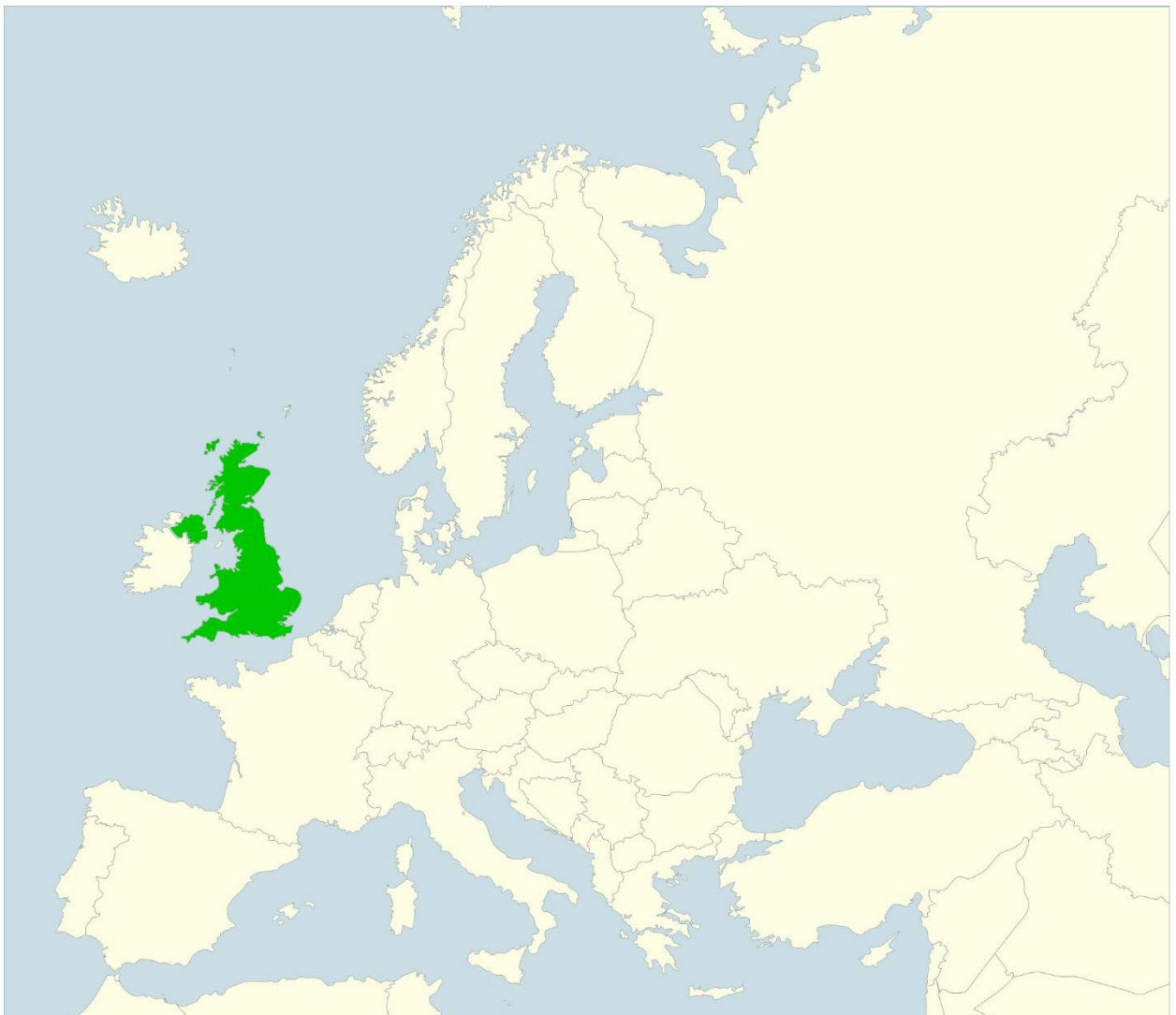


DELIVERING ON THE CONCEPT OF SMART VILLAGES – IN SEARCH OF AN ENABLING THEORY

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Abstract: Smart villages have been increasingly heralded as a development strategy for the European countryside but with no clear understanding as to what comprises a smart village. Frequently, commentators associate smartness with quality of IT infrastructure and the ability to use it. An alternative perspective argues that the smartness can be better understood as a phenomenon associated with self-organised, bottom-up community action that either addresses the weaknesses of both state and market to contribute to local people's wellbeing or exploits emergent opportunities through collective means. Using Scotland as an example, policy architectures can now be seen to be explicitly designed to support bottom-up community action. This paper explores this alternative notion of smartness based on communities' capacities to self-organise and deliver a range of developments that support wellbeing and resilience and explores some of the challenges arising from this approach.

Key words: Smart villages, social innovation, social capital, Scotland

1. Introduction

The “emerging concept” (European Commission, undated) of smart villages has been actively promoted by the European Commission since around 2017 to describe a developing thematic policy priority.² The most recent proposals for the future of the CAP (European Commission 2018 para 16) promote the development of smart villages across Europe. Two rather separate discourses frame the thinking and policy development around smart villages. First, the idea of smart villages is framed by the presence of high-speed broadband and the application of wider digital technologies to support business innovation and wider community development. The Bled Declaration (2018) strongly emphasises this digital dimension and the ENRD (2018a:32) argues that “broadband infrastructures, the availability of digital services and digital literacy are among the potential gaps that need to be filled on the road to smart villages”. Second, smart villages are seen as communities which build on the human and social capital of their inhabitants and local assets to support their development. Although Agricultural Commissioner Hogan (2018: 2) has stated that “smart villages are about people- they are about rural communities taking the initiative to find practical solutions to challenges and make the most of new opportunities,” often smartness is couched in terms of the availability and ability to use a robust digital infrastructure, with many references to a need for high speed broadband and IT-based solutions to a range of rural problems. Elsewhere, the Commissioner has argued for an “agri-tech revolution” and the use of advanced ICT at all stages in the food chain on the farm, through to processing and retailing.”³ This would cover not just precision farming in the arable sector but every facet of farming from livestock enterprises to viticulture. Broadband rollout to “not spots” and improvements in broadband speed are seen by others as an essential enabling infrastructure development to improve rural business connectivity and improve the quality of life (Skerratt 2010). This dualistic characterisation of smart villages comprises a chaotic conception (Sayer 1984) which is a product of neoliberal thinking about innovation and specialisation and communitarian thinking about collaborative action. Can one have a smart village with very poor broadband services? Or, is the right mix of social capital a sufficient defining characteristic?

The idea of smart villages is connected to the idea of smart specialisation, which has been explored in a rural context by Naldi et al. (2015) and Teräs et al. (2015), who question whether the village is the appropriate spatial scale to create the hubs of knowledge and innovation which underpin smart growth. Smart villages are also intimately connected to the concept of social innovation (ENRD 2018b). Social innovation is regarded as central to the recovery of the European economy in the aftermath of the economic crisis (Barroso, 2009), although the term is often considered to be weakly conceptualised (Polle and Ville, 2009: 70; Benneworth et al.,

² The term “smart villages” has been used in India for rather longer than in Europe

³ <https://www.euractiv.com/section/agriculture-food/news/e-agriculture-could-save-eu-farmers-time-and-money/>

2014; Marques et al., 2018), despite which, and as is also the case with smart villages, it has been rapidly adopted as a component of mainstream policy rhetoric, although it is missing from the most recent CAP proposals (European Commission 2018). A smart village could thus be thought of as one that has confronted developmental challenges successfully to increase its resilience, often using social innovation as for the basis of such practices and ventures.

Smart villages are loosely used as a descriptor for communities which have both strong human and social capital and good digital connectivity and whose capacity to deliver innovative solutions is high. The implied spatial scale is normally the physical community – the village and its hinterland – and there are strong implications in the rhetoric surrounding smart villages that smartness is a kind of collective property associated with successful innovation.⁴ This implies that there must be un-smart or less smart villages. If such communities exist, and few would disagree that there are differences in overall socioeconomic performance between communities, arguably the researcher's task should be to identify the features that differentiate one category from the other.

Recent studies of socio-economic performance across rural Europe show that there are very major differences from one rural area to another. In their study on statistics in rural areas of the EU, Eurostat (2017) show how rural areas in 12 countries of southern and eastern Europe are at greater risk of social exclusion in rural rather than urban areas, whereas the opposite is the case in several countries including the UK, Germany, Austria, the Netherlands, Denmark and Belgium with the balance being about the same in the residual countries. Further analysis of rural socio-economic performance across Europe shows a very wide range of performance with rural areas of some countries outperforming urban areas on some variables but significantly underperforming in other countries. In general, there is a strong spatial dimension to socio-economic performance, whereby rural areas close to prosperous town and cities are among the higher performing communities. This implies that structural forces are shaping rural socio-economic performance and that smartness cannot effectively be assessed in relation to a given level of socioeconomic development but should be assessed with respect to relative socio-economic outcomes where one community outperforms other similar communities.

This paper explores the concept of smart villages in relation to Scottish rural development, where there has been a marked shift of emphasis from regional or sub-regional partnership as the primary means of support for integrated rural development towards a much more community-centred, approach, in which recently designed and enacted policy architecture enables communities to shape their own development outcomes at local level using support drawn down from various policies. However, the term smart villages is completely absent. Community empowerment policies all tend to lead to geographical communities being identified as the key agent, often through community development trusts, community land trusts or a range of other third sector institutional forms. This paper first explores how smart villages might connect to theoretical explanations of differential socio-economic performance, then examines the Scottish context, including changing patterns and scales of intervention, reviews the range of community-led initiatives and considers the necessary preconditions for smart villages to emerge, before drawing some interim conclusions.

Theoretical background to differential economic performance

A number of different theoretical positions have been used to explain the differential development of rural areas. They are explored in order to seek to connect the idea of smart villages to one or more theoretical constructs.

Centre-periphery theory has long been used (e.g., Myrdal 1957) to explain how capitalist development tends to result in concentrations of growth in cores and a downward spiral of underdevelopment in peripheries. Myrdal argued that policy intervention was essential to break this cycle. It has been widely applied to explain the patterns of development, especially in relation to the Highlands and Islands area. The underdevelopment of rural Scotland has also been framed in a conception of internal colonialism (Hechter, 1975), which suggests a weak periphery exploited

⁴ A cluster approach to supporting smart villages has been developed in Alentejo, Portugal (see Nogueira, 2018).

by a capitalist core. However, both theories fail to explain more local levels of variation in economic performance evident in marginal regions.

Shift-share analysis explores changes in economic structure in relation to a structural component (made up of the industrial composition and its sector specific employment changes) and a differential component based on the unexplained variance in employment change. The implied hypothesis is one of path dependency arising from a specific industrial mix. An analysis of Scotland by Travel to Work Areas (TTWAs) shows considerable unexplained variations, sometimes between two neighbouring TTWAs. Although based on observations across a whole range of communities within a TTWA, could those communities with significant positive unexplained variance in employment growth be regarded as smart? Unfortunately, though shift share analysis may yield evidence of smartness it gives no clues or hypotheses to explain those differences.

Florida's (2002) work on the creative class has been applied to rural Scotland by Slee et al. (2015) and elsewhere in rural Europe by Escalona-Orcao et al. (2016). Drawing on McGranahan and Wojan's redefinition of the creative class in the US (2007a; 2007b), it can be argued that differences in the size of the creative class in rural areas appear to be associated with differential economic performance. However, it remains unclear as to whether higher levels of development arise because of the presence of a larger creative class or whether a creative class moves into an area because of its higher levels of economic performance. Nevertheless, the presence of a higher percentage of people in the creative class might reasonably be used as an exploratory hypothesis to examine the relationship between the size of the creative class and smart villages.

Social capital has been identified as a key variable determining the differential economic performance of southern and northern Italy (Putnam, 1993). Where trust and civic engagement are strong, economies outperform compared to areas where trust is weak. Other studies of social capital have emphasised the role of formal and informal networks in building social capital (Coleman 1988). Social innovation can thus be considered as a product of strong social capital where people are willing to collaborate in civil society action, which impacts positively on economic performance. This provides a potential explanation of differential economic performance (i.e., smartness) at micro-level, but as Putnam (1993) notes, social capital sits alongside other forms of capital which themselves are likely to vary over space. Nonetheless, variations in social and human capital and, in particular, differences in linking and bridging social capital, might also constitute exploratory hypotheses that lie behind smart and less smart villages.

The idea of smartness has been transferred from management jargon into something quasi theoretical. It is routinely associated with capacity to innovate and there has been a marked shift away from understanding innovation as an individualistic entrepreneurial activity towards an innovation systems approach (Edquist, 1997). Others have described the network of actors as a triple (Etzkowitz and Leydesdorff, 2000), quadruple or even quintuple helix (Carayannis and Campbell 2010).

A final body of theoretical work (see van der Ploeg and Long, 1993) relates to the theory of endogenous development which explores distinctive traditional production systems as a platform for local development. Now linked to ideas of neo-endogenous development (Ray, 2006), this body of theory challenges the unilinear models of development often advanced and argues that a re-grounding of development of traditional practices and endogenous knowledge can "reboot" development and kick start a positive development trajectory. Arguably, such processes are likely to work best where there are collaborative elements in development practices such as in sharing knowledge and place-based marketing. Smart places are thus those where this endogenous development model has succeeded in raising economic performance above expectations.

Many of these theories converge towards a recognition of significant differences over space, explicable *inter alia*, by structural economic factors, variations in human and social capital and local knowledge. Given these differences, can place-based development (Barca 2009; Barca et al. 2012) be conceptualised as a way of recognising the diversity of possibilities over space and designing regionally or locally nuanced strategies? One need in so doing is to explore the institutional capacity to deliver place-based strategies. Within Europe, there are large variations in regional and municipal administrative architectures (Bachtler, 2010) which, where

regions are rather large may make it more difficult for empowered villages to shape place-based strategies for development.

There is certainly little in the dominant technology-led discourses on smart villages to connect to any of these major theories, other than in linear modernisation theory, which is widely discredited. Indeed, the unilinear modernisation theories which are criticised by van der Ploeg and Long (1993) are considered as largely irrelevant to the remoter and more marginal areas, but are at the heart of the widely advocated digital technology-led model of smart villages. However, the social capital/social innovation discourse does contain strong theoretical roots, well represented in the work of Putnam and others.

The Scottish Context

Over recent years, a number of studies have been conducted into variations in socio-economic performance across rural Scotland (Thomson et al., 2013; Slee et al. 2015; Copus, 2015, Melo and Vellinga 2015). There are generally good data sets of socio-economic indicators down to data-zone level⁵ in Scotland, which allow relatively fine-grained spatial analysis of several aspects of socio-economic performance. Many studies note the generally lower socio-economic performance of remoter and sparsely populated areas (e.g., Wilson and Copus 2018) but poor socio-economic performance is also associated with urban areas and post-industrial areas in central Scotland. Often, studies simply present data, but some explore or reference specific theories or hypotheses. Melo and Vellinga (2015) use shift share analysis to assess the explained and unexplained variance arising from regional variations in the structure of economic activity while Slee et al. (2015) use Florida's ideas of creative class as a possible explanation of differential performance.

To date, potential explanations of Smart villages in Scotland – villages that outperform with respect to expectations – have been couched in terms of the capacity of local actors to effect changes and set against a backcloth of theoretical explanations as to why uneven development occurs. However, a suite of devolved government policies relating to community empowerment and European policies may also have shaped communities' capacity to become smarter. A key lesson from the Scottish examples of smart villages is that those communities with both the cohesion and capacity to engage in community-led place making and to draw down public support have been able to make profound differences to the wellbeing of their citizens.

The overarching purpose of the Scottish Government is “sustainable inclusive economic growth”. In order to achieve that, it seeks to nurture empowered and resilient rural communities which help the Government to deliver the national outcomes it seeks (See Figure 1). These outcomes are specified in the Community Empowerment Act Scotland 2015. By “empowered” the Scottish Government desires that local people are able to help shape actions that improve their community's wellbeing. By resilient, the Scottish Government means it wants local communities to be better able to withstand shocks that could reduce wellbeing and be able to adapt successfully to changed circumstances.

Supporting the achievement of the desired outcomes, there is an overarching economic strategy with a raft of national-level sectoral strategies and frameworks in six identified growth sectors, including food and drink and tourism (both well represented in rural Scotland). Smart specialisation, which is a major strand of post-economic crisis, European thinking (Rosa Pires et al., 2014; Teräs et al. 2015) has been implicit (but is not mentioned in Scotland's Economic Strategy 2015), in delivering that strategy, not least because of the regional concentrations of activity in tourism, food and drink (including whisky). As well as actively promoting growth through innovation, the Scottish strategy also seeks more inclusive growth, which entails reducing social and spatial inequalities. These key sectoral strategies are supplemented by a raft of other strategic documents.

⁵ A datazone comprises between 500 and 1000 people.



Fig 1. The Scottish Government's purpose statement. Source: <http://nationalperformance.gov.scot/>

The Scottish Government has placed considerable weight on more joined up and effective delivery of services by public sector agencies through “community planning” codified in a 2003 Act. Audit Scotland, which checks the efficiency and effectiveness of public expenditures, has been consistently critical of efforts to date and reported that “ten years after community planning was given a statutory basis, CPPs are not able to show that they have had a significant impact in delivering improved outcomes across Scotland” (Audit Scotland 2013:6) and that it was very much “a council-driven exercise” (Audit Scotland 2013:12). The Community Empowerment Act of 2015 seeks to strengthen community planning principles. But Audit Scotland was still reporting recently (Audit Scotland 2016) that the voice of local communities in community planning was still weak.

Rural areas of Scotland and other parts of the UK face similar challenges to many parts of Europe but also have distinctive features. The response to these challenges is shaped by national and international institutions, including policies, as well as collective national values. In Scotland, it has long been recognised that conditions across rural areas vary greatly and that the role of farming and forestry as drivers of rural economies is much reduced compared to 40 or 50 years ago. It is also recognised that remoteness from urban hubs and low population density in much of rural Scotland create particular difficulties in public service provision (e.g. Turbett, 2009).

Scotland has large areas of poor-quality land, many remote rural areas and many islands. In addition to the problems of these “traditional” rural communities, the decline of semi-rural and small-town mining and metal working in central Scotland and textile industries in eastern Scotland has left a declining employment base. Some areas have thus experienced decades of population

decline and declining services. There have been periods when new economic activities have revitalised some communities, especially in relation to energy developments. In the 1950s and 60s, major hydro-electric developments provided large numbers of jobs in remote highland communities and later oil and gas-related developments created many jobs in construction from the 1970s. Tourism emerged as a major employer in some areas from the 1970s. Lifestyle migration into some rural areas has also suppressed the tendency for demographic decline (Stockdale, 2010). But these developments by-passed some communities, leaving them vulnerable to further decline. New technologies in farming and forestry have further reduced the demand for labour in the primary sector.

In the UK, the financial crisis in 2009 ushered in an era of public sector austerity, which has meant that public service providers have faced reduced budgets and have had difficulty in maintaining standards of service delivery. Because a large proportion of municipal budgets come from central government transfers, central government has obligated municipalities to reduce spending. Although the devolved Scottish Government actively opposed UK austerity politics, it fell victim to its consequences as the devolved monies from the UK Government to Scotland were much reduced. Thus, cuts in budgets to libraries, schools, public transport and social care have meant reduced quality of service or closures.

Both the UK generally and Scotland have rather large municipalities both in terms of numbers of people and areas. This has created what some would describe as a “democratic deficit”, with local people feeling distanced from decision making and a sense of alienation from both central and local government (Sinclair 2008). For example, one council area (municipality) – Highland – covers almost a third of the land area of Scotland and over 10% of the land area of the UK. Many LEADER areas mirror municipality boundaries also making them rather large geographical areas containing very diverse conditions within them.

Partly in response to the politics of austerity and partly because Scotland has a more instinctively communitarian set of values, Scotland has focussed on developing a suite of policies to “help communities help themselves.” Some of these policies predate the devolved Scottish Government and several of them have drawn on European funds, especially LEADER and Objective 1 and 5b designation⁶ to deliver support to rural communities and some schemes within the more individualistic support structures of the Rural Development Programme.

Most scenarios of future change predict a growing polarisation in the socio-economic performance between rural areas close to urban centres which are amongst the best performing areas in Scotland (Skerratt 2010; Sanchez-Zamora et al. 2014); and the remoter rural areas, where socio-economic challenges of low incomes and outmigration are concentrated (Copus and Hopkins 2018). In addition, rural or peri-urban areas which have lost major industries, such as the coalfield area of central Scotland and the textile communities of the east also face difficult socio-economic conditions.

2. Changes in rural support policies in Scotland

Two policy models for supporting rural regeneration in Scotland have prevailed, each broadly suited to the circumstances of the time. From the early 1990s, partnership models were widely promoted, in which public sector bodies, the business community and third sector bodies came together, usually at a regional or sub-regional scale, with the aim of regenerating areas through collaborative planning, coupled with drawdown of public support for projects, often aided by a team of amateurs. Sometimes these partnership structures were necessitated by the architecture of European support, including with respect to Objective 1 and objective 5b partnerships and, at a somewhat smaller scale, LEADER. Within the Objective 5b structures, specific local initiatives addressed issues such as farm diversification and the delivery of an enhanced infrastructure to attract tourists. The partnership model remains pertinent. Some councils, such as Aberdeenshire have created independent area partnerships which operate with funding from the council to support local community development. LEADER also remains as a sub-regional scale partnership to drive local development, but over time may have lost some of

⁶ Objective 1 and 5b regions were earlier EU designations of disadvantage, with associated structural fund support.

its capacity to innovate and its early, deep engagement at community level, as it has been drawn closer to municipal governance structures (Lukesch, 2018).

The second model which has gained strength in recent years is one that sees the individual geographical community as the driving force of regeneration, often using community development trusts or other third sector bodies as the main agencies promoting and supporting community-led local development (Revell and Dinnie, 2018). Increasingly, and partly as a consequence of the politics of austerity, the emphasis has rather shifted in Scotland from partnership with municipalities and others at sub-regional scale to local independent third sector bodies that may have become the main drivers of smart village outcomes. Sometimes the agency is a local land trust, but the principal model is the Community Development Trust, which is a charitable trust with the purpose of promoting local development. These have been identified as anchor organisations and provide a hub of expertise and experience which enables them to address specific local needs and design and deliver projects (Henderson et al., 2018).

Community trusts cannot operate in a policy vacuum, so alongside community-level agency, there needs to be a raft of supportive legislation (Esparcia, 2014:4), which can be drawn on to support specific locally tailored actions; and some would add a need for key intermediaries (Hargreaves et al. 2013). In addition, the Scottish Government gives financial support for organisations like the Development Trusts Association, Scotland. In other fields, such as renewable energy and climate change mitigation, national third sector agencies operate under contract to provide support for community level initiatives. This second model carries with it, certain needs: for municipalities and government agencies and third sector support bodies to operate in an enabling role to support local communities; and for communities to develop the skills and capacities to deliver local solutions to the multiple development challenges.

The second, currently dominant model is based on an implicit recognition that there are major limitations on the state's capacity to act caused by austerity politics, which have been imposed on the Scottish Government and which are then passed onto municipalities and other public bodies. Some, like Audit Scotland, note a certain reluctance of the municipal sector to share power. The combined effects of the unequal development and public austerity are that there are some parts of Scotland, from inner urban areas of industrial decline, to declining rural coalfields to remote upland and island communities where there are high levels of social and economic disadvantage.

These two policy models are not mutually exclusive. Indeed, they can and sometimes do articulate, with the partnership structure able to offer support to communities, assisting in project planning and in building capacity in communities by guidance, confidence building and signposting to expertise that can help deliver successful project outcomes. These animation processes have been a core part of the LEADER approach, where the project's officer works up projects with the community and helps manage risk as the project evolves. In some cases, LEADER projects have targeted distinctly disadvantaged communities with limited success (Steiner, 2016). Catalysis by animateurs provides a crucial link between the two models and scales.

The appropriate scale or scales of intervention is not just a Scottish issue (see Naldi et al., 2015 for Europe-wide observations). Over recent decades, the Scottish Government and its predecessor bodies have developed national framework strategies and laws within which regional and local strategies are nested. In one case, specific legislation was passed over 50 years ago to address development challenges in the Highlands and Islands – the most remote and sparsely populated part of Scotland- and the regional development board created was given social as well as economic support functions. It was in this region that the foundation stones for many current types of support for community-led local development were laid down, including support for community land purchase, support for community cooperatives and support for community renewables.

In the 1990s, sub-regional or regional partnerships were invoked as a delivery mechanism for more coordinated rural planning. Bodies such as the Southern Uplands Partnership formed in 1999 provide a typical example of a large regional partnership spanning two council areas. Initially, councils were major supporters but, as public finances have dwindled, most partnerships

are now third sector agencies. As poorer countries entered the EU, so the funding for severely disadvantaged areas shifted eastwards and Scotland's receipts from the structural funds have diminished. As well as the RDPs, support from Europe has also come from the European Social Fund and the European Regional Development Fund. For example, the ESF currently supports an "Aspiring Communities Fund to support community and third sector developments in fragile communities in the Highlands and Island and the ERDF co-finances the Climate Challenge Fund which supports communities to reduce carbon emissions through community-based activities.

The dominant arena of action for community based rural development is now individual communities. Because some rural communities are characterised by a highly dispersed settlement pattern, a small urban hub is often the focus for action in its hinterland, as in Huntly in Aberdeenshire, where a development trust operates in the town and its surrounding rural area.

As the scale of action has become more localised, the supporting policy architecture has become more national and more sectoral, providing a strategic framework and sometimes policy instruments to support community renewable energy, community land acquisition, tourism or food and drink initiatives. This may leave some sectors, particularly social care services, as areas where support remains more regional than national. Further, municipalities feel threatened by loss of power both upwards and downwards. As well as seeking to work for the greater public good, self-preservation may sometimes be guiding some of their actions and decisions.

3. The breadth of community-level activity

The scope of actions that might be undertaken by "smart villages" in Scotland is very broad. The actions at village scale often begin as a response to a specific crisis or opportunity that is seized by local people: the only shop or garage may close; an area of land may be being neglected and new legislation afford the opportunity to acquire it as a community trust; opportunities may exist for community energy projects to create revenue to support local development; a community may establish a festival which gathers strength over the years to become a major tourist attraction. But the challenge in a community may not emanate so much from a crisis event, as from a slow trickle of broadly negative changes, such as outmigration of young people and a steady decline in rural retail or public services.

The triggers are highly varied and so often is the response. Sometimes it is singular as in the case of individual community shops in Shetland which were taken over as village cooperatives as private retailers declined; or as when a community takes control of a tourist attraction or a former municipal caravan site. But in other cases, the skills honed on one project are redeployed on other projects and the community gathers strength as it takes on new challenges and opportunities with a hub agency supporting a series of satellite activities. This is very evident in a community like Portsoy on the Moray Firth coast (Wallace and Beel, forthcoming), or Braemar in the Cairngorms National Park or in many of the Western Isles which have become collective owners of their land resource.

The widening of scope may be critical to increasing the range of positive impacts and outcomes. Rural wellbeing is not one dimensional and neither can the actions and activities be that support it. When a community is thinking about moving beyond a single-issue project, this may be a good time to engage in community planning. Such plans are advisory and have no statutory relevance but have been actively supported by area partnerships and charitable bodies such as CADISPA⁷. They should be an exercise in community engagement, maybe facilitated by an outsider but giving ownership of the process to the community for whom the plan is being developed. Here the opportunities are boundless and limited only by the ambitions and skills of the community. Participatory meetings are often held to stimulate local thinking and prioritise local aspirations needs and actions.

Because renewable energy has been widely developed in rural Scotland, some communities are the beneficiaries of substantial community benefit schemes- effectively a form of informal local tax. The appropriate disbursement of such funds from private sector schemes or of the revenues

⁷ Conservation and Development in Sparsely Populated Areas, an NGO.

arising from community owned schemes, has prompted communities to engage in developing a community plan (indeed this is strongly recommended in draft Scottish Government guidelines). In some cases, a community plan is an obligation before the community fund is passed over to the community group to distribute. There may be a strategic element in community plans, but they will often comprise a set of pragmatic actions to reduce disadvantage and support other third sector activity. In other cases, however, money has remained unused in community funds where communities lack the human resources or desire to use it for local development. These community funds are usually assigned to postcode areas adjacent to renewables developments, but their use is contingent on local organisations developing the capacity to come up with appropriate projects. It remains a work in progress to understand the best means of distributing such funds and there are significant differences between different developers and different municipalities.

4. Enabling conditions for smart villages

Three factors come together to provide the necessary conditions for smart villages to succeed in Scotland. First, it is essential that there is a group of committed activists at community level, with the aspiration and skills to make a difference. Second, there is a need for a supportive architecture of policies and accompanying resources which can be drawn down to help fulfil those aspirations (see also Hargreaves et al., 2013). Third, there is a need for spatial targeting to ensure that the already smart villages do not use their smartness to capture ever more of the public and charitable funds that are on offer.

Smart communities are those with strong human and social capital that have been able to use these human resources, alone or with others to develop villages in a communitarian and collaborative way. The precise form of community-based endeavour has been enormously varied. Often building on experience gained in response to a single issue, communities have been able to develop more comprehensive non-statutory community plans and, using the confidence and skills deployed on one project, have promoted and developed other projects from community-owned energy, to community forestry, to significant community-owned tourist investments to social care initiatives.

The emergence of people with leadership skills to carry forward community-level developments is essential to their success. While sometimes the professional skills of relatively affluent retirees with prior experience in project management and finance may seem essential, it is also clear that long standing residents have or can acquire and develop skills. An orientation towards community rather than individual benefits and outcomes and a capacity to build new networks and design creative solutions seem to be key attributes. A further attribute observable in many smart communities is the presence of individuals with bridging or linking social capital – that have the ability to create linkages to policy actors or third sector funders, which then results in greater drawdown of funds for local projects.

The key is a local third sector institution that operates as an anchor or hub for collective decision making and action. There are now over 200 Community Development Trusts in Scotland. Many now operate arm's length, income-generating enterprises (Zografos, 2007). But over and above these anchors, there are estimated to be 30,000 mostly place-based organisations in Scotland, delivering a diverse array of products and services from land ownership and management, to waste recycling, to social care (including childcare), sports and cultural groups, housing and transport (Scottish Community Alliance, 2016).

The demands on volunteer local actors should not be underestimated. They often have day jobs too and significant community-led projects are very demanding ventures. Sustained effort is often needed to deliver successful community projects. There can be many hurdles to overcome and without persistent effort, successful outcomes are unlikely to be achieved. As well as having community actors with the capacity to reach out to policy actors, it is also essential for municipalities or development agencies to have local development officers who can engage with village communities. Many community groups express frustration at municipal officers who cannot engage with grass roots activities and tend to see the world through siloed and bureaucratic lenses.

The second essential condition is of a set of policies which are conducive to place-based community development. As the arena of action has thus moved from regional or sub-regional scale down to individual communities or clusters of communities, policy has moved from encouraging partnership-based local planning to providing more effective support for community led initiatives. There have been some ground-breaking policy developments. *The 2003 Land Reform Scotland Act*⁸ enabled communities to become collective owners of land resources, to the extent that now 70% of land in the Western isles is now in community ownership. The Community Land Unit and the Community Land Fund have been important enabling institutions with respect to the increase in community land ownership. This has enabled the provision of land for social housing and the development of community owned renewable energy developments. Since 2011, the *Community and Renewable Energy Scheme*⁹ has provided grant and loan finance to communities developing renewables project and it has been crucial in providing bridging finance that could not have come from commercial lenders. Community-owned renewables can be funded by normal sources of finance, but smaller projects may not interest the banks and may need to resort to crowd sourcing which is enabled by the UK-wide *Co-operative and Community Benefit Societies Act 2014*¹⁰. The *Self-directed Support (Scotland) Act 2013*¹¹ makes legislative provisions relating to the arranging of care and support, community care services and children's services to provide a range of choices to people for how they are provided with support. This means that third sector organisations can develop projects where other care providers are failing to deliver effective service.

A key piece of overarching legislation is the *Community Empowerment (Scotland) Act 2015*¹². It consolidates earlier obligations for public sector bodies to develop more integrated strategies but also increases individual communities' powers to act by creating scope for community asset transfer whereby disused public buildings can be transferred to local trusts and increases the scope for community land purchase. It also enhances the possibility for re-energising local democracy through means such as participatory budgeting.

The third need is for spatial targeting which is essential if limited funds are to have maximum impact on the reduction of poverty and inequality. In the past, LEADER was originally targeted at Objective 1 and 5b areas which had identifiable social and economic weaknesses. Its mainstreaming may well have led to some relatively well-off communities drawing down additional support for projects that take funding away from areas of greater need. Some strands of community development support have used spatial targeting such as the Initiative at the Edge¹³. Some contemporary policies, such as the Aspiring Communities Fund, use spatial targeting to support more disadvantaged communities to build capacity to engage in local development. There are good fine-grained socio-economic data which are reflected in the Scottish Index of Multiple Deprivation and this dataset can be used to target beneficiary communities, focus advisory support and develop community plans.

Notwithstanding some elements of targeting in some policies, the capacity of the current system to transform the less smart into smarter communities might be questioned. Many elements of the existing system favour the "go-getting" communities with strong social and human capital and a track record of success. Perhaps mentoring or twinning with already smart villages could be used to provide support, or maybe fixed-term animateurs could be used to help build capacity to act in local communities using the "teach a man to fish" approach rather than "give a man a fish." Certainly, local authorities (municipalities) will need to lose any vestiges of protecting their position and be more enabling in their modus operandi. And where fluid, innovative and sometimes slightly risky approaches are attempted in response to crisis conditions, it is essential to learn from that experience and not simply ostracise failure if things go wrong.

⁸ <https://www.legislation.gov.uk/asp/2003/2/contents>

⁹ <https://www.gov.scot/Topics/Business-Industry/Energy/Energy-sources/19185/Communities/CRES>

¹⁰ <https://www.fca.org.uk/firms/registered-societies-introduction/co-operative-community-benefit-societies-act-2014>

¹¹ <http://www.legislation.gov.uk/asp/2013/1/contents/enacted>

¹² <http://www.scdc.org.uk/what/community-empowerment-scotland-act/>

¹³ Initiative at the Edge (IatE) was a publicly funded partnership programme involving communities in specific remote areas of Scotland.

Brexit poses a major challenge for the Scottish Government. It increases uncertainty as to funding for the many community-oriented support policies that are part funded by the ESIF funds. Whether this raft of support policies is retained in full, with similar levels of support to those offered at present, is highly questionable. Any economic downturn arising from Brexit may reinforce austerity politics and is likely to reduce public spending still further. It will be interesting to observe whether the absence of a nudge from European policies dilutes either funding streams or the development of local-level initiatives.

5. Discussion

As in Europe, so in Scotland, the evolution of support for community level development generally and what are termed smart villages has happened almost without reference to theory. While other parts of rural policy, such as agri-environment payments are clearly grounded in the economic theory of externalities and there is a clear intervention logic, policies for smart villages have evolved without any real reference to theoretical foundations. Alongside this, Neumeier's plea (2013) for more concentration on social innovation as a contributor to rural development remains largely unmet, even if community-level social capital seems to act as a decisive differentiating factor in Scotland.

The scientific literature has paid considerable attention to explanations of spatial disparities in rural development and offered a range of explanations. Amongst the theories, those relating to differences in human and social capital offer the most compelling rationale for why some villages appear to be more effectively adaptive and more resilient than their peers. It is important to break down the types of human and social capital that appear to contribute to "smartness". In a policy environment where funding is increasingly discretionary and the result of often complex tendering procedures, those who are familiar with funding applications and who speak the language of the funding agencies are more likely to be successful. This suggests the importance of linking or bridging capital in the drawdown of support, but bonding capital may still be important in creating the community platform on which projects are constructed.

Creative class theory offers further insights into why some communities may be more successful, but the underlying structure of creative class thinking remains problematic, even if the correlation between a high proportion of people in the creative class and positive development outcomes is observable. The McGranahan and Wojan (2007) recasting of the creative class suggests that where human (rather than social) capital endowments are high, positive development outcomes are more likely. When these high levels of human capital are also associated with high levels of social capital, the prospects for positive development outcomes may be further increased.

As policy support comes increasingly to require competitive bidding processes, in the absence of affirmative action the tendency will be for places well-endowed with human and social capital to draw down an ever-increasing share of public (and charitable) support, not because their needs are greatest but because their skills are greater. This can be averted by targeted policy implementation, where either support is given only to more disadvantaged communities or where a tranche of funding is ring-fenced. Steiner (2016) has pointed to the challenges of using policy means such as LEADER to build more resilient communities in the more disadvantaged places.

To date, the policy support for smart villages in Europe has been largely rhetorical and based primarily on flagging up good practice (ENRD 2018). However, any significant disbursement of funds requires a robust intervention logic and a clear means of evaluation, and Naldi et al. (2015) point to insufficient attention to this issue. In Scotland, the up-side of a more community-centred approach to policy delivery has been the hub-satellite models of social enterprise-based development in many communities, where successes are largely contingent on draw down of funds from national or EU schemes. These have not been well evaluated, though success is arguably also contingent on the pump priming from external funds such as the Community Land Fund, the CARES scheme for renewable energy, the Climate Challenge Fund or LEADER. Third sector bodies are behind most of these successful communities in Scotland (aka smart villages) but the dynamics that drive successful third sector entities have barely been investigated. When policies are driven more by their rhetorical political appeal than by explicit intervention logic and good evaluation, success stories are likely to be flagged strongly, while the failures are brushed

discreetly under the carpet. This is not a good platform on which to develop new policy instruments.

6. Conclusions

It is indisputable that both broadband and the capacity to use it effectively are important to rural communities (Skerratt, 2010; Anderson et al. 2015). But over and above the need for an effective IT and wider infrastructure, a much more localised community-based approach to development is now being practised in Scotland with considerable success. There is growing realisation among community activists regarding the limits of both state and markets in delivering positive development outcomes at local level. By asserting local control and using appropriate local institutional architectures (typically local development trusts), local people acting collectively have proved themselves capable of drawing down support from diverse funding sources including Scottish Government, European policies and charitable trusts to drive locally owned and locally managed projects. It is not that either state and markets are rendered irrelevant in this new regime. It is that the third sector has proved its capacity to deliver in arenas as diverse as land management, community energy, retailing and social care. The delivery of products and services in these fields is now more hybrid and more community-based than at any time in the past. The UK and Scottish case are by no means unique. There are many rural areas of Europe where markets are weak and public institutions unable to address development challenges, but Scotland must be one of the most advanced areas of Europe with respect to the legislative foundations for community empowerment.

A core need is to replicate the good practice in smart villages in those that are less smart and in areas that are structurally disadvantaged. The community-based model will only work where the human resources and social capital come together in a holistic way, and this will be particularly difficult in some places with fractured and diverse communities of interest. The best that can be expected of more fractured communities is islands of strong community-driven activity in certain fields, rather than a cohesive and joined up series of actions and projects at community level. This is surely better than inertia and inaction, although developments favouring particular groups could potentially compromise Scottish Government equity objectives. Again, the aspirations for more equal development are shared by the EU. Where funding is to discretionary projects at community level, which is the normal model, the same issues of the strong communities becoming stronger at the expense of weaker, less smart communities is a necessary concern.

If there is a shadow at the heart of this carnival of creative action, it is that not all places have the human and social capital to drive community development. Without a policy of positive discrimination to disadvantaged communities and active capacity building in such places, there is a danger that smart and successful communities will draw down the lion's share of support, leaving little for those communities that are desperately in need of becoming smarter. This concern is on the radar of the Scottish Government and is reflected in some support policies such as the Aspiring Communities Fund, but where public funds are limited, the smarter communities will almost always prove most adept at drawing down funding, unless spatial targeting towards disadvantaged places is practiced. If power is only unwillingly ceded by the smart villages that have acquired it through their actions, and this is to be expected, spatial targeting based on need will be essential to expand the number of smart villages.

European Union policy has contributed significantly to smart villages in Scotland, by creating LEADER partnerships and providing other ESIF support which connects to vibrant and aspiring communities and through a mix of advice and grant aid has supported local projects. But both in Europe more widely and in Scotland, what are the key means by which government can support smart villages?

- It can provide support for animation and firming up of projects built with local communities, but must recognise that where specific advice is needed, as with community renewables, a regional officer of a sectoral body may be a better means of supporting an initiative than a "jack of all trades" amateur, although the "jack of all trades" can still provide an important signposting function.

- It can provide grant aid to projects, ideally with regional governance structures, subject to there being a clear separation of powers and recognition of issues such as displacement. The amateur should not be a member of the grant-giving panel and where displacement is significant, there may be no case for project support. These projects could be topic-specific as in the current innovation partnerships or could be place-based projects in a specific locale.
- To date most of the EIP projects have been predominantly agriculture or food-related. There are compelling reasons why innovation is also needed in fields as diverse as rural retailing, community renewables and social care. If multi-sectoral rural development is the aim, innovation across multiple sectors will be needed and support will be needed to initiate it.
- The case for supporting place-based trusts or third sector bodies which take a holistic view of development needs is compelling. However, there are already strong third sector organisations in Scotland that provide support for third sector groups and there is no case for displacing such activity with European money. So, support for capacity building and training by, for example, the Development Trusts Association for Scotland makes sense, if only by offering village activists the fees and subsistence to attend such courses.
- Governments can ensure that the key infrastructural building blocks of 21st century life are present, including high speed broadband.
- There remains a case for “intensive care” support systems which build capacity in disadvantaged communities and regions. Here the emphasis needs to be on building social capital and trust among actors, giving them skills and confidence to deliver successful locally owned projects. This suggests a need for spatial targeting of support to areas of greatest need.

Smartness remains something of a chaotic conception (Sayer, 1992), rooted in both modernisation theory and founded on an idea of technologically driven development on one hand and on the other built around bottom up community action which tends to take place out of necessity where markets and state activities are weakest and modernisation has not occurred.

Many of these enabling elements are already in place, but if we want not just smart farmers but also smart villages and smart villagers, there is a compelling case for a more holistic vision in which local actors from all sectors can draw down support from multi-sectoral partnerships such as LEADER or subject-specific support as is available with community energy. Further, there is also a case for significant spatial targeting if as seems desirable, major geographical disparities in growth potential are to be reduced. Grounded in a realistic assessment of the limits of state and markets, what has already been achieved in Scotland by supporting community level action is really considerable. What could be achieved with relatively modest adjustments to the support architecture is even greater. If a new Scottish rural policy regime is created after Brexit, it offers more flexibility to select policy means. It is important that sectional interests do not succeed in pushing the Scottish Government to increase sectoral support (especially to agriculture) at the expense of the multisectoral strategies and actions, which can offer so much in making rural areas more resilient and successful.

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