land and resource financialisation has been experiencing another intensive phase, and this has been leading, in many ways to a further contradiction in the neo-liberalising countryside: that of the relative high levels of investment being attracted to many rural areas, but the fact that this investment is highly concentrated and exclusive both in ownership and use. This process of financialised concentration of investments in European (and indeed as Fairburn shows in the US) rural areas has continued in ways which have often exacerbated and blocked the necessary transitions towards sustainable rural development which are needed. In many ways in many European rural areas, it is not the overall lack of investment which is a major barrier to fostering sustainable rural development; rather, it is the fact that the type of investment has been highly concentrated and managed in ways as to create private surpluses over community and public benefits.

This process of concentrated and asymmetrical privatised investment in rural areas has created a major and exacerbating problem of financial illiquidity. In short, it is often very difficult to unlock potential sources of local and regional finance for development and especially low /post carbon projects in the agri-food or rural energy generation (more circular economy) sectors. This is where community share, credit unions and crowdsourcing initiatives become particularly critical in ~~unlocking-releasing~~ what is often large and latent amounts of equity which are tied up in rural properties (houses, estates, farms, woodlands). We can argue that this creation of a new 'financial ecology' in rural areas, whereby increased amounts of capital can be innovatively released for investment in the eco-economy, now becomes a critical element of the OECD's 'new rural paradigm'.

This requires the application in many cases of the other two areas so far discussed here: reflexive governance mechanisms and an emphasis upon more distributed systems of running rural economies. One model (see Rural Alliances, 2015) are Cooperative revenue models. Rural business – led approaches involving public-private-community partnerships can be encouraged by municipalities who are prepared to devolve control of some of their (energy generation, public facilities) services over ~~the to~~ local community partnerships. In some cases, for example in the Brecon Beacons National Park, some rural communities are net generators of local revenue now by developing a community revenue model, whereby for example a small hydro-power project is developed by a community energy cooperative. The return on the investment is agreed to be used by the community to fund electric car sharing, and the ~~return-income~~ from ~~their-there~~ will ~~thenus~~ be ~~returned-and~~ re-invested in other sustainability initiatives. This will only work if the revenues are invested in sustainable cooperatives and profitable schemes. A municipality which incorporates and appropriates such returns in their annual budgeting processes can end up destroying the initiative, as the funds disappear and are not available for future investment. Another condition is that local entrepreneurs are repeatedly placed in a position to cooperate with these initiatives.

Hoek (2014) in his book 'Doing Business in the New economy' (Rural Alliances, 2015:15) advocates that these decentralised and collaborative processes require transactional, transformational and circular leadership. A key principle becomes not 'what can be earned with this transaction?' The new

approach is ‘what can we also make possible with this funding?’ ‘We are looking more and more to ‘slow’ business cases. Earning fast leads to high transaction costs and interest rates. By sharing the risk with those who add and use value, e.g via crowdfunding, lower costs are possible. Borrowed capital becomes limited. There is a growing focus on how stakeholders themselves can contribute value and knowledge as well as some equity.

Such a paradigm shift in thinking regarding more decentred and de-centralised financing of the new rural eco/circular economy is now clearly emerging. And it is taking place amidst financial and fiscal backcloth which could potentially radically speed up and scale up its development. There are some key governance and policy levers here which we are learning from our comparative research in recent projects. (i) Confidence and reflexivity on the part of both local and regional governance bodies is a key regulatory need. We see that this involves allowing local and regional community partnerships, not only to take the risks and responsibilities of running their community activities, businesses and services, but also at least some of the revenue; which cant then get recycled into associated local sustainability ventures. (ii) More decentred and distributed flexibility in the use and allocation of existing CAP funding (especially pillar 2, the rural development programmes), and regional development funding, would also give a considerable impetus for the rolling and scaling out of these community led schemes. (iii) More liberalised ‘feed in’ and procurement policies on the part of both state based and corporate downstream actors (both in food processing, retailing and catering sectors, and in the energy generators) would also open up wider and more sustainable markets for the more collaborative rural circular economy. This in turn would also encourage more local equity release and investment from a wider group of cash and equity rich rural and urban residents. (iv) Currently local community energy schemes, for instance, face significant time and financial risks dealing with existing and outdated environmental and planning regulations. These risks and costs become major obstacles in sustainable community development projects. The idea of new types of ‘rural enterprise zones’ and local rural enterprise partnerships (see UK Govt, july 2015) may be enlightened place-base initiatives, whereby these regulatory risks can be more streamlined and geared to the broader objectives of progressing the rural low carbon transition.

The unlocking of these blockages here would seem to be a key way in which the rural circular economy could be mainstreamed in- post –neoliberal ways.

6. Conclusions: post-neo-liberal uneven development and ‘the tragedy of the horizons’

The evidence suggests that the rapid and intense (carbon-based) financialisation which proceeded the FFFF crises of 2007-8 is now beginning to create a new set of conditions which can be summarised as ‘Stranded assets’ (see figure 1 for some of the main features). Mark Carney (2015), the current Governor of the Bank of England and Chair of the global Financial Stability Board, among many other financiers, has recently warned investment analysts, bankers and insurance leaders that they need now to plan for the climate change induced ‘tragedy of the horizons’ (p1). This makes a plea for not only the accommodation of the post-carbon economy (both industrial and financial), but also one which embraces, ‘long term capitalism’ which plans for the macro shifts which are before us. [FIGURE 1 HERE]

The recent pronouncements of these warnings by the very financial sector which has ~~indeed~~ been responsible for the ensuing crisis is, indeed yet another new element of the contradictions and ironies inherent in the contemporary neo-liberal regime (McMichael, 2012; Wolf and Bonanno, 2014). But to say this is not sufficient analytically, as I have indeed attempted to show here by developing a more grounded conceptual framework which can contribute to not only understanding but hopefully progressing a post-carbon transition which places at its centre of modernity the rural-regional eco-economy.

As Caldicott et al (2014) have demonstrated (~~see figure 1~~) the realisation and ~~indeed~~ predictions of growth in financialised and carbon-based 'stranded assets' is both generalised across primary resource sectors and also specific to the agri-food system (Table 1). A combination of regulatory and natural pressures, from anti GM (~~genetic modification~~) movements and whole sale national ~~import~~ boycott's (nb, Russia recently), together with climate change effects, growing restrictions on carbon emissions and 'leave it in the ground' and 'carbon tracker' campaigns (see McGlade and Ekins et al, 2014), ~~are~~ currently beginning to change the transitional 'landscape' in which a substantial proportion of the world's shares and investment depend. Currently it is not possible to predict how far or how quick these changes in financial investment strategy will go, but growing institutional as well as some sovereign wealth funds divestments (~~such as Norway's sovereign wealth fund July 2015; Morgan Stanley, Citi group and Wells Fargo and Co (Loch, 2016) see Norway, 2014~~) are currently notable.

In the context of the arguments developed in this paper ~~where I have identified some key what might be regarded as which has identified some of the~~ 'pull' factors for mainstreaming the post carbon transition, and ~~more specifically within its~~ the rural eco-economy, the ~~emergence_rise~~ of stranded asset investment vulnerability ~~in the carbon-based system~~ may indeed act as a potential *push factor in mainstreaming investments* into low or no carbon and the more circular economy. The picture is of course mixed and contested, and it is also contingent; as we see not least in China, (Ye and Fu, 2015) where state policies are rapidly expanding investments in solar energy and its associated technologies at the same time that vast swathes of rural populations are being accommodated in carbon-based con_urbanisation and the depletion of fertile agricultural lands.

These co-evolving and parallel/competing trends justify, ~~I would argue,~~ the need to further a spatially comparative and temporally grounded conceptual and empirical approach to the contested transitions before us. These are highly spatially and temporally uneven. And as we have seen this unevenness is associated with a range of both exogenous and endogenous factors. Both sets of factors ~~get_~~are shaped in and through places; and it will be in these places where, ~~through, as we begin to see with some of the examples I have cited here,~~ the careful re-calibration of both natural, social and economic sets of assets occurs. Through these careful re-calibrations many rural communities are beginning to build up social and natural forms of resilience to the variety of exogenous vulnerabilities which confront them. This involves, as we know, the creation of new forms of bridging and bonding social capital, and it stimulates new collaborative re-definitions of the natural circular economy potentialities which surround them. A former woodland or heath land with running streams becomes more than an isolated beauty spot, once small hydro-power turbines can be located in there. The farm becomes more than a gross producer of bulk, low value food commodities for the increasingly distanced processor or retailer, once combinations of tourists and new 'quality food consumers' or care patients can be attracted. That longstanding outcrop of rock

becomes part of a local geo-park and archaeological attraction; that pond for fish farming and that slurry tank the basis of a new anaerobic digestion and bio-gas plant.

Major questions surround, however, ~~er, once we adopt a more spatially and temporally sensitive approach to the post carbon transition~~, how ~~we to~~ understand these ~~post carbon and post-neoliberal~~ processes of uneven development? In many ways this is part-and-parcel of a new agrarian question for the 21st century; which indeed has parallels with that progressed in the 19th and early 20th century. For it is, in many ways, just as wrapped up in the revised recasting and again uneven development of urban and rural relationships and functionalities. Whilst I have here, for analytical reasons focussed on the rural domain, we should be critically aware of the current emergent thinking about how the onset of the circular economy is and will impact upon the 'regenerative' city and town (see World Council, 2013;14). Current neo-liberalised concepts of the 'smart city region' will need to accommodate a broader ~~(and distributed)~~ ecological focus whereby such conceptualisations integrate and plan for a new set of functionalities between the urban and the surrounding rural regions (see Frank and Marsden, in press; Andersson et al in press). We need then to plan for a range and diversity of 'metropolitan countrysides'; ones which are integrated in new ways with regenerative cities.

Here then, and indeed very much in part a result of the uneven processes we are exposing in ~~beginning to trace~~ the development of the post carbon transition, we will need to completely explode the modernist and neo-liberalised myth of the rural-urban divide, ~~and replace it with much more~~. ~~The need to explore the~~ variegated sets of constitutive ~~and combined~~ functionalities based around more reflexive spatial governance, more distributed and circular systems of production and consumption, and by a ~~longer~~-term post neo-liberalised financial and regulatory system which supports place-based sustainable development initiatives and ~~more~~-distributed infrastructure building.

Vulnerabilities in financialisation: The emergence of stranded assets in agri-food

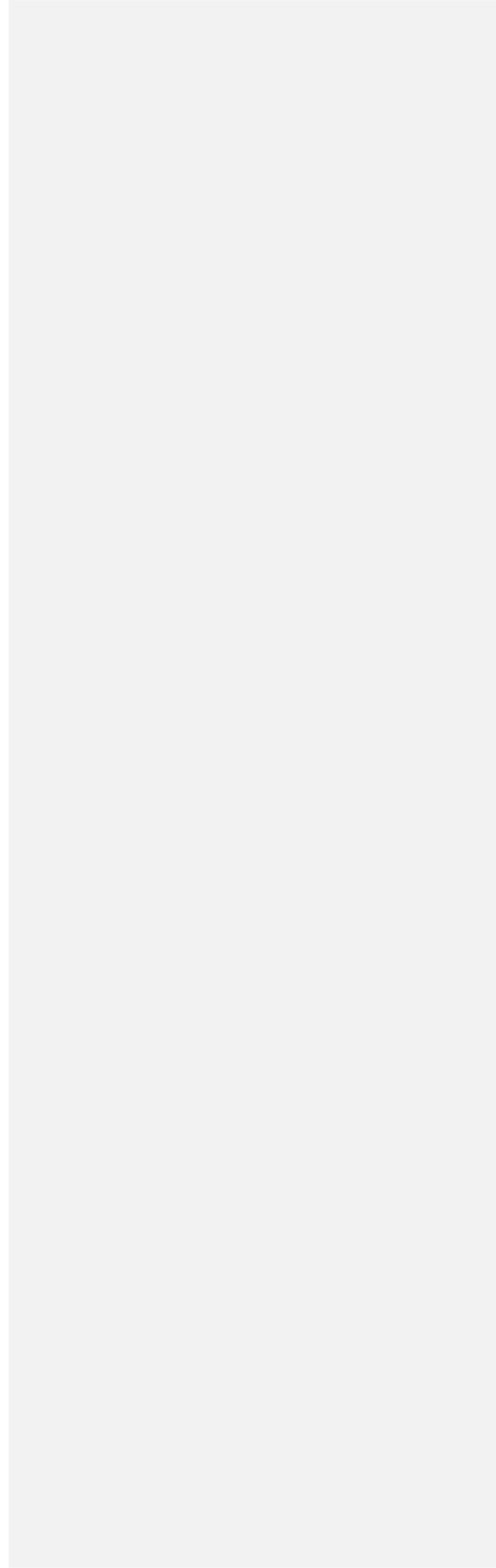
- Stranded assets: 'unanticipated or premature write downs, devaluations or conversions to liabilities' (Caldecott et al, 2014).
- Caused by: one or a combination of :
 - Environmental challenges (climate change, water constraints)
 - Changing resource landscapes (e.g shale gas, phosphate)
 - New government regulations (carbon pricing, air pollution regulation, planning and protected areas)
- Falling clean technology costs (solar PV, onshore/offshore wind/tidal)
- Evolving social norms and ethics and consumer behaviour
- Litigation and changing statutory interpretations (e.g changes in application of existing laws and legislation).
- Open source and cooperative knowledge sharing

Figure 1:-

Stranded assets in Agri food- a new landscape

- Caldecott et al (2013)
- Environment-related risk factors are material and can strand assets throughout the agricultural supply chain. The amount of value potentially at risk is globally significant.
- The potential challenge of stranded assets in agriculture is currently being exacerbated by an ongoing agricultural boom, which is feeding off high commodity prices and poor investment returns elsewhere in the economy, to push farmland values to record highs in many markets.
- ~~Understanding environment-related risks that can induce asset stranding can help investors,~~ businesses and policy makers to develop effective risk-management strategies, which can improve resilience and minimise value risk.
- The regulation and diffusion of bio-tech/GM can drive further asset stranding by:
 - Creating new or more vigorous pests and pathogens
 - Exacerbating the effects of existing pests through hybridisation and related transgenic organisms
 - Harm to non-target species, such as soil organisms, non-pest insects, birds and other fauna
 - Disruption of biotic communities, including agro-eco-systems
 - Irreparable loss or changes in species diversity or genetic diversity with species.

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⁵[See Food Matters report 2010; Foresight, 2011; also recent food poverty reports, Feeding Britain \(2015, Fabian Society, \(2015\); Square Meal, 2014; 'Force-fed' \(2015\) The Food Foundation.](#)