

# Multifunctional 'quality' and rural community resilience

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The aim of this paper is to contribute towards emergent debates on the 'quality' of multifunctional trajectories in rural development. The focus will be placed on the local rural community level, as it is at this level that multifunctionality is most often implemented. There has been an identified need for a new concept of multifunctionality that is conceptually and theoretically better anchored in current debates on agricultural/rural change, and for a globally applicable model that draws on existing holistic debates. The paper will suggest a conceptual framework for understanding rural community trajectories based on economic, social and environmental resilience and vulnerability of rural areas. The notion of multifunctional quality will emerge not only as a conceptual model for understanding rural pathways of change, but also as an explanatory tool and as a normative ideal for rural development. The paper builds on debates on multifunctionality extensively shaped by human geographers with the aim to extend the conceptual boundaries of the notion of multifunctionality, to further refine existing understandings of multifunctional transitions in rural communities, and to critically interrogate the components for strong multifunctionality. The paper concludes with a discussion of the complex policy implications associated with a transition from weak to strong multifunctionality.

**key words** multifunctionality rural communities resilience social capital economic capital environmental capital

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revised manuscript received 14 December 2009

## Introduction

The notion of 'multifunctional' agricultural and rural spaces has been used since the early 1990s by policymakers to highlight that rural areas are not only characterised by food and fibre production but also by the 'production' of associated environmental and social functions for rural communities (Van Huylenbroek and Durand 2003; Brouwer and van der Heide 2009). Over the past decade, researchers from various disciplinary backgrounds – including human geography – have analysed the complexity and interlinkages of multifunctional pathways, and have suggested a variety of concepts that encapsulate what rural multifunctionality could be about (e.g. Potter and Tilzey 2007; Dibden and Cocklin 2009). In its original form, the notion of multifunctionality centred largely around *agricultural* multifunctionality

and arose over concerns related to the production of commodity and non-commodity goods to society by agricultural actors. Debates have since widened to focus on the multifunctionality of *rural* areas and communities (e.g. Marsden and Sonnino 2008; Brouwer and Van der Heide 2009). Van Huylenbroek *et al.* (2007) provided a succinct analysis of different approaches to the study of multifunctionality and highlighted that there are three main research schools focusing on the 'supply' and 'demand' side of multifunctional processes and a third 'more holistic interpretation' of the term rooted mainly in rural sociology and human geography. With regard to the last of these, recent debates have focused on the policy dimensions of multifunctionality (e.g. Potter and Tilzey 2007) or on issues linked to non-economic and consumption objectives of agricultural and rural processes (e.g. Marsden 2003).

Far from being abstract theorisations, debates about the constituents and characteristics of multifunctional rural spaces have been brought into sharper focus by recent global problems such as food riots, continuing malnutrition among hundreds of millions of people, the worsening social situation in rural 'service deserts', climate change impacts, rapidly changing commodity prices, and – most recently – by the global economic crisis of 2008/09. These have all highlighted that many rural spaces are at a crossroad. Accelerating globalisation processes exacerbate the already precarious situation in many rural districts in both the global North and South, as virtually all areas are affected by global propelling forces often 'outside' the control of regional/national regulatory structures (Bardhan 2006). In addition, agriculture no longer necessarily forms the essential backbone for rural development (Rigg 2006), and instead rural spaces in both the global North and South are characterised by complex, multi-dimensional and hybrid development pathways in which questions and answers about the 'right' and 'wrong' development trajectories are increasingly difficult to answer. Yet, multifunctionality has often been treated as relatively homogeneous, i.e. either agricultural/rural spaces are imbued with multifunctionality or they are not (monofunctionality). Recently, researchers have begun to acknowledge that there may be different levels or 'qualities' of multifunctionality (e.g. Potter and Burney 2002; Hollander 2004), and the notion of a 'multifunctionality spectrum of decision-making', ranging from weak to strong multifunctionality associated with different emphases placed by rural communities on productivist or non-productivist food and fibre production, has begun to gain ground (e.g. Holmes 2006; Wilson 2007 2008a).

Echoing Van Huylenbroek *et al.*'s (2007) identification of a 'more holistic' approach to multifunctionality, the aim of this paper is to extend the conceptual boundaries of the notion of multifunctionality by, first, contributing towards emergent debates on the 'quality' of multifunctional trajectories and, second, by focusing attention on the multifunctionality of *rural* areas. Building on debates on multifunctionality extensively shaped by human geographers (e.g. McCarthy 2005; Winter 2005; Rigg 2006; Wilson 2007), the paper will suggest a conceptual framework for understanding such trajectories based on economic, social and environmental *resilience* and *vulnerability* of rural areas. The notion of multifunctional quality will emerge not

only as a framework for understanding rural pathways of change, but also as an explanatory tool and a *normative* ideal (in the context of 'strong' multifunctional quality) for rural development.

The focus will be placed on the *local* rural community level, as it is at this level that multifunctional action and thought is most commonly implemented (Wilson 2009). Over the past two decades, there has been a resurgence in attention to community<sup>1</sup> as a critical arena for addressing a range of issues, including rural pathways of change (Chaskin 2008). Based on Cutter *et al.* (2008), communities will be seen here as the totality of social system interactions (i.e. an affective unit of belonging and identity and a network of relations) usually within a defined geographical space (e.g. a village or a rural district). However, there are many different communities *within* such spaces embedded within complex networks of power and with often highly divergent aims related to multifunctional rural pathways. Reference to 'rural community' in the remainder of this paper, therefore, needs to be situated in the context of 'community' as a problematic and contested concept.

### Exploring the 'quality' of multifunctional rural spaces

Any discussion of 'quality' needs to acknowledge the subjective nature of the term. As Smith (2000) argued in the context of 'moral geographies', the notion of quality is relational and, therefore, always subjective – in other words, different individuals and stakeholder groups will view 'quality' in different ways. Finding a common definition of the quality of an object or process is, therefore, almost impossible (Bourdieu 1984). From an ontological perspective, 'quality' simply means a system of properties that make a thing or a process what it is and which make it different from other things or processes. This paper will be concerned with qualities associated with what could be seen as 'good' or 'bad' rural pathways – in other words, I will adopt an explicitly normative view about what could be seen as an 'ideal' rural system.

The notion of *multifunctionality* can be a particularly powerful lens through which to assess the qualities of rural pathways. The argument here is, first, that the notion of multifunctionality itself conjures up 'positive' associations, as most would agree that a specific system or process benefits from having 'multiple functions'. However, as the

notion of 'weak multifunctionality' implies, multifunctionality need not always be associated with *exclusively* positive attributes (Holmes 2006). 'Strong multifunctionality' has been used to describe agricultural systems with 'positive' attributes that enable implementation of multifunctional pathways that help survival of rural communities, while 'weak multifunctionality' has been used to describe 'negative' processes that are often increasing the vulnerability of rural communities (Pretty 1995 2002; Wilson 2008a). There continues to be much debate about the characteristics and specific constituents of both strong and weak multifunctional quality (Hollander 2004). Earlier research (Wilson 2007), for example, suggested that the multifunctional decisionmaking spectrum should be conceptualised as bounded by productivist (or even super-productivist) and non-productivist pathways, while Holmes (2006) suggested a tri-partite model based on a combination of production, consumption and protection functions of rural spaces. Both argue that it is the complex intertwining of these multiple and often contradicting forces that shape rural areas that result in a specific 'quality' of multifunctionality.<sup>2</sup> Further, many have questioned the applicability of the term beyond a European context where the notion of multifunctionality has largely been used as a policy 'smokescreen' to defend the subsidy culture of European agriculture (Dibden and Cocklin 2009). As a result, multifunctionality is still seen by many as a 'European project' with little relevance to non-European rural regions (McCarthy 2005).

These unresolved debates and the global applicability of the notion of multifunctionality could be enhanced by linking discussions on multifunctionality to the emergent paradigms of both *resilience* and *vulnerability* in human systems (Chaskin 2008); to an extended conceptualisation of Bourdieu's (1984) and Coleman's (1988) notion of human and natural 'capital', in particular economic, social and environmental capital(s); and to normative debates about the quality of 'sustainable' rural development pathways (Robinson 2008). In order to situate the notion of quality in rural systems, strongly multifunctional pathways may, therefore, be best understood as pathways that enable the emergence of *resilient* and *sustainable* rural communities. Resilience can thus both be an *outcome*, especially when linked to improved adaptive capacity of rural communities, or a *process* linked to dynamic changes over time associated with community learning and

the willingness of communities to take responsibility and control of their rural development pathways.

Holling (1973) popularised the term 'resilience' in the context of ecosystem stability, and there is now a wide-ranging critical literature on the notion of 'resilience' from a variety of research perspectives (Cutter *et al.* 2008). As a first step in building a conceptual model of multifunctional quality, it can be argued that resilient rural communities are characterised by well-developed *economic*, *social* and *environmental capital*. To conceptualise multifunctionality at the intersection of various 'capitals', it is useful here to briefly interrogate Bourdieu's (1984) multifaceted theory of capital as a macro-analytical framework. Bourdieu argued that the focus on economic capital has been due largely to the unambiguous immediacy and transparency of economic exchanges, and that, consequently, this has meant that other forms of accumulated labour (in particular capital in an embodied state) have tended to be neglected. In an attempt to redefine capital, Bourdieu (1984) proposed the existence of capital in three fundamental guises: as economic capital (material property), social capital (networks of social connections and mutual obligations) and cultural capital (prestige). In this framework, individuals and groups are seen to acquire or lose social, cultural, symbolic and economic capital, whereby capital is used both as a metaphor and a description of actual processes (i.e. capital as 'embodied labour') and as a culturally sensitive understanding of power. Although these concepts of capital have been widely used in studies over the past decades, the notion of social capital has since been extended to include all *non-monetised* attributes of cultural capital, social networks, complex notions of power, the relative inter-connectedness of people, and characteristics such as 'trust' and the cultural and institutional 'glue' that binds communities together (Putnam 1993; Fine 2001). Bryant, thus, argued that 'social capital has become a kind of benchmark for the ills of modern society in that its perceived absence becomes an indicator of decline' (2005, 33).

Other notions of 'capital' including 'economic' and 'environmental' capital have, in turn, been used to conceptualise economic, environmental and resource-based attributes of societal interactions. Sociologists and geographers in particular have extended Bourdieu's notion of economic capital to include not only forms of mercantile transactions,

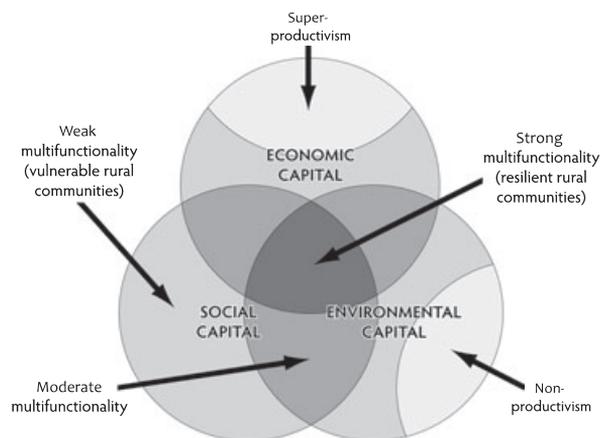
but also all human attributes associated with the use and generation of monetary capital (e.g. the monetary value of the built environment in a community). In this sense, social capital can also be converted into economic capital and vice versa. The notion of environmental capital is a more recent addition to the family of 'capitals', and has been used largely by ecologists, biologists, human geographers and anthropologists to conceptualise attributes of human–environment interaction linked to the availability and sustainable use of natural resources for human consumption (e.g. soil or water quality; availability of forest resources for a community; e.g. Gunderson and Holling 2002).

The conversion of environmental and economic capital into social capital is highly dependent on *power relations* within a community, in particular power as an inscribed capacity to control or direct the actions of others (power possessed by an individual or group within a community), and power as a resource mobilised to achieve desired objectives within a community (Allen 1997). Power is rarely symmetrical within a community, and specific stakeholder groups or individuals will almost always attempt to exert their specific views of community-level multifunctionality pathways over others through force, manipulation, persuasion and authority.

For the multifunctionality of agriculture and rural spaces, various authors have highlighted the interplay between these complex social, economic and environmental processes (Marsden 1999; Van Huylenbroek *et al.* 2007). Chaskin (2008), in particu-

lar, argued that community resilience should be seen as a positive, adaptive response to adversity where resilient actors (individuals and/or networks) are able to draw on economic, social and environmental capital to adapt successfully and, thus, are able to moderate or avoid the negative consequences that similar threats visit upon less resilient individuals or networks. In this sense, community resilience can be both preventative (avoiding poor outcomes by developing coping strategies), or it may facilitate recovery after a traumatic event or catastrophe. Resilience is, therefore, about the ability of a system to absorb impacts/disturbance and to re-organise into a fully functioning system, as well as post-event adaptive processes. Community vulnerability, on the other hand, can be seen as a function of exposure and sensitivity of a system that is usually not able to cope with risks, hazards and slow or catastrophic change, leading eventually to the disappearance of the system or parts thereof (Cutter *et al.* 2008).

Building on Van Huylenbroek *et al.* (2007), Figure 1 shows a conceptual model of how this intertwining of economic, social and environmental capital creates different spaces of multifunctionality, with the strongest multifunctionality and the strongest resilience achieved when all three 'capitals' are equally well developed. Rural systems, meanwhile, where only two capitals are well developed, can be characterised as only 'moderately' multifunctional, while rural communities that have only one (or none) well-developed capital are 'weakly' multifunctional (or in extreme cases



**Figure 1 Multifunctional quality and the intersection between economic, social and environmental capital**

Source: author; after Van Huylenbroek *et al.* (2007)

monofunctional). The figure also highlights that the conceptual territory of both super-productivism (cf. Halfacree 1999) and non-productivism (cf. Wilson 2007) can be situated at the 'extreme' ends of economic and environmental capital respectively. The methodological attractiveness of this framework is that it can be applied to any rural area and that it is relatively scale-independent.

Rural community resilience can, therefore, be seen as the *balance* between economic, environmental and social needs of rural communities – in other words, resilience is about communities being able to successfully weather the vicissitudes of endogenous and exogenous changes. Such resilience can be expressed through the robustness, the rapidity, the redundancy (extent of substitution) and resourcefulness of a community to find ways to address internal and external challenges threatening multifunctional quality at the intersection between economic, social and environmental capital. Such resilience can be scaled down to the household and individual level, and it is the totality of economic, social and environmental actions/-responses of individuals and households within a rural community that shape a community's overall resilience. It is the maximisation of such resilience that should be at the heart of policymakers' efforts to help rural communities in their struggles for survival (Pretty 1995). Thus, for rural communities to be 'sustainable' and resilient in economic, social and environmental terms, they need to develop strongly multifunctional characteristics.

### The characteristics of strong multifunctionality and rural community resilience

How can we identify the characteristics that make up strongly multifunctional rural communities? Table I suggests some of the components that may identify whether economic, social and environmental capital are well or poorly developed at rural community level. The aim is to establish a baseline against which multifunctional quality can be assessed. The table is purposefully selective and only shows candidate variables, as different characteristics will be predominant in different rural settings and at different scales, and as notions of 'quality' in relation to economic, social and environmental capital vary between cultural contexts. What is nonetheless important is that a suite of general characteristics of well or poorly developed

'capitals' emerge that will find resonance almost anywhere on the globe (Rigg 2006). In other words, the column in Table I showing 'well-developed' economic, social and environmental capital shows characteristics that most rural (and many other) communities strive to achieve, and that generally are consonant with our conceptualisation of 'strong' multifunctionality highlighted in Figure 1.

'Economic wellbeing' of rural communities is an important characteristic of well-developed *economic capital* and a key component of strong multifunctionality (Gahin *et al.* 2003). Ultimately, it is the economic survival of rural communities that should be at the heart of assessments of the 'quality' of rural systems, especially as the depopulation of rural areas is seen as a negative process in all human societies (Pretty 2002). As both Rigg (2006) and Chaskin (2008) highlighted, poverty is probably the most important constraint for rural development and, therefore, a key component of vulnerable rural communities and weak multifunctionality. Indeed, it is difficult for rural people caught in the poverty trap to find ways to raise multifunctional quality, as most of their day-to-day activities will be focused on raising sufficient income for survival (Parnwell 2007). In a similar vein, diversified income streams (e.g. pluriactive rural households) are usually a sign of well-developed economic capital, strong multifunctionality and a basis for resilient rural communities<sup>3</sup> (Oostindie *et al.* 2006). On the other hand, over-dependence on monofunctional agricultural production – possibly coupled with productivist or even super-productivist pathways – is often an expression of weak multifunctionality, increasing the vulnerability of rural communities to the vicissitudes of national/global agricultural markets. While food and fibre production can be an important component of strong multifunctionality, as they are often the platform for well-developed economic capital, Rigg (2006) and Rigg *et al.* (2008) rightly cautioned that agricultural pathways in the rural South (and in most of the North) are not necessarily the only solution for rural development. Echoing Noe *et al.* (2008), this means that conceptualisations of strong multifunctionality also need to consider *rural* pathways that may be increasingly divorced from primary *agricultural* production. Rigg (2006) has highlighted the increasing disassociation between economic capital and agricultural pathways, as an increasing number of rural households in both North and South have no commitment to farming whatsoever (deagrarianisation). In

**Table I Multifunctionality and global indicators (selection) of well- and poorly developed economic, social and environmental capital**

		<i>Strongly developed capital</i>	<i>Weakly developed capital</i>
Multifunctionality of rural communities	Economic capital	<ul style="list-style-type: none"> <li>• Economic well-being</li> <li>• Diversified income streams (e.g. pluriactivity)</li> <li>• Low dependency on external funds (e.g. agricultural subsidies)</li> <li>• Multifunctional businesses</li> <li>• Integration into global capitalist system (?)</li> <li>• Happiness (?)</li> <li>• etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty/debt</li> <li>• Over-dependency on agricultural production</li> <li>• Poor infrastructure</li> <li>• High dependency on external funding (e.g. subsidies; remittances from abroad) (?)</li> <li>• Communities as net importers of food</li> <li>• etc.</li> </ul>
	Social capital	<ul style="list-style-type: none"> <li>• Close interaction between rural people (tight-knit communities)</li> <li>• Availability of skills training and education</li> <li>• Good health and sanitation</li> <li>• Multifunctional services</li> <li>• Good communication between stakeholder groups</li> <li>• Female empowerment/empowerment of ethnic minorities in rural areas (?)</li> <li>• Open-minded communities (ability to accept change)</li> <li>• Good and transparent land ownership regulations (control over means of production)</li> <li>• Rural stakeholders in control of development trajectories</li> <li>• Strong governance structures at multiple geographical scales (democratic participation)</li> <li>• etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Outmigration of young people (greying of rural communities)</li> <li>• Service deserts</li> <li>• Lack of leadership</li> <li>• Lack of control over destiny of rural community</li> <li>• High death rates and low life expectancy</li> <li>• Poor communication between stakeholder groups</li> <li>• Female dependency/gender- or ethnically-based lack of self-determination</li> <li>• Weak land ownership patterns (e.g. high levels of tenant/dependent farmers)</li> <li>• General dissatisfaction with rural community pathways</li> <li>• Weak governance</li> <li>• etc.</li> </ul>
	Environmental capital	<ul style="list-style-type: none"> <li>• High levels of biodiversity</li> <li>• Good water quality and availability</li> <li>• Sustainable soil management</li> <li>• Predictable agricultural yields</li> <li>• Sustainable management of environmental resources in rural community</li> <li>• Multifunctional environmental resources</li> <li>• etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Soil degradation</li> <li>• Desertification</li> <li>• Salinization</li> <li>• Poor water quality and availability</li> <li>• Uncertainty over agricultural yields</li> <li>• etc.</li> </ul>

Source: author; after Pretty (1995); Parnwell (2007); Van Huylenbroek *et al.* (2007); Noe *et al.* (2008); Chaskin (2008); Cutter *et al.* (2008); Rigg *et al.* (2008).

addition, low dependency of rural communities on external funds (e.g. agricultural subsidies) may in some instances also be a good indicator of strong multifunctionality and well-developed endogenous economic capital, as it can increase economic autonomy and resilience of rural communities (e.g. Goss and Burch 2001), although 'green' subsidies linked

to agri-environmental policies also have been shown to have the potential for providing much needed finance to communities for improvement of both environmental and social capital (Van Huylenbroek *et al.* 2007).

As earlier research (Wilson 2007) highlighted, one of the most contentious characteristics of

multifunctionality is whether integration of a rural community into the global capitalist system should be seen as a sign of well-developed economic capital (and, therefore, strong multifunctionality and resilience), or whether it is an indicator of increasing dependency of a community on external forces outside of their control (see also below). Debates intersect here with critical analyses of the impacts of globalisation processes on constraints and opportunities for rural development (e.g. Marsden 2003; McCarthy 2005), and will be highly space and scale dependent (Bardhan 2006). While in some rural communities integration into the global capitalist system may indeed offer opportunities for the creation of new multifunctional pathways (e.g. by opening new markets for certain products), in others such integration may reduce economic (as well as social and environmental) capital, for example by creating new dependencies linked to new markets or new technologies (Kaplinsky and Messner 2008). The latter is particularly true for rural communities where localised and locally/regionally well-networked agro-commodity chains are disrupted/destroyed through global economic reorientation of the community (Parnwell 2007).

The situation is equally complex with regard to *social capital* as a driver for weak or strong multifunctionality, although some common characteristics emerge that will find resonance as indicators for strong multifunctionality and community resilience in most rural regions. For example, the notion of social capital (see above) suggests that close interaction between rural people through tight-knit communities and good communication between stakeholder groups are often seen as signs of well-developed social capital, while the 'greying' of rural communities through outmigration of young people is usually a sign of poorly developed (and further weakening) social capital (Bell 2004). The latter is closely associated with the (non-)provision of services in rural communities (rural 'service deserts'), often linked to weakly multifunctional community development pathways as they diminish opportunities for communities to perform multiple functions<sup>4</sup> (Woods 2005). Lack of leadership, weak governance structures or lack of control of a community over the destiny of future development pathways are also signs of poorly developed social capital (Parnwell 2007). Gender relations and the status of ethnic minorities, meanwhile, cannot easily be used as indicators of strongly or weakly developed capital and highlight the importance of

power that underlies the conversion of economic to social capital and the social relations that cohere around rural spaces throughout the global North and South (e.g. highly variable gender roles linked to culturally defined power hierarchies; Liepins 1998).

Debates about well- or poorly developed characteristics of *environmental capital* of rural areas are less contentious, particularly as 'the resilience of a community is inextricably linked to the condition of the environment and the treatment of its resources' (Cutter *et al.* 2008, 601). This means that strong environmental capital is a crucial component of strong multifunctional quality, as the resilience of rural communities is predicated on 'healthy' rural environments<sup>5</sup> (Robinson 2008). Commentators have used the dichotomy between land degradation and sustainable environmental systems to describe poorly or well-developed environmental capital, and have often linked environmental degradation issues (e.g. soil degradation, desertification, salinisation or water pollution) to increasing vulnerability of rural communities (Shiva and Bedi 2002). On the other hand, high biodiversity levels are usually seen as indicators of strong multifunctionality (Wilson 2007), as they suggest a rural society that has the 'luxury' of being able to set aside areas not directly linked to intensive agricultural production (and which may themselves generate income from non-agricultural activities such as tourism). There is a close link here with notions of 'productivism' and 'non-productivism', as productivist or super-productivist rural landscapes often have low biodiversity levels.

Only rural communities where most of the 'positive' economic, social and environmental attributes are evident can be seen as 'resilient' communities well positioned to face the challenges imposed by a rapidly globalising world. 'Monofunctional' communities, meanwhile, with only one well-developed 'capital' (see Figure 1), may be the most vulnerable and are often those in need of urgent policy action (see below). Often, factors defining strongly multifunctional rural communities come clustered together (e.g. mutually reinforcing processes such as economic well-being leading to high levels of education, in turn leading to improved environmental management; Oostindie *et al.* 2006). However, the high degree of interdependence between the three 'capitals' also means that any disruption in one capital can cause a

'ripple effect' that may affect other capitals, thereby often reducing multifunctional quality.

There will be few rural areas where *all* characteristics of economic, social and environmental capital are developed to the maximum, and equally few areas that are entirely monofunctional. Rural systems that are not too intensive in agricultural production (and thereby also not too dependent on agriculture as the main source of income), that offer diverse opportunities for its residents in terms of non-agricultural income (e.g. tourism, quality regional foods), that have managed to maintain high environmental quality, and that are inclusive with regard to stakeholder involvement, democratic processes and education of its rural citizens, will generally emerge as strongly multifunctional. However, often these systems also contain *some* characteristics of weak multifunctionality (e.g. out-migration). Conversely, even the most weakly multifunctional rural systems characterised by high dependency on agricultural production, super-productivist pathways and poorly developed social capital may have some characteristics of well-developed capital (Wilson 2008b).

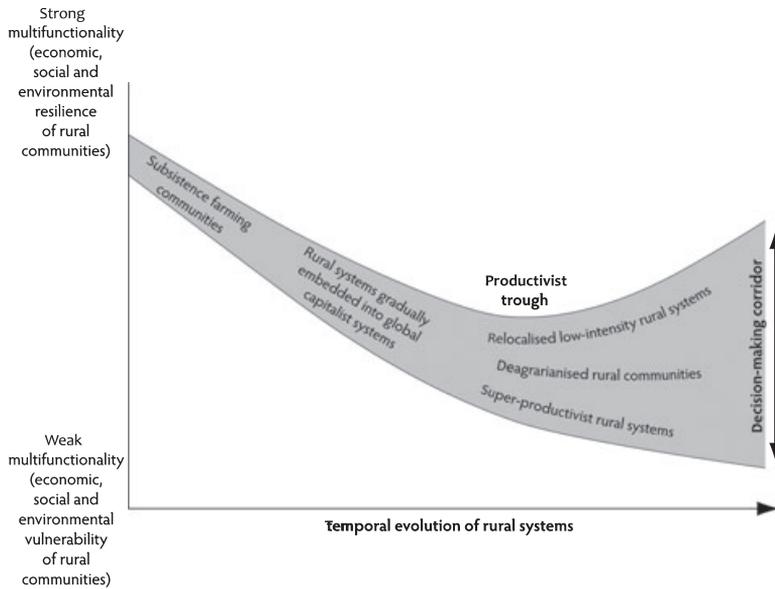
This suggests that a complex picture emerges, characterised by diverse, hybrid and highly dynamic pathways of change, where a small change in one of the 'capitals' can propel a system towards improved/reduced multifunctional quality. The concept highlighted above particularly emphasises that *all* agricultural and rural systems have *always* been multifunctional in one way or another, albeit with different multifunctional quality. Nonetheless, propelling forces influencing the 'quality' of multifunctional systems are complex and highly dependent on cross-cultural interpretations of what is 'best' for rural communities and, indeed, whether the survival of rural communities should be a key goal at all (Rigg 2006). This suggests that researchers have to be careful not to over-romanticise and reify certain rural systems over others with regard to the interlinkages between strong multifunctionality and rural community resilience. While many Western researchers would tend to emphasise the 'positive' attributes of seemingly strongly multifunctional rural systems in the South (e.g. perceptions of subsistence farming as an environmentally relatively benign system often characterised by strong social capital; see below), researchers working in the South often argue that many stakeholders in these 'strongly multifunctional' systems may be

more than willing to abdicate some of their strong social and environmental capital for improved economic capital (Wilson and Rigg 2003). While in the North super-productivist pathways have become associated with weak multifunctionality (Halfacree 1999), such pathways may be the goal of many poor farmers in the South (Rigg 2006) or even in regions such as the Mediterranean that are still in the process of agricultural 'modernisation' (Caraveli 2000).

With these cautionary points in mind, in the following the multifunctional quality concept will be used as a yardstick to argue that, globally, we have witnessed a gradual reduction of multifunctional quality and an associated increase in vulnerability of many rural communities based on a variety of endogenous and exogenous propelling forces. As the next section will discuss, this reduction in multifunctional quality has been highly differentiated over space and time.

### Rural systems and changing multifunctional quality over space and time

Building on the above discussion, Figure 2 shows a conceptualisation of changing (global) multifunctional quality over time. First, it shows multifunctional quality ranging from weak to strong multifunctionality as a spectrum of decisionmaking in which a myriad of actors and pathways intertwine in complex ways to assert their views of multifunctionality over others (x-axis). At the rural community level, these multifunctional pathways can be understood as the sum total of individual, household or group actions associated with economic, social and environmental capital which define the position of a rural community (or indeed a household within a community) on the spectrum of weak/strong multifunctionality. The figure is based on the assumption that resilience and vulnerability are oppositional and mutually exclusive. It is, of course, not possible to write of 'resilient communities' unproblematically, as the unit of analysis within a community is in itself highly complex, and within single communities various levels of multifunctionality are likely to co-exist. The sum total of individual, household or group actions means that we need to conceive of multifunctionality evolving in diverse and often uneven ways within apparently 'singular' rural contexts, and as a rather diffuse and diverse set of transformations



**Figure 2 Multifunctional quality, rural community resilience/vulnerability and the temporal evolution of rural systems**

Source: author

which apply variously across spaces and population groups within rural communities. However, building on Cutter *et al.* (2008) and Chaskin (2008), it is the contention here that vulnerable households/individuals can, through the sum total of multifunctionality actions at community level, be sustained and, at times, helped to embark on more resilient pathways. In other words, various levels of household vulnerability may be embedded in a community where resilience arises from the way in which *collective* action helps negate *individual* vulnerability.

Second, we can conceive of rural change as a 'transitional corridor' that shows the space where multifunctional decisionmaking is most likely to take place (Martens and Rotmans 2002; Wilson 2008a). This space is bounded by pathways of the 'possible' that tend towards strong multifunctionality closer to the 'top' of the figure and that, closer to the 'bottom', tend towards weak multifunctionality. The transitional corridor should not be seen as an absolute boundary for decisionmaking opportunities, as 'outliers' will always exist. Instead, the corridor should be seen as the centre of a bell-shaped curve distribution of the most likely multifunctional trajectories or, in Shucksmith's (1993) words, 'pathways of the possible'. Within this cor-

ridor some decisions taken at the rural community level are likely to reduce multifunctional quality (e.g. outmigration of young people), while others are likely to raise quality (e.g. soil conservation measures).

Third, Figure 2 shows the temporality of multifunctional transitions. Building on previous work that has suggested that, historically, agricultural systems may have lost multifunctional quality (McMichael 1995; Pretty 2002; Wilson 2008a), the figure suggests a gradual reduction in multifunctionality over time, albeit with pronounced geographical variation (see below). This argument is underpinned by the fact that in many rural communities across the globe indicators of strong community resilience have weakened (e.g. loss of environmental capital through destruction/degradation of the rural environment; weakening social capital through outmigration), as highlighted by case studies in different geographical locations (e.g. Pretty 1995; Parnwell 2007; Rigg *et al.* 2008). These studies highlight that a variety of interlinked factors are currently contributing towards loss of multifunctional quality: climate change (loss of productive capacity in many areas<sup>6</sup>; Mestre-Sanchis and Feijoo-Bello 2009; Head 2009); changing food consumption patterns towards wheat- and

meat-based nutrition in high-population transition economies such as China and India, reinforcing neo-productivist food production practices and often reducing environmental (and social) capital (Davis 2000; Veeck and Veeck 2000); rapid expansion of both biocrops (e.g. oil palm plantations) and genetically modified crops, often replacing 'traditional' food crops and increasing the economic dependency of communities on volatile external markets while simultaneously affecting environmental capital (Koczburski and Curry 2005; Steinberg and Taylor 2009); outmigration from rural areas with associated loss of social and economic capital (Boserup 1993; Rigg 2006); or policy drivers such as World Trade Organization agreements on global tariffs and trade that often have negative effects on the multifunctionality of rural communities (e.g. Aggarwal 2006; Potter and Tilzey 2007). Loss of multifunctional quality, therefore, emerges as a highly dynamic process akin to a 'slow onset hazard' (rather than catastrophic change) over longer time spans and often typified by what Marsden (2003) termed a highly problematic 'race to the bottom' for many rural communities. Indeed, declining multifunctional quality is a dynamic process dependent on antecedent conditions and influences from outside forces often beyond the control of rural communities (Wilson 2008b).

Fourth, Figure 2 positions different examples of rural systems within a temporal evolution from relatively 'simple' to more 'complex' rural systems.<sup>7</sup> At the top left, rural communities characterised by *subsistence farming* – as the 'oldest' type of agricultural production system comprising hundreds of millions of farm households – will often be characterised by relatively strong multifunctional systems based on relatively resilient rural communities. In other words, most of the indicators in Table I would resonate well with most subsistence farming system, as long as these systems have not been substantially influenced by external forces linked to globalisation and/or the spread of the global capitalist system (Pretty 1995). Indeed, successful survival of such systems can be seen as a key indicator of strong resilience. However, most subsistence farming systems will also show vulnerabilities, especially with regard to natural hazards or concerning social and political factors such as control over property rights (for China, see Prändl-Zika 2008). Most importantly, most subsistence farming systems will rely almost entirely on agricultural production as the mainstay of their rural

economies, and may, therefore, be over-dependent on a monofunctional economic base, although social and environmental capital are usually well developed (Pretty 1995). As a result, Figure 2 situates subsistence farming systems *close to*, but not directly at, the upper boundary of strong(est) multifunctional quality. The decisionmaking corridor in these systems is relatively 'narrow', because alternative economic pathways (e.g. tourism, pluriactivity) are often not (yet) available.

Rural systems that are gradually embedded into the global capitalist system can be situated 'further down' to the right of the multifunctional transitional corridor. These systems, often characterised by low technological and external inputs and as rural communities with strong social capital, may be particularly vulnerable to capitalist forces that threaten to weaken multifunctional quality (Pretty 1995; Parnwell 2007). Although such systems are still largely predicated on agricultural production as the basis for economic capital (in both the North and South), these communities have been gradually embedded into the global capitalist system (Rigg *et al.* 2008). This often means that communities may be forced/encouraged to intensify agricultural production and/or to seek alternative means of income generation – a process referred to by Rigg (2006) as a 'squeeze of decision-making opportunities' in the global South. Although in itself this may not necessarily lead to a reduction of multifunctional quality, it is likely that some of the indicators of well-developed social and environmental capital are weakened in the process. This may be particularly true for social capital where outmigration of young people may lead to a disintegration of formerly close-knit communities (Bryceson 2002), where a gradual loss of control over the destiny of the rural community may lead to a disintegration of local leadership (Bell 2004), and where formerly strong locally based 'horizontal' governance structures are increasingly replaced by weak 'vertically' oriented governance patterns (e.g. through increasing dependency of agricultural holdings from external agri-businesses with regard to seeds and technology; Wilson and Rigg 2003). The increasing embeddedness of many rural communities into the global capitalist system is, therefore, often associated with the loss of endogenous power and control of communities over internal decisionmaking structures (Dicken 1998). Parnwell, therefore, argued that through globalisation

formerly cohesive and mutually supportive communities have become much more differentiated, competitive, and commercially oriented. Social capital has been depleted, less visible, less effective, and to some extent less necessary than it was in the past. (2007, 1004)

In addition, global embeddedness may also lead to a reduction in environmental capital, in the most extreme cases threatening the livelihood base of rural communities (Aggarwal 2006). However, globalisation may also offer opportunities for *raising* multifunctional quality through, for example, improved infrastructure, reduced dependency on external funding, improved education or better information about how to tackle environmental degradation (Bardhan 2006). As a result, Figure 2 shows a widening transitional corridor for these systems.

Further to the right of the figure, the situation becomes increasingly complex. On the one hand, we find *deagrarianised* rural communities where agriculture no longer plays a major role (Noe *et al.* 2008). Until recently, such communities would have been almost entirely restricted to developed countries where the gradual loss of agriculture's position and importance in society has been particularly pronounced since the 1950s (Sheingate 2000). However, increasingly rural communities in the South are also characterised by processes of rapid deagrarianisation (Bryceson 2002; Rigg 2006). Although deagrarianisation can be a mixed blessing for rural communities (as witnessed by major upheavals in Western European rural communities who lost their agricultural base since the 1960s), it may also lead to improved multifunctional quality. As Table I has highlighted, over-dependence on agriculture can be an indicator of community vulnerability, and the diversification of former *agricultural* communities into *rural* communities – with a wide variety of stakeholders from second home owners to professional people working from their rural homes, to new non-rural businesses – can often raise multifunctional quality by improving community resilience (Woods 2005). However, counter-urbanisation and the dramatic changes associated with this process in many rural communities of both the global North and South also highlights the complexity of issues linked to the conceptualisation of 'community' as a heterogeneous and complex construct in which power relations (e.g. between long-standing residents and newcomers) often define which stakeholder groups

in the community benefit disproportionately from increased resilience. Diversification is the key issue for these communities, and in areas where multiple pathways of economic development have become possible and accessible for various stakeholder groups in a community, evidence suggests that multifunctional quality has increased (Meert *et al.* 2005).

On the other hand, we also witness rural community pathways that have been described as *super-productivist* (Halfacree 1999). Figure 2 suggests that these systems can cover a large temporal span in the transitional corridor (e.g. in the developed world since the 1950s or earlier; in developing countries since the 1970s), and that they are likely to dominate rural futures for some time to come as they are largely driven by accelerating globalisation processes and the spread of the global capitalist system. The co-existence of super-productivist and deagrarianised systems emphasises the complexity and spatial and temporal heterogeneity of contemporary rural systems (Wilson 2001). It has been suggested (Marsden 2003; Wilson 2007) that super-productivist systems are largely responsible for a rapid reduction in multifunctional quality in rural communities and a main cause for the existence of the 'productivist trough'. Although the notion of 'trough' suggests that there is likely to be a 'positive' change towards increasing multifunctional quality in the future, many intensive agricultural systems continue on a pathway of weak multifunctionality precisely because in these communities – in the global North and increasingly in the South – the trajectory of intensification and industrialisation of agriculture has been chosen as the main pathway for the rural economy.<sup>8</sup> Such monofunctional trajectories are often characterised by pronounced path dependency, referred to as the 'productivist agricultural treadmill' by Ward (1993). Although these systems cover a wide spectrum of decisionmaking that also contains elements of strong multifunctionality based on strong economic resilience (at least for some stakeholder groups that are 'vertically' well integrated into the global capitalist system), social and environmental resilience are often severely threatened (Bell 2004). This means that in both deagrarianised and super-productivist systems the corridor of decisionmaking is wide, resulting in a substantial broadening of the transitional corridor at this juncture in Figure 2.

In most developed countries and increasingly also in the developing world, the last few decades

have also witnessed a process whereby rural communities continue to be based on agricultural production, but with much more extensive and locally based production strategies – referred to as *relocalised low-intensity rural systems* (Goodman 2004).<sup>9</sup> Often, such processes have been aided by policies such as EU agri-environmental schemes that aim to enhance environmental quality in the countryside while simultaneously maintaining rural incomes. In many ways 'old' meets 'new' in these systems, as these communities attempt to rediscover low-intensity traditional farming methods that were present in subsistence farming systems for thousands of years (Bohnet *et al.* 2003). There is strong consensus among commentators (mostly from the political left) that these relocalised low-intensity rural systems resonate well with well-developed social and environmental capital, but that they can also have well-developed economic capital based on diversified income streams (Wilson 2007). Indeed, such systems indicate that the general decline of multifunctional quality suggested in Figure 2 is not necessarily irreversible, and that the social, cultural and institutional memory that remains can provide the basis for the *resuscitation* of strongly multifunctional characteristics. As a result, these systems often have both the potential for the conversion of economic into social capital and for strong multifunctionality based on resilient rural communities, although corridors of decisionmaking are wide and may also include weak multifunctionality characteristics (e.g. lack of food self-sufficiency).<sup>10</sup> Some have begun to argue that relocalised low-intensity systems are beginning to form an important *counter-weight* to super-productivist rural systems and that, as a result, they may help guide modern rural systems out of the 'productivist trough' (e.g. Hopkins 2008).

It is important to emphasise at this juncture that much critical literature has highlighted the importance of historical globalisation and colonial processes on the widening of decisionmaking opportunities for rural communities in the past. Michie and Grieve Smith (1995), for example, argued that in quantitative terms the world was perhaps at least as open economically in the 19th century as it is today, and Hirst and Thompson (1996) also questioned whether current globalisation trends and their effects on community development were different from those of the colonial era in terms of direct effects on livelihoods of economically marginal communities (e.g. plantation systems).

However, there is general consensus that the nature of global integration during the colonial era was *qualitatively* different and that 18th- and 19th-century global processes were characterised by *internationalisation* (extension of global economic activities across national boundaries) rather than *globalisation* (functional integration of remote communities into the global economy; Goodman and Watts 1997). In other words, while the pre-1914 world economy was an increasingly internationalising economy, the nature of integration was more 'shallow', based primarily on arm's length trade in goods and services, while today's globalised communities are characterised by a deeper degree of community integration based upon interconnected configurations of production (Waters 1995; Nederveen-Pieterse 2004). What could be argued, therefore, is that the current co-existence of super-productivist and relocalised low-intensity rural systems shown in Figure 2 suggests that decisionmaking opportunities are widening in both North and South and that the multifunctional decisionmaking corridor may be currently at its widest since the emergence of the first agricultural societies 12 000 years ago. This widening multifunctional transitional corridor suggests both an environmentally and socio-culturally problematic deepening of weak multifunctionality pathways, as well as new opportunities for the 'rediscovery' of strong multifunctionality based on more resilient rural communities.

### Discussion and conclusions: multifunctional quality, resilience and policy challenges

The aim of this paper was to contribute towards emerging debates on the 'multifunctional quality' of rural trajectories by suggesting a framework based on the economic, social and environmental *resilience* and *vulnerability* of rural communities. Linked to the identified need for a new concept of multifunctionality that is conceptually and theoretically better anchored in current debates on agricultural/rural change, and for a globally applicable model that draws on existing holistic debates of multifunctionality, the paper aimed at both extending the conceptual boundaries of our understanding of 'multifunctionality' and broadening debates beyond agriculture by focusing on multifunctionality at *rural community* level. Building on debates that have been extensively shaped by human geographers, the paper has argued that the notion of

strong multifunctional quality can be used as a conceptual model for understanding ‘positive’ rural pathways of change, and as an explanatory tool and normative ideal for rural development.

Figure 2 has highlighted complex transitions with regard to the gradual loss, and possible rediscovery, of strongly multifunctional pathways for rural communities. These highly differentiated processes necessitate equally differentiated policy responses. Rural communities may be more or less well prepared to address loss of multifunctional quality – in other words, resilient adaptive capacity to respond and ‘bounce back’ will vary based on the severity of propelling forces and the strength of communities’ economic, social and environmental capital. While many commentators have shown that community resilience can be largely harnessed through endogenous forces emanating from the community itself (Pretty 1995), often there are substantial limits to how the local level can shape and influence multifunctional rural trajectories. This suggests that regulation external to the rural community level (usually in the shape of national policies) is often crucial in helping rural communities to raise multifunctional quality (Ray 2000). However, the regulatory environment has both

increased and reduced multifunctional quality of rural communities in various geographical settings (Wilson 2007).

If we accept both the *normative* and *moral* goals of increasing rural community resilience by raising multifunctional quality, several ways in which policy can be used to influence multifunctional trajectories can be conceptualised. Figure 3 highlights that, first, varied policy action is possible to raise multifunctional quality of different rural systems. While subsistence farming communities with still relatively high multifunctional quality, for example, are likely to benefit most from policies aimed at enhancing economic capital (i.e. financial poverty is often the key issue), rural systems gradually embedded into the global capitalist systems will most often benefit from rural development policies aimed at strengthening social and environmental capital (Van Huylenbroek *et al.* 2007). Indeed, for the latter, policy action may be needed to prevent the slide of globalising rural communities into the ‘productivist trough’ with its characteristically low community resilience (see above), or to help rural diversification pathways away from agricultural over-dependence and monofunctional production pathways – in other words, policies for ‘managed

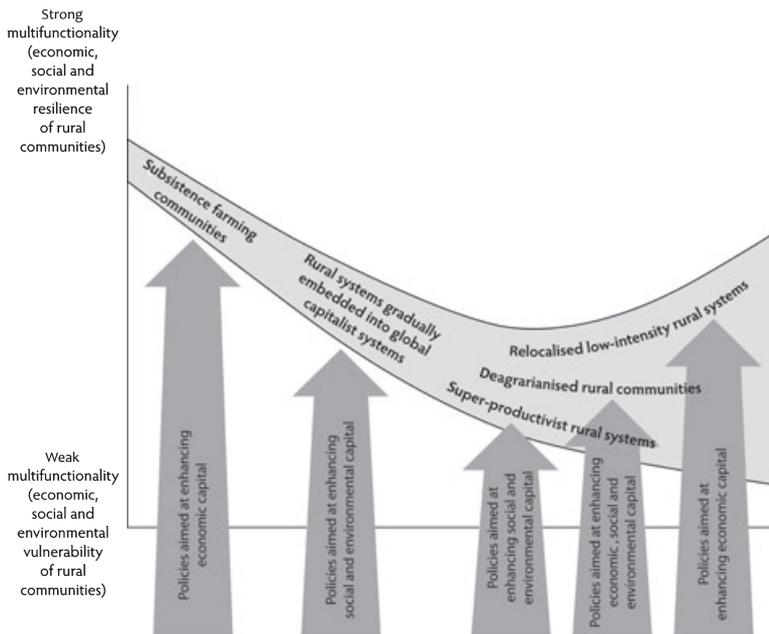


Figure 3 Multifunctional quality, rural systems and policy challenges

Source: author

globalisation' could ensure a smooth transition towards *rediscovery* of strong multifunctionality and resilient rural communities without having to 'go through' the productivist trough (Bardhan 2006). Yet, while normative judgements about 'good' or 'bad' multifunctionality can form important base-lines for policy action, the situation is complicated by the fact that multifunctionality means different things to different people, and that multifunctionality is closely associated with notions of *power* within and beyond rural communities. Thus, for many, multifunctionality is largely a response to poverty, where only multiple strategies enable rural households and communities to survive (Parnwell 2007). Multifunctionality in this context can be interpreted as a form of 'resistance' and coping strategy (McCarthy 2005), where increasing *economic capital* is the ultimate goal in the first instance. This means that opportunities need to be particularly provided to help rural stakeholders in the South to leave the poverty trap (especially through improved education/skills/gender roles; see Table I) without jeopardising the survival of strongly multifunctional attributes. Yet, many of the two billion subsistence and small-scale farmers on Earth simply do not have the option to change multifunctional pathways and to diversify income streams away from agriculture. Although many of these systems have retained elements of strong multifunctionality, the policy challenge is particularly evident for these communities with regard to striking the right balance between economic, social and environmental capital.

Second, required policy action is even more complex for hybrid pathways of rural systems on the right-hand side of Figure 3. Here, policies will be particularly concerned with helping to increase multifunctional quality in super-productivist systems by enhancing social and environmental capital (e.g. through agri-environmental policies). For deagrarianised rural communities, meanwhile, all three forms of capital may need support (e.g. reinvigoration of economic capital after loss of agricultural base, or strengthening social capital in peri-urban counter-urbanised commuter settlements). Many relocalised low-intensity rural systems, on the other hand, will already be on endogenous pathways of 'rediscovery' of environmental and social capital, but may need policy help with reinvigorating economic capital. As Clark (2006) argued, there is also a macro-regional aspect to these debates. While the 'European model of multi-

functionality' has tended to place emphasis on the production of *social* (e.g. through the EU LEADER programme) and *environmental* capital (e.g. through agri-environmental policy as a backdoor subsidy) and on the survival of often economically marginal family farms (Dibden and Cocklin 2009), researchers working in the South often argue that rural communities would benefit most from policies strengthening *economic* capital by reducing poverty and by boosting productivist pathways (Prändl-Zika 2008). This means that in Western Europe, for example, policies will continue to aim for re-invigoration of rural (often deagrarianised) communities through strengthening of social capital, while in the South ensuring the economic survival of often close-knit communities will often be the ultimate goal. However, Rigg *et al.* (2008) have shown through their case study of deagrarianised rural communities in South East Asia that this differentiation between policy needs of rural communities in the North and South is increasingly artificial, and that multifunctional transitions are converging across the world. The temporal co-existence of super-productivist and relocalised low-intensity rural systems also suggests that decisionmaking opportunities are widening at global level, with resulting environmentally and socio-culturally problematic deepening of weak multifunctionality pathways and concurrent new opportunities for the 'rediscovery' of strongly multifunctional development pathways in *both* North and South.

Third, a complex 'geography of policy opportunities' exists in which certain rural areas will have more chances to implement strongly multifunctional pathways than others. For example, scenically attractive rural areas generally find it easier to increase economic and environmental capital (Clark 2006), and more policy opportunities for raising economic and social capital usually exist in rural areas in the peri-urban fringe (Vandermeulen *et al.* 2006). Super-productivist rural regions caught in the productivist treadmill, meanwhile, often have limited opportunities for raising multifunctional quality (Wilson 2008b). This suggests the existence of a *vicious circle* where rural systems with already higher multifunctional quality (e.g. many upland areas in Europe) usually have more opportunity to further increase multifunctional quality, while rural systems with already weak multifunctional quality and low rural community resilience often only have the option of further reinforcing monofunctional super-productivist pathways (Marsden 2003).

This highlights that understanding the *geographies* of agriculture and rural systems is key to understanding the interaction between policy opportunities and multifunctional quality.

Fourth, policies need to ensure equitable provision and distribution of food in strongly multifunctional rural systems, in particular in view of the Millennium Development Goal of halving world hunger by 2015. While in some places this may be achieved through policies encouraging relocalisation processes, in other rural communities that have lost their agricultural base a 're-agrarianisation' may be needed (e.g. some depopulated rural areas in the Mediterranean region). As previous research (Wilson 2008a) highlighted, a crucial consideration has to be whether strongly multifunctional pathways can feed the world with high-quality food, and this can only be ensured if endogenous community-based initiatives combine in positive ways with external policy and institutional regulatory mechanisms to simultaneously raise economic, social and environmental capital in rural communities.

Fifth, as Rigg questioned, should policies

be aimed at oiling and assisting the process of transformation of farmers into non-farmers, and rural people into urbanites, rather than shoring up the livelihoods of smallholders through agricultural subsidies, land reforms, and piecemeal employment schemes [?] (2006, 195)

Although asked in the context of rural communities in South East Asia, these questions are equally pertinent in the global North. Although the answer depends on the circumstances of individual village communities, what is important to recognise is that strongly multifunctional rural pathways are becoming increasingly divorced from agricultural production in many parts of the world. While this process began in the 1950s (or earlier) in many rural districts in developed countries, Rigg (2006) has highlighted how processes of deagrarianisation in the South are also increasingly calling for more differentiated policy responses aimed at engendering strongly multifunctional rural pathways (see Figure 3 above). Rigg *et al.* (2008) particularly argued that endowing rural people in the South with skills so that they can escape from farming and the countryside may be the best way forward.

In conclusion, the next step will be to operationalise the notion of strong multifunctionality and community resilience and to test it in real world

applications in different rural contexts and at different scales of investigation. This may necessitate additional work on refining the framework. Such applications should enable assessment of what makes some rural communities more strongly multifunctional than others, and would allow for better explanations for the highly diverse geography of multifunctional rural spaces. I wish to particularly invite closer interaction between agricultural economists working on multifunctionality and colleagues investigating multifunctionality and resilience issues from a social-science-oriented perspective. Evidence from a recent international and multidisciplinary 'multifunctionality session' at the 2007 Annual Conference of the Royal Geographical Society (with the Institute of British Geographers) in London suggests that such improved communication will greatly benefit multifunctionality research by highlighting different (and equally valid) interpretations, approaches and methodologies used to understand and research multifunctionality. Only if such a discussion takes place will it be possible to compare multifunctionality issues across different spatial scales and disciplinary chasms, to adopt comparable methodologies that can be used to replicate research designs across different geographical spaces, and to cross-check the robustness of current conceptual frameworks for understanding multifunctionality.

## Acknowledgements

Many thanks to Jonathan Rigg and Olivia Wilson for very constructive comments on an earlier draft of this paper, to James Sidaway for excellent advice and critical comments on key themes addressed in this article (over several meals and sauna sessions), and to human geography colleagues at both the Association of American Geographers Conference 2009 (Las Vegas) and the University of Exeter (UK) for critical scrutiny and discussion of the conceptual framework proposed in this paper. Many thanks also to the three anonymous referees for challenging and constructive comments which have led to a substantial sharpening of the argument presented here.

## Notes

- 1 There has been substantial debate about the meaning and constituents of the notion of 'community', about communities as 'open' and 'unbounded' systems

rather than 'closed' easily identifiable geographical entities (such as a 'village community'), and about the fact that 'community' is largely an attitudinal construct that means different things to different people (Staheli 2008).

- 2 It could be argued that 'multifunctionality' in itself is a purely positive concept, and that the notion of weak multifunctionality, therefore, is not needed. However, as will be shown below, weak multifunctionality cannot necessarily be equated with 'monofunctionality' as every rural system will, in some way or another, have some elements of multifunctionality.
- 3 Pluriactivity is one of the key indicators in earlier conceptualisations of multifunctionality (see, in particular, Van Huylenbroek and Durand 2003).
- 4 This is not to suggest that social capital is solely related to 'tradition', and that, as societies modernise, social capital will be eroded almost by definition. The emergence and maintenance of social capital can, therefore, not be separated from the modernisation process, as evidenced by middle classes who are beginning to colonise rural spaces in the global South and can play a vital role in reinvigorating social capital (Thompson 2007).
- 5 It is, of course, possible to conceive of deagrarianised rural communities that no longer rely on 'well managed' land resources for survival (and as a source for resilience), but 'environmental capital' is seen here as comprising the totality of environmental resources to a community including drinking water or clean air.
- 6 Critical literature on the impacts of climate change on rural communities also highlights potential benefits in some areas through increased agricultural productivity and poleward shift of agricultural zones (e.g. Cline 2007; Chaskin 2008).
- 7 The evolution from one type of agricultural/rural system to another is not necessarily linear, as all rural systems shown in the figure continue to co-exist simultaneously (i.e. subsistence farming systems still exist alongside super-productivist industrialised rural communities; Wilson 2007).
- 8 Classic examples include the Paris Basin in France, the wheat belt in the Ukraine and the USA, intensive farming in Australia and New Zealand, oil palm plantations in Indonesia, intensive horticultural farming in Kenya, or green revolution intensive rice farming in the Philippines (Robinson 2008; Head 2009).
- 9 Parnwell (2007) also refers to these systems as 'neolocalised'.
- 10 A particularly problematic issue in this context – conceptually as well as morally – is the need to acknowledge that such strongly multifunctional systems, despite all their positive attributes regarding community resilience based on strong social and environmental capital, may not be able to feed a growing world population (see Wilson's (2008a) notion of 'zero-sum-game' in global multifunctionality transitions).

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