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Doris Schmied and
Geoff W. Wilson eds.

Globalization and Rural Transitions in Germany and the UK

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Introduction:

British and German Rural Geography in Perspective

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1 Themes in rural research in the UK and Germany

While Germany can be seen as the birthplace of modern academic geography as a discipline in the early 19th century (WOODS 2009b), rural geography was slow to develop in both Germany and the UK. Although spatial investigations of "rural" themes were part of early geographical research (e.g. von THÜNEN's model of land use; CHRISTALLER's central place theory), and although rural geography issues had been included in earlier geographical enquiry, especially through the regional geography approach, which already had a key focus on landscape and people's interactions with the "rural" environment (ibid.), the emergence of "rural geography" as a distinctive sub-discipline occurred relatively recently in the 1950s (WOODS 2005). As the dominance of regional geography faded in most European countries, rural geography as a sub-discipline of geography was created almost by default, especially as a "counterpart" of the rapidly growing sub-discipline of urban geography (CLOUT 1972; GILG 1985; PACIONE 1984).

The sub-discipline of rural geography did not emerge in a vacuum. Since about 1900 (predominantly in the USA), the rising prominence of geographical rural enquiry was paralleled by *rural sociology* investigations, which particularly took off after 1920 – best highlighted by the publication of the journal "Rural Sociology" from 1936 onwards, which provided an early focus for rural research on rural versus urban issues, social relations within rural areas (rural communities), the sociology of agriculture (especially about the farm household as a social unit) and general changes in rural societies (in particular linked to modernization). Some have argued that, from the start, rural sociology investigations were embedded within robust theoretical sociological investigations of the complex interrelationships between people and rural areas (e.g. WOODS 2005),

although these approaches took a long time to be acknowledged by European rural researchers. Anthropological approaches in the early to mid 20th century also greatly contributed towards improving understandings of rural issues (mainly in developing countries), especially through their foci on rural social structures and processes (with ethnography as the main methodology; researchers living with rural communities) and issues surrounding rural identity (BUTTEL and NEWBY eds. 1980; JONES 1973). As a result, the emergent sub-discipline of *rural geography* in both Germany and the UK (since the 1950s) was long sidelined by rural sociology and anthropological investigations (and some argue that this is still true today). Indeed, even within geography, rural geography remained relatively marginalized until the 1970s (ROBINSON 1994). This was linked to the fact that, until the 1980s, most rural geography research in both Germany and the UK was largely empirical in nature, and focused mainly on *agricultural* processes. Thus, rural geography was more or less synonymous with agricultural geography. Reflecting the importance of agricultural production in post-war Europe, it focused mainly on the economic importance of agriculture, implications of farm modernization for agricultural production processes, the impact of human activity on the countryside, rural population issues (especially migration, transport and settlements) as well as on rural landscape and land use history, especially the evolution of rural landscapes (ROBINSON 2004; ARNOLD 1983). Overall, there was not much engagement with conceptual ideas, and both German and UK "rural" research shared this empirically and agriculturally focused research agenda.

A few exceptions with regard to the situation in Germany need to be pointed out. These relate to a number of originally "marginal topics" of rural as well as agricultural development that emerged in the late 1970s and have gained considerable attention since. This observation applies especially to the growing interest in "village issues", which were strongly connected with the increasing urbanization of the countryside and the rapidly changing structures and functions of rural settlements. Mainly as a result of the activities of the "Arbeitskreis Dorfentwicklung" within the German Association of Geographers (DGfG), founded by Gerhard HENKEL in 1978, there was an increased focus on structural change of villages. This can partly be interpreted as a critique of processes of modernization throughout the German countryside during the 1970s and well into the 1980s. With the ongoing destruction of traditional villages and their former functions and the transformation of the countryside at large, many geographers joined forces to develop alternative concepts of village development, building both upon resistance against the loss of the "last true villages" as well as on critical reflection upon innovative ways of revitalization that have emerged since the late 1980s/early 1990s. The latter have gained even further importance more recently with increasing interest particularly in the adaptation of former agricultural buildings to modern "rural functions" (see SCHMIED and HENKEL eds. 2007; HENSELER 2009).

Another observation worth mentioning is the transformation of agricultural geography. While agricultural geography in Germany until the early 1970s used to be a most traditional disciplinary "playground" of its own (see

ARNOLD 1983, 1985 and 1997), often regarded as old-fashioned and of little international academic value, the subject has seen considerable change since the late 1970s. Worth mentioning is the work of WINDHORST (1975 and 1989) and a number of his co-workers. Their research has put major emphasis on the processes of industrialization in agriculture and the spatial implications of this change, and thereby has pointed out worthwhile relations between agricultural and economic geography as well as with the planning disciplines. This also includes the adaptation of a number of theoretical concepts, such as innovation and diffusion models (HÄGERSTRAND 1967; BROWN 1981) as well as product life-cycle concepts (TAYLOR 1986; NUHN 1993). As a result of his work on issues around the development of areas of intensive agricultural production (in Germany, Europe and the US), more recently WINDHORST (2004) has introduced the concept of agricultural and food clusters, developing a number of considerations related to recent research on cluster development and cluster policies in Germany and beyond. However, this research group has also received criticism for their mainly descriptive approach and the overall lack of deeper theoretical foundations of their work. Such criticisms apply even more to other German agricultural geographers and may explain their marginal position with regard to shaping international research agendas to the present day.

In this book, we will argue that the pathways of rural research have taken a slightly different course in Germany and the UK from the 1980s. Driven by key thinkers such as Paul CLOKE, Richard MUNTON and Terry MARSDEN, in the UK a more critical rural geography emerged in the 1980s, which began to use a wider range of conceptual theories (political economy, feminist theory, post-structuralism, etc.). Rural studies became more inter-disciplinary and informed not only by geographical concepts, but also by sociological and anthropological approaches, which enabled the utilization of much broader and wide-ranging theories and concepts (WOODS 2005). Political economy approaches were particularly important in UK rural geography from the 1970s to the 1990s, with a focus on the study of relations of production, distribution and capital accumulation (often with Marxist undertones), and the wider regulation of the rural economy. Commentators such as CLOKE (2003) have argued that this provided a new critical edge (often criticizing capitalism) and new ways of thinking, which enabled researchers to approach rural and agricultural issues from hitherto unexplored angles. In particular, work by the sociologist Howard NEWBY (1977; NEWBY et al. 1978) broke new ground by analyzing agriculture as a capitalist enterprise (profit maximization, farm labour issues), by focusing on class through the lens of conflict, oppression and the impact of middle-class in-migrants, and by investigating implications of change in the rural economy through processes such as tourism, recreation and commodification of the countryside.

From the early 1990s, it can be argued that British and German rural geography drifted further apart through the emergence of the "cultural turn" in the UK and its application to many rural questions in the UK and beyond (ILBERY ed. 1998). The key aim of the cultural turn was to "bring people back" into the research of the rural, to "enculture" political economy

approaches, and to provide a new understanding of rural culture via the lens of identity, discourse theory and critical investigations of nature-society relations (WOODS 2009a). Analysis of discourses of rural experience (lifestyles, experiences, marginal groups), different representations of rurality (media, symbols), and issues surrounding mobility in rural space (tourism, travel, alternative lifestyles) became particularly prominent and have continued to provide a key focus of UK rural research at the beginning of the 2010s. However, this "enculturing" of British rural geography has not been without its critics, and sceptics have argued that the cultural turn tends to focus on approaches that neglect structure, that it is too subjective and based on "weak" methodologies, and that there is often no "practical" output (e.g. informing policy) from research results. Nonetheless, the cultural turn has forced many researchers to rethink their approaches, methods and theories and – if seen as a parallel development to more "traditional" rural geography approaches rather than as a new paradigm superseding previous approaches – it has greatly enriched UK rural geography research (CLOKE 2003; HOLLOWAY and KNEAFSEY eds. 2004). Nonetheless, a criticism iterated by CLOKE (1989) remains valid today, namely that UK rural geography has often appropriated theories and concepts *from outside*, rather than generating its own theories and debates *from within* that could have the potential to influence discussions in other areas of human geography and other social science disciplines.

In rather sharp contrast to the UK experience, German rural geography for long has been accused of lacking sound theoretical reflection (see above). This has not changed much until today, although some younger researchers are showing growing interest in the development of suitable theoretical and methodological positions. Worth mentioning is the application of governance concepts as a framework for rural development policies (BRODDA 2007; MOSE 2010) as well as the application of actor-oriented heuristics for rural case studies (VOGT 2008). However, another characteristic seems to be more typical for the recent situation in German rural geography. Against the background of earlier foundations (such as contributions to the revitalization of villages), considerable numbers of geographers have adopted a strongly applied approach, with a focus on regional planning and regional development issues. This indicates quite strong connections of rural geographers with the planning disciplines (spatial planning, regional planning, environmental planning) as well as with public agencies involved in rural issues. Among others, concepts of landscape conservation, integrated rural development, rural tourism, demographic change in rural areas, professional qualifications of rural actors, and rural development strategies and instruments are important issues of applied research in rural geography (e.g. BRÖCKLING et al. eds. 2004). The same is true for research with an explicitly spatial focus, either directed towards specific problems of rural peripheries or those of rural areas in the vicinity of urban agglomerations (e.g. SCHMIED 2004, MOSE 2005). Increasing attention is being paid to the role of protected areas for rural spaces and regional development which is mirrored by a growing number of publications (see HAMMER 2003; MOSE ed. 2007). All of these are examples of the "applied identity" of rural geography in Germany, also exemplified by the work of the

"Arbeitskreis Ländlicher Raum" within the DGfG, founded as recently as 2004, with a number of activities especially targeting questions of rural planning and rural policy-making.

2 Genesis and history of the Anglo-German Meetings of Rural Geographers

The differences between British and German rural geography approaches highlighted in Section 1, and how to address these from an academic perspective, were the key reason for the establishment of regular meetings of Anglo-German rural geographers. The first get-together of British and German geographers working on rural issues was suggested by Doris Schmied, University of Bayreuth, and Olivia Wilson, then De Montfort University at Bedford. Both are members of the Rural Geography Research Group of the Royal Geographical Society - Institute of British Geographers and had met at various rural conferences. Moreover, both had worked on rural topics in the "other" country and had found the experience of "coming from outside" extremely inspiring. So the idea was born to arrange a meeting where rural geographers from both countries could present their own work, become aware of "uncommon" research topics and approaches – i.e. look at rural geography from another angle.

As a consequence, the First Anglo-German Meeting of Rural Geographers (4-7 September 2002) was organized by Olivia Wilson on the British side and organized and hosted by Doris Schmied on the German side. The conference was – appropriately – held in a small market town in Upper Franconia, Northern Bavaria, at the large castle of Thurnau, which also houses a branch of the University of Bayreuth. The theme of the meeting, "The Countryside in the 21st Century: Anglo-German Perspectives", was deliberately broad to allow British and German geographers to present their research priorities and compare different academic approaches. The stimulating exchange of ideas covered aspects of rural development, properties/housing, participation, food, agriculture and land use, agriculture and environmental use as well as social issues and communication (cf. SCHMIED and WILSON eds. 2005). The three days of paper sessions were followed by two fieldtrips, one to Franconian Switzerland (Fränkische Schweiz) in Northern Bavaria and one to Southern Thuringia, where participants had a chance to compare rural development problems in the Old and New Länder and meet councillors, administrators and regional managers as well as farmers.

Probably the most important result of the meeting was that the German contingent agreed to become more active and – following the British example – progress towards a formal organization of German rural geographers in a proper working group. The German "Arbeitskreis Ländlicher Raum", which was finally founded at a conference organized by Ulrike Grabski-Kieron on "Stand und Perspektiven der deutschsprachigen Geographie des ländlichen Raumes" (Position and Perspectives of German

Rural Geography) (27 – 28 May 2004) in Münster, owes a lot to the example of the British "Rural Geography Research Group".

The second meeting of rural geographers from Germany and Britain on "Rural Multifunctionality: Perspectives from Policy-Making, Implementation and Practice" was held in Exeter, 3-6 July 2004. Again co-organized by Olivia Wilson and Doris Schmied, it was hosted by Henry Buller. Some 25 participants listened to 17 papers ranging from examples of rural multifunctionality (such as tourism, quality food networks, farm building conversions, suburban extension and demographic shifts) to conceptual interrogations of the concept of, and resistance to, multifunctionality. On the final day of the conference, participants visited Dartmoor National Park and talked to farmers who had put multifunctionality "into practice".

The Third Anglo-German Meeting of Rural Geographers was prepared by Geoff Wilson on the British side, and organized and hosted by Ingo Mose on the German side. The venue was held at the University of Oldenburg (27-29 June 2008). The University is special insofar as there is no Geography department but an interdisciplinary Institute of Environmental Sciences, which includes a number of research groups such as one in spatial planning and regional sciences. These groups function as a focal point for further space-oriented disciplines and have extensive competence in issues of rural development (such as regional sociology, nature conservation, landscape ecology and environmental economics). In order to improve the co-operation of the different research groups, the Centre for Sustainable Spatial Development ("Zentrum für nachhaltige Raumentwicklung in Oldenburg" or ZENARiO) was founded in March 2009. This should further strengthen future research in rural issues at Oldenburg University. To attract as many colleagues as possible, the organizers had again agreed upon a broad theme for the Oldenburg meeting "Globalization and rural transitions in Germany and the UK", with 17 papers presented, 10 of which are included in this volume.

The Oldenburg meeting finished with a one-day field-trip to the Wesermarsch district north of the city of Oldenburg. The Wesermarsch is a peripheral rural area adjacent to the North Sea whose economy still largely depends on agriculture, particularly dairy farming. However, the region experiences processes of agricultural decline and subsequent agricultural diversification (e.g. quality production or rural tourism). Along the River Weser, which forms the eastern border of the district, a number of old industries (such as shipbuilding) are undergoing considerable changes, while in the area on the North Sea Coast, which belongs to the Wadden Sea National Park of Lower Saxony, tourism has become the major source of employment and income. The field trip took conference participants to a number of selected sites where they could get impressions of traditional activities such as peat cutting or fishing as well as of recent developments such as the conversion of a wind mill into a cultural centre, and the diversification of a dairy farm by adding a "milk bar" for cyclists.

3 Structure of the book

Globalization affects all aspects of rural development and life. It was, therefore, to be expected that a conference on "Globalization and Rural Transitions in Germany and the UK" would cover a fairly wide range of topics. Participants of the meeting highlighted very diverse aspects of global processes and local/regional reactions to them. An emphasis on two major areas emerged, which is reflected in the grouping of the contributions collected in this volume. The first section of papers deals with different multifunctional agricultural pathways and farming alternatives, while the second part of the book examines wider rural issues and processes in a globalizing world.

The following papers deal with different multifunctional agricultural pathways and farming alternatives.

Geoff WILSON and Florian DÜNCKMANN start with a theoretical contribution on multifunctionality. This topic, which for some time has been central to rural studies and EU agricultural policy, has gained even more attention due to the renewed emphasis on productivist farming because of the recent global crises and the increased demand for food and biofuels. The authors discuss a normative concept of multifunctionality, which has been used to distinguish between weak and strong multifunctional pathways at farm level, and apply it to look for similarities and differences between the UK and Germany. So far these have not been sufficiently investigated, and WILSON and DÜNCKMANN propose a joint comparative study and the application of appropriate "multifunctional" research methods in the future.

Annabelle BOULAY and Guy M. ROBINSON build on these ideas in their paper on "Dairying under Attack! Farm Survival Strategies on Dorset Dairy Farms during the 'Dairying Crisis'". They present the results of an empirical study of farmers in west Dorset, one of the main dairy areas in the UK. As a consequence of the introduction of the milk quota in 1984 and the subsequent cost-price squeeze, many farmers went out of business in the 1990s and 2000s. The majority of those who did not had to go beyond the traditional production of milk to be able to stay and work on the land. Most of them applied different diversification strategies (structural, enterprise or agricultural diversification, pluriactivity), often in combination.

Bruce SCHOLTEN provides a further analysis of dairy farming under global pressures. He focuses on the connection between milk production and energy, in particular between pastures and biofuels, using Germany, the UK and USA as examples. SCHOLTEN argues that "peak oil" and the related boom in crops for biomass have generated an increased demand for land, which collides with consumer wishes for a more animal-friendly out-door production of livestock. SCHOLTEN highlights the displacement effect of biofuels and discusses factors affecting land use developments in the future.

In their chapter, Brian ILBERY and Damian MAYE report results from a research project on "The Changing Dynamics of Organic Farming in England

and Wales". Since the early 1990s (particularly between 2000 and 2004), organic farming has expanded rapidly, but the resulting geographical distribution is uneven. A fairly clear dividing line between Brighton and Bangor separates the highly productivist largely "organic-free" eastern and north-eastern part of England from the south-western part of England including Wales, where organic farming has become an important "unconventional" way of agricultural diversification. The authors then focus on one significant sub-cluster in Sussex, south-east England, and present some provisional findings on producers' motives, supply chain dynamics and rural development impacts.

In her paper "Globalization the Salmon Way and Regionalization the Carp Way: Experiences with Aquaculture in Scotland and Bavaria", Doris SCHMIED leaves the land-based forms of multifunctionality/diversification and looks into two very different aquacultural food systems, which can be taken to represent the opposite ends of the global–local (in German "regional") spectrum. The author uses salmon farming in Scotland and carp farming in Bavaria to test common notions of globalized versus localized food production/consumption, before she explains the different pathways of the two fish farming systems and the consequences for overall rural development in the case study areas.

The second part of the book moves away from agricultural multifunctionality and examines wider rural issues and processes in a globalizing world.

The first contribution in this section is by Ortwin PEITHMANN, who describes "Planning Problems in Areas of Intensive Change of Landscape". One of the major obstacles to sustainable development in Germany's rural areas is pronounced land consumption. Yet, while the debate has mainly focused on land use changes in the so-called inner zone of municipalities (building of houses and roads), the outer zone around village settlements has received little attention so far. Here, German planning law permits exceptions (also for formerly unknown land uses such as over-sized agricultural buildings, windmills, biogas plants, solar installations or golf courses), which today cause massive changes to the rural landscape that had not been envisaged at the time of legislation. PEITHMANN, who uses the example of the north-western part of Lower Saxony, therefore argues in favour of urgently extending the planning standards required for the inner zone to the outer one.

The next two contributions are case studies of two German regions which illustrate the unequal demographic and economic development of rural areas under globalization. The first example is a success story: Christian KRAJEWSKI uses the Sauerland, a mountainous region in North Rhine-Westphalia (Nordrhein-Westfalen), to demonstrate that rural areas can have dynamic development pathways and even outdo important metropolitan regions such as the Ruhr Valley. For several decades, the Sauerland has experienced a positive demographic development due to high birth rates and high rates of in-migration, and has become an attractive region to visit and to live in. This has been due to the successful economic development of

the area, especially of the vibrant automotive industry. For the future however, the region will need even more innovative policy measures to counteract the increasing international competition and the expected demographic changes, i.e. population decline and rapid ageing.

The second example is the exact opposite of a success story. The region that Anja REICHERT-SCHICK analyzes in her paper "'Dying villages?': The Effects of Demographic Change on Rural Settlements in West Pomerania" has lost population for several decades. However, in the former GDR rural areas had still been given preferential political treatment and been shielded from negative global influences. After German reunification and the following system transition, villages in West Pomerania (Vorpommern) lost many functions, and the economic decline accelerated. REICHERT-SCHICK documents the ensuing depopulation and its impact on infrastructure and services as well as on the physical environment. She also presents the most important process chains responsible for the decline, namely the economic-social process chain, the brain drain process chain, and a process chain that reduces the quality of life. The final outcome of the deterioration process is settlement regression and, in the not too distant future, deserted villages – unless an unlikely dramatic change of circumstances in and policy for the region should occur.

In the last two contributions the focus shifts to rural reactions to globalization. Michael WOODS points out in his paper "Rural Protests and the Enigmatic Importance of Globalization" that, although farmers in Britain like elsewhere have been at the forefront of resistance against globalization, the exact nature of global influences on their motivation and actions has not been sufficiently understood. He shows that British farmers have framed the pressures created by trade liberalization, the ever-growing power of global corporations, and the increasing spatial interrelatedness indirectly and "translated" them into a national context. Although British farmers have distanced themselves from anti-globalization movements in other countries, their emphasis on "the local" as an antithesis to "the global" contributes to the shaping of an emergent hybrid form of "global" countryside.

In the final contribution to this book, Birte NIENABER looks into a specific aspect of resistance against globalization. Regional currencies, which in the last few years have become very popular in Germany, are often seen as an important means of strengthening regional economies vis-à-vis globalization pressure. The author asks whether regional money can really be an instrument of rural development to counter negative tendencies. Based on a three-year empirical study in Germany, she argues that the economic impact has been exaggerated, as regional currencies are mainly thriving in the more prosperous regions, but so far not in the lagging ones. By contrast, the contribution of regional currencies to social development (via regional identity building and support for social projects) seems to have been much more successful.

4 Lessons from the Third Anglo-German Meeting of Rural Geographers

The 3rd Anglo-German rural geographers meeting and contributions to this book demonstrate again that – in spite of many common interests and features of rural geography in both countries – there also remain clear differences in the research interests and approaches between Germany and Britain. While both German and British geographers have recognized the importance of globalization and rural transitions as key research topics in both countries, different empirical, conceptual and theoretical approaches remain evident. For example, three facets of the research of German rural geographers are evident:

1) Many German geographers still place considerable emphasis on "the region", the uniqueness of its character, the nature-human interplay and the pertinent changes over time. This regional interest often overshadows interest in the "rural". Or, putting it differently, the regional or even *länderkundliche* (ideographic) tradition is still very much noticeable in German rural geography, suggesting stronger remnant linkages to historical traditions of "regional geography". This may also be the reason why German authors use maps more frequently than their British colleagues to "visually" support their arguments.

2) Another German "speciality", which is closely linked to the regional approach, is the emphasis on the *Landschaft* (landscape). Ever since Alexander von HUMBOLDT defined *Landschaft* as comprising the "total character of an earth region", it has been a focus in German geographical research. Rural geographers are especially interested in the historical development of landscapes as well as in landscape and nature conservation issues.

3) The third aspect is that German rural geographers rate empirical work very highly, and – although some of it may be (too) descriptive - there is also a strong focus on applied/planning issues. This also includes studies on the practicalities of how rural areas are being managed (e.g. the role of local political institutions, administration and stakeholders, civic engagement of village groups), a topic which, arguably, deserves more attention in British rural geography research.

In contrast, there are three characteristics of the work of British rural geographers that are apparent in this volume:

1) British rural geography is more closely aligned with **rural sociology** than German rural geography. This stems largely from the different historical pathways of evolution of rural geography in both countries, with sociological influences playing a major role in the British context since the 1950s (see Section 1). As a result, there is more emphasis on understanding decision-making processes of individuals (e.g. farmers) or groups of rural stakeholders (e.g. rural businesses), on understanding food consumption patterns and the importance of agro-commodity

chains, or on socio-psychological patterns and processes associated with rural actor spaces.

2) British rural geography may be more concerned with political questions and how they shape rural spaces, influenced by debates in *political science* and *political theory*. As a result, more emphasis is often placed on issues of governance, the (often negative) influence of government policies on rural actors and spaces, and the role of rural actors in shaping policies for the countryside.

3) Associated with this strong association with rural sociology and political science, British rural geographers seem to have made more advances in theorizing rural topics than their German colleagues. This concerns particularly issues discussed in this book related to multifunctionality, globalization and conceptualizations of rural transitions. However, as highlighted above, the drawback is also often less emphasis on empirical richness, a move away from local/regional case studies and a relatively dearth of British research on applied rural planning issues. As contributions to this book highlight, the result may be a conceptually and theoretically rich rural geography, but one that may have slightly lost touch with transitional patterns and processes "on the ground" (see also CLOKE 2003; CLOKE et al. 2006; WILSON 2007 and 2009).

The key question – and arguably a key theme for the fourth Anglo-German rural geographers meeting – is whether there is anything that German and British rural geographers can learn from each other? The key to a more successful integration between the long-standing rural research traditions in both countries will undoubtedly lie in maintaining country-specific research traditions while, at the same time, attempting to incorporate approaches and methods that haven proven successful in the "other" country. Thus, German rural researchers would undoubtedly benefit from adopting a more critical and conceptually and theoretically better informed approach that would enable researchers to interpret findings from the research in a different light, while British rural researchers could benefit from "rediscovering" the importance of empirically-rich locally/regionally grounded research that has (more) practical benefits for policy and planning. This will undoubtedly help drive rural research agendas in both countries forward. The Anglo-German meetings have clearly highlighted the potential for comparative cross-boundary case study research. This is true both for the numerous topics as well as methods that are shared between both German and British researchers – as evidenced by contributions in this book. Yet, although the general value of comparative case studies has been underlined repeatedly over the years, hardly any such research seems to have been put into practice. This is particularly surprising given the fact that the ongoing process of European integration will require more comparative investigations for better cross-European understanding and policy-making. We argue that, similar to the existing Anglo-French or Anglo-American-Canadian rural geographers' meetings, the Anglo-German meetings of rural geographers offer great potential for such collaboration and should, therefore, continue to be held on a regular basis.

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From "Weak" to "Strong" Multifunctionality? – A Research Framework for Assessing Farm-level Multifunctional Pathways in the UK and Germany

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Abstract

The aim of this contribution to the discussion of Anglo-German agricultural and rural themes is to analyze conceptually issues surrounding multifunctional agricultural pathways in the UK and Germany, and to propose a framework for closer investigation of multifunctional agriculture in the two countries. First, we will discuss recent debates on the conceptualization of what "multifunctional agriculture" means, especially with a view towards using a "normative" view of multifunctionality. We will then discuss similarities and differences in multifunctional pathways between the UK and Germany. The chapter concludes with a discussion of key steps necessary for the development of a comparative study on multifunctional quality in the UK and Germany, arguing that any assessment of multifunctional agriculture needs adoption of "multifunctional" research methodologies.

1 Conceptualizing multifunctional agriculture

The debate surrounding multifunctionality continues to dominate academic and policy debates in the rural field (see MANDER et al. eds. 2007; WILSON 2008a and 2008b; 2009, for recent interventions). In recent years, this has assumed ever greater importance as global agriculture is facing renewed productivist pressures based on rising demand for agricultural commodities in emerging markets (especially China and India) and associated rises in commodity prices (e.g. doubling of wheat price in 2007), and because the planting of crops for biofuel is increasingly challenging global food production spaces (LANG and HEASMAN 2004; BREUER and HOLM-MÜLLER 2006). This is also beginning to have repercussions for farm trajectories in the UK and Germany, where farms that had begun a process of disconnection from the productivist regime are re-intensifying production (WILSON 2007; DÜNCKMANN 2007). This suggests a kaleidoscope of farm transitional pathways in both countries. While some farmers have continued with a productivist (or even super-productivist; cf. HALFACREE 1997) strategy, others have opted for pathways closer to the non-productivist end of the decision-making spectrum including the commoditization of the countryside and a re-evaluation of the meaning of "farming" itself (MARSDEN 2003; LOIBL 2007). It is this wide spectrum of decision-making opportunities open to farmers that is referred to as the "multifunctional" spectrum of decision-making (HOLLANDER 2004; HOLMES 2006; WILSON 2007 and 2008a).

The last twenty years or so have seen the use of the notion of "multifunctional agriculture" in a wide variety of contexts, including economic approaches that focus on "externality problems" (e.g. VATN 2002; VAN HUYLENBROEK and DURAND eds. 2003), policy-based approaches that see the policy environment as a key driver for multifunctionality (e.g. POTTER and BURNEY 2002; HOLLANDER 2004; POTTER and TILZEY 2007), and "holistic" approaches that also incorporate the strengthening of social, economic and environmental capital and changing societal perceptions of farming as key components of multifunctionality (e.g. MARSDEN 2003; CLARK 2005). Yet, although multifunctionality has been much debated, it is remarkably poorly researched in terms of decisions, behaviour and intentions of farmers and those stakeholders who influence farming decisions at the grassroots level (WILSON 2007 and 2008a). This is particularly surprising as it is at the farm level that the most *direct* expression of multifunctional action and thought can be found (CLARK 2005). In addition, there are only few studies that have used a comparative approach within Europe to analyse possible differences in multifunctionality pathways in different countries of the EU (e.g. VAN HUYLENBROEK and DURAND eds. 2003; EU-funded MULTAGRI project). BULLER (2005: ii), therefore, suggested that "what is missing is a more holistic evaluative framework for assessing the broader multifunctional contribution of agriculture". This critique is reflected in recent calls for a more *normative* evaluation of multifunctionality that may be applicable in various EU contexts (e.g. VAN HUYLENBROEK and DURAND eds. 2003). The recently suggested normative view of multifunctionality as a complex transition within a multifunctionality *spectrum* bounded by *productivist* and *non-productivist* action and thought provides a particularly useful conceptual

framework that can be used in any European context to analyse empirically different multifunctional trajectories of rural districts (HOLLANDER 2004; HOLMES 2006; WILSON 2001 and 2007). This view of multifunctionality enables a normative conceptualization of *weak, moderate* and *strong multifunctionality* pathways for individual farm-level transitions concerning the intensity of multifunctional farming strategies.

2 A normative view of multifunctionality?

The normative view argues that strong multifunctionality is the "best" type of multifunctionality with the best social, economic, moral and environmental *quality* (see also HOLMES 2006). The key drivers of *strong multifunctionality* are seen here as positively characterized by: high environmental sustainability (Wilson 2007); low farming intensity and productivity (EVANS et al. 2002; PRETTY 2002); "deep" diversification (KNICKEL et al. 2004); short food chains and high(er) food quality (MARSDEN 2003; GOODMAN 2004); weak integration into the global capitalist market (GOODMAN and WATTS 1997; HOLLANDER 2004; MCCARTHY 2005; WILSON 2001 and 2007); revaluation of existing farm household knowledge (BURTON and WILSON 2006); new perceptions of farming that go well beyond productivist food and fibre production (CLARK 2005); local and regional embeddedness (strong governance structures) (PRETTY 2002; CLARK 2005; WILSON 2007). Weak multifunctionality, meanwhile, can be conceptualized as the spectral opposite of above characteristics (e.g. low environmental sustainability, high farming intensity [productivism], shallow or no diversification, long food chains and poor food quality, agricultural processes driven largely by profit-driven capitalist processes, etc.).

Inevitably, normative assumptions about "good" and "bad" or "strong" and "weak" agricultural pathways are linked to subjective assumptions about the "quality" of a system and are, therefore, open to criticism. Indeed, any discussion on "quality" needs to acknowledge the subjective nature of the term. As PIRSIG (1974) argued, 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 (i.e. "weak" or "strong" multifunctionality) is, therefore, almost impossible. 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. Here, we will be concerned with qualities associated with what could be seen as "good" or "bad" rural pathways – in other words, we will adopt an explicitly normative view about what could be seen as an "ideal" rural system (see also PARNWELL 2007).

A few points need to be considered when conceptualizing "strong" and "weak" multifunctionality. First, any normative assessment of multifunctional "quality" is imbued with pitfalls linked to cultural preferences about "good" or "bad" rural development pathways. Although our UK-German comparison below will attempt to adopt an objective stance with

regard to the identification of the "ingredients" for strong multifunctional quality, inevitably some of the indicators discussed here will not necessarily be applicable in all rural community settings. In addition, what may be strong multifunctionality for an individual may not be good for the household and possibly even less so for the rural community.

Second, a particularly problematic issue – conceptually as well as morally – is the need to acknowledge that strongly multifunctional systems, despite all their positive attributes regarding community resilience based on strong economic, 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). The key, therefore, is not to reify certain multifunctional "quality systems" over others. Despite this caveat, certain systems – such as super-productivist rural systems evident in both the UK and Germany – are often associated with weak multifunctional quality in which social and environmental capital has been particularly eroded.

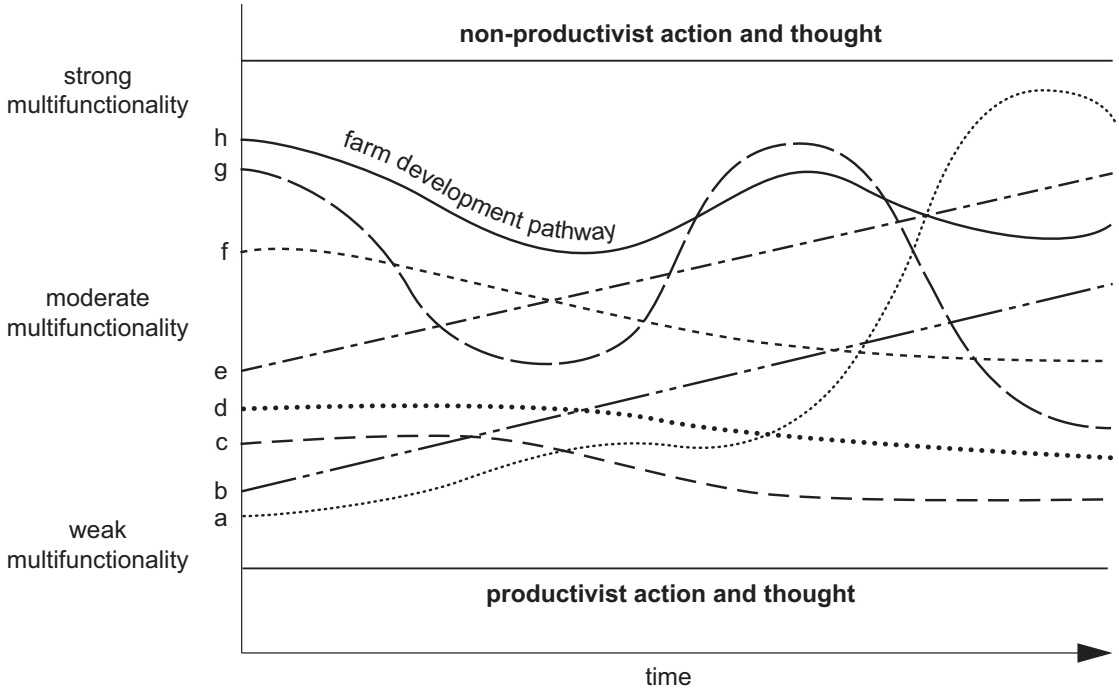
Third, normative judgments about "good" or "bad" multifunctionality can form important baselines for policy action, as discussed below. Yet, the situation is complicated by the fact that multifunctionality means different things to different people – in other words, a complex geography of policy needs with regard to harnessing multifunctional quality is emerging. 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, therefore, be interpreted as a form of "resistance" and coping strategy (MCCARTHY 2005), where increasing *economic capital* is the ultimate goal in the first instance. For many rural communities in the global North, often characterized by the erosion of *social* and *environmental* capital, meanwhile, policies have to increasingly focus on social and environmental aspects of community survival.

Fourth, any framework attempting to identify the characteristics of multifunctional quality based on a normative framework needs to acknowledge the importance of a researcher's positionality and cultural embeddedness when making value judgments about rural change. A more reflexive approach will have implications for our construction of knowledge, in particular related to agricultural sciences, rural studies and cognate sub-disciplines such as human geography (WILSON 2008b) – issues that are amply evident throughout this publication. Approaching multifunctionality from a mono-dimensional and mono-causal perspective is likely to generate simplistic evaluations of, and solutions for, the challenge of raising multifunctional quality. Echoing DEMERITT's (2009) recent call, only through a *multi-disciplinary* approach will we be able to fully understand multifunctional pathways and drive forward constructive agendas for the future (see discussion of methodology below). As strong multifunctional quality may mean a relative withdrawal of productivist agriculture, it is evident that "classical" – often technocentric – agricultural science approaches towards understanding rural change may be less relevant in

future. As a result, other disciplinary approaches rooted, for example, in rural studies, sociology, psychology, environmental sciences or human geography may take on a more important role. In particular, the use of so-called "expert knowledges" to assess multifunctional quality may need to be questioned at all scales, and methodologies involving both "experts" and "non-experts" may assume greater importance (WILSON 2008b). Just as the notion of strong multifunctional quality means a blurring of the boundaries between "traditional" sectors in rural areas (such as agriculture) and "new" activities (such as the location of high-tech industries in rural settings), the possible transition towards strong multifunctional quality concurrently necessitates a readjustment in the way academics and scientists will research rural-level transitions in the future. This has important repercussions for the selection of appropriate methodologies to assess multifunctional quality, and it is evident that any investigation of multifunctional quality requires the use of "multifunctional" methodologies (see below). As the 3rd Anglo-German Rural Geographers' Meeting has shown (see introductory chapter), rural geography, at the interface between the natural and social sciences (DEMERITT 2009), may emerge as an ideal disciplinary base for such an analysis.

As Figure 1 shows, the normative view of multifunctionality allows for the juxtaposition of temporal and spatial pathways of agricultural decision-making which, in turn, can be used to explain individual farm development pathways. Building on VAN DER PLOEG's (2003) notion of different "farming styles", the figure shows that farm development pathways can span the entire multifunctionality spectrum (e.g. farm "a"). It would be rare for a farm to stay at the same level for a long time period. Although changes may be small (e.g. farms "d" or "f"), subtle changes in the position of a farm in the multifunctionality spectrum will *always* occur, based on changing personal, farm-level or external circumstances (e.g. MEERT et al. 2005). Most *agri-businesses*, for example, are likely to be located towards the weak end of the multifunctionality spectrum due to their profit-maximizing productivist orientation (FRESHWATER 2002; WALFORD 2003). However, agri-businesses may also embark on moderate or even strong multifunctionality pathways with *some* of their farm decisions (VAN DER PLOEG and ROEP 2003; MARSDEN 2003). *Lifestyle* or *hobby farms*, meanwhile, may be most closely linked to the non-productivist end of the spectrum (HOLLOWAY 2002; MATHER et al. 2006). As these farmers adopt farming as a hobby and do not rely on the sale of food and fibre for economic survival, they can focus on agricultural land as a *consumption* good rather than as a *production* asset (BOHNET et al. 2003). Yet, hobby farming should not be over-romanticized as the "most" strongly multifunctional farm type, as they may also straddle moderate multifunctionality pathways, especially as these farmers are often urbanites who have not been brought up in the region where they bought their farm (the strong multifunctionality dimension of "local embeddedness" may, therefore, be relatively weak).

Figure 1
Multifunctional farm-level transitional trajectories

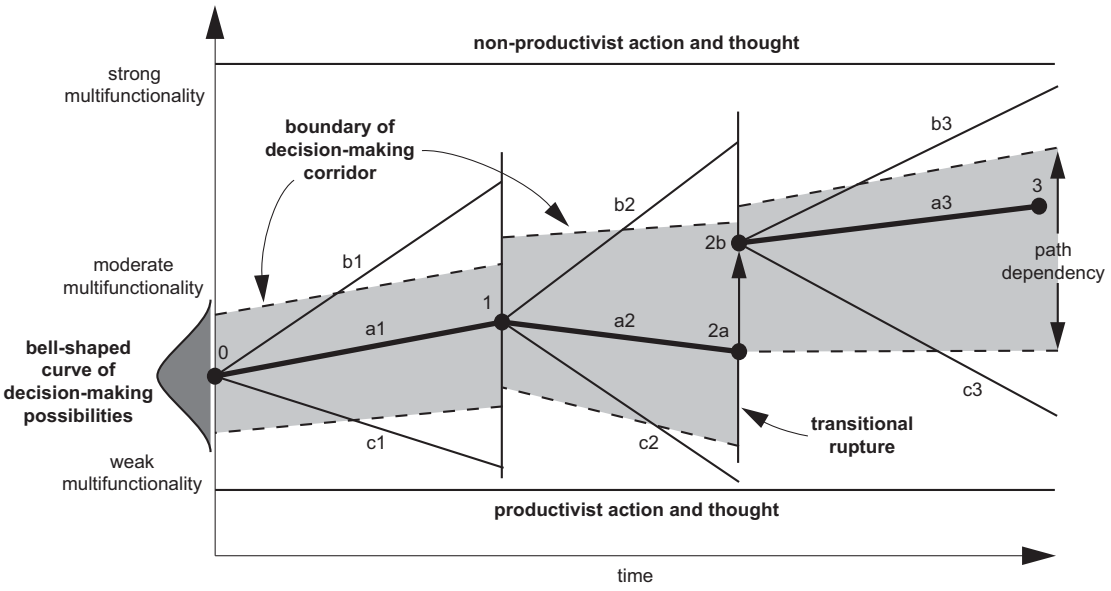


Source: WILSON 2007, 284

Drawing on concepts of complexity theory (O'SULLIVAN 2004) and evolutionary economic geography, the concept of *path dependency* is central to the conceptualization of farm level transitional trajectories (Figure 2). Path dependency relates to both the starting position of a given system and its history and geography. The probability of a system (be it a farm, a region, or whole economic sector) making an extreme change away from its starting point is, probalistically, low (bell-shaped curve of decision-making possibilities and low probability of pathways b1-b3 and c1-c3 in Figure 2). Thus, when analyzing the transitional trajectories of farms inside the multifunctionality spectrum, farmer's decisions are not only shaped by cultural framing (THRIFT 1999). Since the history of preceding decision-making trajectories remains inscribed in the "memory" of the farm, the range of possible future trajectories at a given time (i.e. from nodal points 0-3 in Figure 2) is constrained by a 'decision-making corridor'. The boundaries of this corridor may widen over time as the influence of system memory decreases and new constrains and opportunities act as cumulative new drivers. In some instances (e.g. farm sold; land use changes to activities beyond agriculture) immediate factors may lead to a fundamental rupture in the transitory trajectory and shape of the decision-making corridor (shift from nodal point 2a to 2b in Figure 2). However, path dependency at this point is still partly defined by characteristics (and system memory) of the farm itself. Thus, "geography matters" as the choice of strong multifunctionality pathways may not be entirely dependent upon the farm decision-maker but on the locational multifunctionality potential of the farm. In addition, individual farm development pathways also depend on structural factors: first, on path dependency characteristics of the whole

communal, regional and national context in which farmers' activities are embedded (MARSDEN 2003) and, second, on the "thickness" and co-evolution of the locally-specific institutional framework whose drivers (e.g. extension services, street level bureaucrats, research institutes) are tied together with the farmers into regional networks of collective learning.

Figure 2
Transitional shifts, decision-making corridors and transitional ruptures



Source: WILSON 2007, 288

Despite of the multitude of internal and external drivers influencing individual (and collective) agricultural pathways, recent studies nonetheless highlight that for many farmers (at least in the European Union), the boundaries of transitional corridors may be getting narrower (MARSDEN 2003; WILSON 2007, 2008a and 2008b). This is linked to forces often beyond the control of farmers such as climate change (although this may also offer additional opportunities in some farming regions), the impact of global policy compacts such as agreements on tariffs and trade by the World Trade Organization (POTTER and BURNEY 2002), and, most recently, the impact of the global economic recession which may lead to a productivist "backlash" with a concurrent narrowing of non-productivist opportunities for many farmers.

3 Multifunctional pathways in the UK and Germany: convergence or divergence?

The normative framework of multifunctionality can provide a conceptual framework for the empirical assessment of multifunctional quality of any agricultural/rural region. In the context of the general Anglo-German rural theme explored in this book, the UK and Germany would be particularly appropriate for a comparative this study because of

1) similar endogenous (e.g. incentives for extensification) and exogenous policy pressures (e.g. through the CAP and the WTO) forcing farmers to rethink farm management strategies) (DÜNCKMANN 2004a; POTTER and TILZEY 2007);
2) a wide spectrum of productivist and non-productivist pathways available to farmers in both countries (WILSON 2008a);
3) complex institutional and actor networks within which farmers are embedded (CLARK 2005; FEINDT and LANGE 2007);
4) a similar loss of farming's relative position and importance within wider society (WINTER 1996; WILSON and WILSON 2001).

Any comparison between German and British agricultural pathways needs to take into account the similarities and dissimilarities regarding the national conditions of rural development in general and of farming in particular. Germany and Great Britain can both be described as postmodern societies in which counterurbanization and rural restructuring fundamentally shaped the development of rural areas during the last decades (LASCHEWSKI 2002; MARSDEN 2003; WOODS 2005). However, when looking closely at the political, economic, and socio-cultural conditions under which farmers and other rural actors have to make their decisions, there exist fundamental differences concerning the system of policy making and regional planning, the agricultural policy, the regional dynamic of economic and demographic change, or the cultural meaning of rurality and farming.

When comparing the national structures of state authority, it is important to highlight that, in contrast to Britain, Germany is a federal state and hence has a distinctly decentralized system of planning with a nested system of different layers of political decision making. Alongside the national government, the federal states (*Bundesländer*) and the municipalities (*Gemeinden*) are equally important. It is the duty of the central government, first of all, to define the general guidelines of policy. Recently the German Federal Office for Building and Regional Planning laid out the general principles of the future spatial development in the whole Federal Republic of Germany (BMVBS 2006). Under the headline called "Preserving Resources, Designing Cultural Landscapes" the report identified two general types of rural areas: those regions suitable for arable agriculture and the intensive production of food and fibre as well as those regions with a potential for extensive agriculture and tourism. This differentiation resembles the distinction between productivist or strongly multifunctional and post-productivist or weakly multifunctional landscapes (Wilson 2001). It remains to be seen, how this general principle of spatial development will be translated into actual guidelines for planning. However, if any tangible consequences for regional development will result from this directive they will have important effects on the spatial differentiation of multifunctional pathways of farms.

The federal states possess a large part of the competence to decide about issues of spatial and environmental planning or social policy, as well as having the capacity to initiate own programs of regional development.

Furthermore, the federal state determines the shape and size of the municipalities, which constitute the third autonomous layer of state authority (WILSON and WILSON 2001). In Germany, this local municipal level has the authority over the development and planning of housing. However, the municipalities generally stand under the close supervision of the federal states and the regional planning authorities, which determine the location of growth poles and thereby limit the possibilities of local decision making. Representing an autonomous level of the state the municipalities, nevertheless, possess some room for manoeuvre. With this, their competition for wealthy inhabitants, services, or jobs can have strong implications on the course and the intensity of sub- and exurbanization as well as on rural development in general. In Great Britain, in contrast, decisions about new sites for housing are generally taken at the regional level of the county. The British state is, therefore, able to concentrate the bulk of new housing in specifically targeted places and keep small villages (largely) free of new building activities (WINTER 1996; EVANS et al. 2002). This more centralized planning structure, in addition to the presence of wealthy exurbanites, has led to the massive increase in real estate prices especially in rural areas of southern England. Thus, the intensive debate about rural gentrification and the service class colonization of rural areas which has dominated British rural geography during the 1990s was to a large part rooted in the particularities of the rural fringe of the global city region of London (CLARK 2005; WOODS 2005).

Nowadays, a considerable part of political decision making and planning in and for rural areas has been shifted away from the classical territorial state authorities towards less centralized and formalized arenas of rural governance. In Germany, the second pillar of agricultural policy represented by the ILEK (*Integrierte Ländliche Entwicklungskonzepte*, Integrated Concepts of Rural Development) is gaining more and more importance in rural planning (GRABSKI-KIERON and KRAJEWSKI 2007). These integrated programmes explicitly aim at the creation of regionally embedded networks and, therefore, can play a decisive role in the formation of distinct rural milieus. These, in turn, may constitute an important cultural background of farmers' decision making. In addition to these rather indirect impacts on multifunctional pathways, many of these Integrated Concepts of Rural Development contain explicit measures to encourage multifunctional agriculture, like support for rural tourism or direct marketing.

While this paradigm shift in the institutional framework of rural planning "from government to governance" can be detected as well in Germany as in Britain, there are differences concerning the position of rural and agricultural issues in these two countries. In contrast to the importance that is given to problems of the countryside in the British context, rural issues in Germany enjoy rather less attention in the political arena. As LASCHEWSKI (2002) points out, "rurality" is a secondary concept in Germany in comparison to the concept of the "region" which has traditionally attracted the main focus of research. In this sense, "the region" generally comprises one or more central cities behind which rural areas and their specific conditions often get overlooked or are viewed in a merely functional way of

providing services to urban areas. Further, the aforementioned principles for spatial planning laid out by the Federal Office for Building and Regional Planning are principally based on the principle of "strengthening the strengths". This suggests that in the future the political focus will turn even more to urban areas, with the result that regional planning will pay even less attention to rural areas.

This political disregard in relation to rural issues in Germany somehow relates to a socially embedded view of the countryside as economically and culturally backward and – at the same time somehow contradictory to this – trouble-free in terms of social exclusion. Interestingly, statements often refer to either the economic and social blight of whole rural regions, especially those at the periphery of East Germany, or to problems of social exclusion in urban areas. This suggests that, overall, the awareness for the specific forms of individual marginalization and poverty in rural areas is more or less inexistent in Germany, which stands in sharp contrast to rural research foci in the UK (see for example, recent articles in "Journal of Rural Studies" or "Sociologia Ruralis"). This does not mean that poverty at the individual and household level does not exist in the German countryside. As SIGEL (2008) recently pointed out, the number of farmers living beneath the poverty line may be much greater than generally claimed, since there exist considerable cultural and moral barriers that prevent farmers from admitting their difficult situation. However, poverty does not fit into the image of a "good farmer".

The German countryside is a patchwork of different rural areas with very diverse historical backgrounds. Traces of these historical pathways are still visible today, i.e. in the structure of farm sizes or in the social stratification of villages. BOHLER (2005) differentiates between three main types of socio-agrarian organization: a) regions with a dominance of peasant farming, b) regions where the constant division of farmland between all sons of the family led to the emergence of many small-scale farms that are often run as part-time farms, and c) regions with large estates and a strong social stratification between the landed gentry and agrarian workers. Although the times of the typical landed gentry, like the Prussian *Junker*, are over, the different historical backgrounds of social equality or inequality can still have strong implications on the local balance of socio-political power, i.e. on the way in which farmers are able to build up or sustain their local hegemonial position, or on the culturally coded traditions of cooperation and/or competition between local farmers (WILSON and WILSON 2001).

Looking into the more recent past, there is another historical element which is important for the rural development in Germany: the alternative green movement of the 1980s. Former participants of this movement – many of them are now academics with high incomes - still hold ideals of ecological modernization, regionalization and social justice. For many, rurality represented a means for realizing alternative lifestyles around organic farming and a new relationship with nature. Today, the heritage of these somehow utopian ideas is still alive and visible. Especially adjacent to metropolitan areas, but also in peripheral areas, social networks of people

holding these ideals often constitute a growing and very influential element on the village and municipal level. However, the importance of this distinctive subculture in rural society varies regionally: one example of a massive influence of this group is the Wendland near Hamburg, where the seemingly endless conflict about a dumping site for nuclear waste led to a growing and strengthening of alternative networks. Today this subculture constitutes a central and powerful influence for the development of the region.

The importance of this alternative green movement and its impact for rural development cannot be underestimated. This can be exemplified looking the events in 2004 after the outbreak of the foot-and-mouth-disease in Germany. The government – a coalition between the Social Democratic Party and the Green Party – decided to suspend the former Ministry for Agriculture and to turn it into the new Ministry for Consumers Rights, Nutrition and Agriculture. Renate Künast (Green Party) was announced as the new minister. With this, a woman who came from an urban background and who represented the alternative movement took over national agricultural policy. This event may be interpreted as a clear expression of a transition from a productivist to a non-productivist rural regime (see Figure 2 above). Nonetheless, this agro-political "revolution" was not without preconditions. Similar "petty revolutions" are taking place all over in the local politics of the countryside, as new groups are coming to political power and putting the former hegemony of the traditional farming elite to an end (DÜNCKMANN 2004b and 2009).

This discussion, as well as other chapters in this volume, highlight that there are elements of convergence and divergence in multifunctionality pathways between Germany and the UK. Different socio-political pathways, as well as different historical legacies with regard to rural-urban interlinkages, have led to differing pathways with regard to the position of farmers in German and UK society, and different opportunities with regard to rural and agricultural development pathways (see other contributions in this volume, in particular WOODS and PEITHMANN). However, there are also many similarities. Rural actors in both countries continue to be heavily influenced by EU-based policy decisions which, as many commentators have highlighted, may restrict multifunctional transitional opportunities (WILSON and WILSON 2001; WILSON 2007). In addition, institutional frameworks regulating rural processes may be increasingly converging based on common challenges faced by both British and German rural stakeholders, including accelerating globalization processes and external threats such as climate change impacts or the volatility of global agricultural markets at times of severe economic recession.

Building on above discussion, an investigation based on two case studies in the UK and Germany could focus specifically on the

1) investigation and comparison of the importance of national/international policies for on-farm multifunctional pathways in the UK and Germany;

2) assessment of the co-evolution of farming practice with institutional frameworks in both countries (i.e. how institutions affect farm-level multifunctionality pathways and how these pathways, in turn, affect institutional decision-making);

3) analysis of the role of cultural drivers for multifunctional decision-making at farm level (based on BURTON and WILSON (2006), specific emphasis could be placed on the different cultural role of agriculture in UK and German society and farm-level views about the meaning of being a "farmer");

4) development of a typology of farm-level transitions based on a farm's position on the multifunctionality spectrum.

The latter should include analysis of the link between multifunctionality and "on-farm factors" (e.g. farm type, farm size, ownership types, farm household characteristics, etc.). Building on the EU-funded MULTAGRI project, this typology could then be used to inform national and EU policy-makers about possible strategies and incentives needed to shift farming systems towards stronger multifunctional pathways in both the UK and Germany.

4 The need for "multifunctional" research methods

Analysis of the importance of national/international policy, institutional and cultural drivers in influencing farmers' multifunctional decision-making behaviour necessitates the use of a complex multi-method approach. Building on previous research that has attempted to unravel farm decision-making pathways (e.g. ILBERY 1991; Ward 1993; WHATMORE 1995; MARSDEN 1999; WILSON and HART 2000; BURTON 2004; see also EU-funded MEDACTION and MULTAGRI projects), a comparative study on multifunctionality should use a combination of quantitative and qualitative research methods. Five key methodological steps should inform such a project: (1) a case study approach; (2) assessment of existing farm-level data and statistics for the two case study areas; (3) a questionnaire survey; (4) in-depth interviews; (5) shadowing farmers in their day-to-day activities. Each of these methodological steps would enable thorough cross-checking of research results, contextualization with other research on multifunctionality, generalization of research results beyond the confines of the case study area, and future replicability of research methods in different geographical contexts.

Data generation could be based on a case study approach in both countries. Both areas have to contain: (1) large enough number of farms to enable a statistically relevant questionnaire-based analysis; (2) a variety of settlements including urban areas, areas with tourism potential (e.g. near the coast or a national park), and relatively "remote" and poorer rural areas where access to strongly multifunctional opportunities may be more difficult (e.g. poor access to specific opportunities for direct sale of produce; few opportunities for on-farm tourism accommodation); (3) multiplicity of

different farm types (e.g. arable, mixed, livestock) for assessment of how different farm types respond to the various drivers of multifunctionality.

A questionnaire would be a useful methodological tool in both the UK and German case studies to allow direct comparison of results. The questionnaire should be delivered face-to-face and should target the *principal operator* of the farm. It would provide a broad-based (horizontal) quantitative data base with which farm- and farmer-related factors affecting multifunctional decision-making can be assessed (preferably past and future 10 years). The questionnaire would complement existing data by asking questions directly linked to the indicators of weak and strong multifunctionality (e.g. local and regional embeddedness of farms, history of environmental sustainability, agro-food chains, diversification pathways, level of integration into global capitalist market, etc.). The questionnaire should also comprise both open and closed questions (e.g. Likert scales, but also open questions in which farmers will be asked about past and future multifunctional decision-making), and should also investigate issues related to farm structure (e.g. farm structural history), farmer and household factors (e.g. age, education, pluriactivity), attitudinal questions (e.g. how important "agriculture" or "being a farmer" is to farmers), policy- and market related factors (e.g. importance of urban centres or tourism opportunities), as well as issues about farm interlinkages with the agro-food chain. The questionnaire would form an important component for the development of a farm multifunctionality typology, and clusters emerging from the questionnaire data could be used as a basis for identifying farm respondents for in-depth interviews. The sampling frame could be based on a stratified sample of farmers in both case study areas (see similar approaches used in WHATMORE et al. 1990; BURTON and WILSON 2006). Stratification would ensure that all farm sizes and farm types would be represented. In addition, geographical factors that may influence multifunctional decision-making opportunities (e.g. farms in peri-urban fringe; farms within catchment of organic farm shops; farms in tourist and non-tourist areas; etc.) should also be taken into account.

In-depth interviews would be useful to target farmers and non-farm respondents in both case study areas. Building on the study by BOHNET et al. (2003) of farmers' multifunctional decision-making processes, farm interviews could address the more subtle multifunctionality drivers that can not easily be assessed through questionnaires (e.g. farmers' life histories; local and regional farm embeddedness; farmers visions and values concerning food and farming). In conjunction with the shadowing of selected farmers (see below), interviews would obtain information on decision-making processes of the *farm unit* as a whole for the past and future 10 years. Farmer respondents could be selected on the basis of distinctive respondent clusters emerging from the questionnaire analysis. Interviews could be semi-structured and follow the same guiding questions in both the UK and Germany, but should also allow flexibility for the researchers to investigate specific avenues of interest that may be farm household or region-specific.

Interviews with non-farm respondents should target key stakeholders who can shed additional light on multifunctional decisions in the case study area and how future policies can be used to shift farmers towards strong multifunctionality. Non-farm interviews would involve stakeholders who interact locally with farmers (e.g. local and regional supermarkets; extension officers; local planning authorities; tourism associations; local policy-makers; and other actors) and should also target regional/national actors who can further help contextualize the case study results (e.g. regional/national policy-makers; representatives of farmers' unions; conservation organizations and marketing boards; etc.). An iterative process would also identify other actors who should be included in the non-farm interviews (about 30-40 in total for each case study area). These interviews could focus on factual information on constraints and opportunities for multifunctionality pathways (e.g. societal acceptance of strong multifunctionality pathways; policy needs and formulation). Specific emphasis would be placed on interaction and communication with local and regional policy-makers to find ways to improve the "multifunctional quality" of farms in both case study areas.

Shadowing farmers could provide an additional methodological step that would shed light on the strong multifunctionality indicators of farmer embeddedness in the local community and farmer/farm household perceptions of, and communication about, agriculture. This would involve spending several days on selected farms, shadowing farmers and members of the farm household in their day-to-day farming (and non-farming) activities, and attending agricultural events. Shadowing would particularly be used to obtain the most subtle form of observational information on "farming culture" that cannot be easily obtained through both the questionnaire survey and in-depth farm interviews, and would play a particularly important role in the early stages of the project when it could be used as method of *familiarization* with patterns and processes of farming, and during the middle stages of the project when the method would help gain in-depth insight into drivers of multifunctionality pathways.

A key objective as well as innovative output of the project could be the development of a multifunctional farm typology based on the spectrum of weak to strong multifunctionality outlined above. Ingredients for this typology would mainly come from the questionnaire (cluster analysis), but would be complemented and further contextualized through interview data, secondary sources and the shadowing of farmers. Building on preliminary work by both HOLMES (2006) and WILSON (2007 and 2008a), the key aim would be to develop a typology that can be used in other geographical contexts and that could be used as a basis for *tangible* policy-making decisions. This would take the form of providing advice to policy makers about which types of farms to target by policies aimed at engendering strongly multifunctional pathways, or through identification of "policy hot spot areas" where tensions exist between non-productivist policy goals and productivist decision-making by farmers.

It is expected that the project would generate a wealth of comparative data about two farming regions in the UK and Germany spanning about 20 years (10-year backcasting and forecasting), which can help policy-formulation with a view to encouraging farms to embark on strongly multifunctional pathways. The likely impact of this study would, therefore, not only be theoretical/conceptual but also practical with a remit beyond the two countries under investigation. In particular, the project would generate data and results that can be used by policy-makers to help farmers "rediscover" strongly multifunctional pathways.

5 Conclusions

In this chapter, we have sketched out some ideas relating to the emergence of "strong" or "weak" multifunctional pathways for rural areas in Germany and the UK. We have highlighted that common conceptual frameworks based on recent critical literature on the notion of "multifunctional agriculture" can be used as a platform for trans-national analysis of multifunctional pathways and transitions. Although there are different socio-political and endogenous/exogenous drivers for change affecting multifunctional trajectories in Germany and the UK, we also sketched out some parameters for a comparative study of multifunctionality in the two countries, including the use of "multifunctional" methodologies. The next step will be to operationalize such a methodology through joint collaborative work between German and British researchers, and to further foster rural research exchange between the two countries in line with the approach advocated by the Anglo-German Rural Geographers meetings.

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Dairying Under Attack! Farm Survival Strategies on Dorset Dairy Farms During the "Dairying Crisis"

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Abstract

This paper is based on findings of a sample survey of 215 farm households in west Dorset, one of the United Kingdom's principal dairying districts in south-west England. The survey, combining questionnaires and in-depth interviews, examined the nature of farm diversification over a twenty-year period following the introduction of milk quotas in 1984. It revealed that nearly three-quarters of the sample farm households had pursued some form of diversified activity, often combining different types of strategies to increase income potential. In addition to developing more of a mixed livestock farm economy (typically by adding cattle rearing for beef production to a dairy operation), there were moves into tourism-related activities such as caravan lets and bed-and-breakfast accommodation, and more limited moves into organic milk production. There was also a trend for farm households to become more pluriactive, with family members engaged in paid work off-farm, both in farm-related activities such as contracting work for other farms and in non-farm employment. The latter was common for spouses and children still living on the farm. The paper examines decision-making by farm households on dairy farms set against the background of steadily declining profit margins on such farms. It considers the interplay between 'global' forces in the form of supermarkets, which ultimately have a major influence upon the incomes of dairy farmers by determining the price farmers receive for their milk, and the different paths open to farmers in developing their businesses. Other key agents external to farms such as the dairy processing firms, the marketing framework for milk and dairy produce, and the implementation of milk quota arrangements are discussed. This enables the paper to illustrate how what traditionally has been a very stable dairying region is now rapidly losing many of its dairy producers and leaving a much depleted farming community that feels beleaguered and at the mercy of external 'global' forces over which it has little control.

1 Introduction: Dairying in crisis

Just over half (53 %) of the dairy farmers in the United Kingdom (UK) left the industry between 1995 and 2006. During this time the supermarkets' margins on fresh milk increased from 3p per litre to 16p per litre (DEFRA 2007). In 2001/2 60 % of dairy farms in the United Kingdom (UK) failed to cover their full economic costs. Their economic situation has worsened subsequently as average profitability has continued to fall. In 2006/7 all but the leading 25% of dairy farmers experienced a net deficit. The financial difficulties have contributed to a steady loss of farmers from dairying: since 2000 1,000 dairy farmers per annum have left the industry, and as a result the UK is failing to meet its milk quota allocation. A survey by the Milk Development Council (MDC 2007) reported that in 2007 16 % of dairy farmers were expressing their intention to quit.

Whilst the costs to farmers for fertilizers, fuel and feed have increased substantially, farmers' share of the money spent on purchases of milk declined; the share taken by processors and the companies that collect, pasteurize and bottle milk remained about the same; and the share taken by retailers dramatically increased. In part, this reflects the loss of power over retail prices that farmers have been able to exert since the break-up of the Milk Marketing Boards (MMBs) in 1994. The MMBs had held a monopoly on collection and selling of milk, but their demise produced a fragmentation of marketing and processing of milk. This enabled processing companies to compete fiercely to obtain contracts with supermarkets who have tended to work with just one or two suppliers. The pressure this has placed on milk prices has been reflected in the pressure placed on dairy farmers as three processors (Arla, Robert Wiseman and Dairy Crest) now account for two-thirds of the milk sold to the public (primarily via supermarkets).

Only half of the milk produced on UK farms is sold as fresh milk to drink. The rest goes into manufacturing, competing with milk produced elsewhere in the global commodity markets. Here, plentiful supplies from countries with lower production costs and more favourable exchange rates have helped keep down prices obtained by British producers. The farmers received 24.5p (58.3 %) of a litre of milk retailing for 42p in 1995 compared with 18.5p (38.9 %) for a litre retailing at 47.5p in 2004 (DEFRA 2007) (see Table 1). To remain viable, full-time dairy farmers have had to adopt scale economies as herds of less than 100 cows have effectively ceased to be competitive. Moreover, reforms to the Common Agricultural Policy (CAP) of the European Union (EU) have reduced subsidies to dairy farmers that helped to protect them from the realities of changes in the global market. It has largely been this global market that has determined the price of milk set by the processors (and hence by the supermarkets).

Table 1
Returns from a litre of milk (p per litre)

	1995	2005
Retail selling	42.1	50.9
Retail profit	1.0	15.0
Processor selling	40.8	35.3
Processor profit	1.8	2.5
Farmgate selling	24.5	18.5
Farmgate profit	5.0	0.0

Source: MDC

One response to the drastic decline in incomes on dairy farms has been for farmers to pursue different adjustment strategies, including diversification of their farm business. In 2002/3 income from diversified activities on UK farms exceeded £100 million. In 2004/5 46 % farms in the UK were officially classified as being diversified, producing an average output of £18,500 and a net margin per farm of £10,900 (DEFRA 2007). However, it would appear that fewer dairy farmers diversified than their counterparts in some other farming sectors. For example, according to the Department for the Environment, Food and Rural Affairs (DEFRA), only 40% of dairy farmers operated diversified enterprises compared with 67% for cereal producers and 54 % for those engaged primarily in general cropping (DEFRA 2006). An MDC survey in 2007 noted that only 19 % dairy farmers had diversified, whilst a Research Centre at the University of Exeter (TURNER et al. 2002) recorded that 50.1% of dairy farmers were diversified. A survey by DUPONT and FRANKS (2006) of 156 dairy farmers in the South-West recorded 48 % with some diversified activity (though this excluded organic producers, agri-environment schemes, and woodland). These various studies suggest that in total around 60 % of UK farms are diversified, though with significant regional variation, for example with more diversifiers in the East Midlands than in the South-West, which has more than the North-East and Yorkshire.

2 Defining farm diversification

The complexity of the process and nature of farm diversification has hindered the production of a simple all-embracing definition, and hence there are numerous classification schemes providing guides to the types of activities involved. Generally these distinguish farm diversification from enterprise or farm production diversification, in which a "conventional" farming activity is added to the farming operation, e.g. adding beef production to a dairy farm. Instead emphasis has been on the non-traditional aspects of agricultural diversification, such as growing "exotic" crops (SPELLMAN and FIELD 2002), raising exotic livestock, such as llamas, rabbits and rare breeds (YARWOOD and EVANS 1998) or producing energy

crops (COLLINS 1999), and structural diversification, in which the use of farm resources is directed towards markets beyond the productive farming system (Table 2). Hence, structural diversification includes farm-based tourism and recreation activities, including bed-and-breakfast accommodation, farmhouse cafés, craft centres and farm museums, and adding value to existing farm enterprises by direct marketing and processing, such as farm shops, pick-your-own schemes, and on-farm production of butter, cider and jam. Other aspects of farm diversification include use of ancillary resources (e.g. farm forestry, game birds), use of redundant buildings as industrial premises, and production of public goods (e.g. through agri-environment schemes) (KLEIJN et al. 2006).

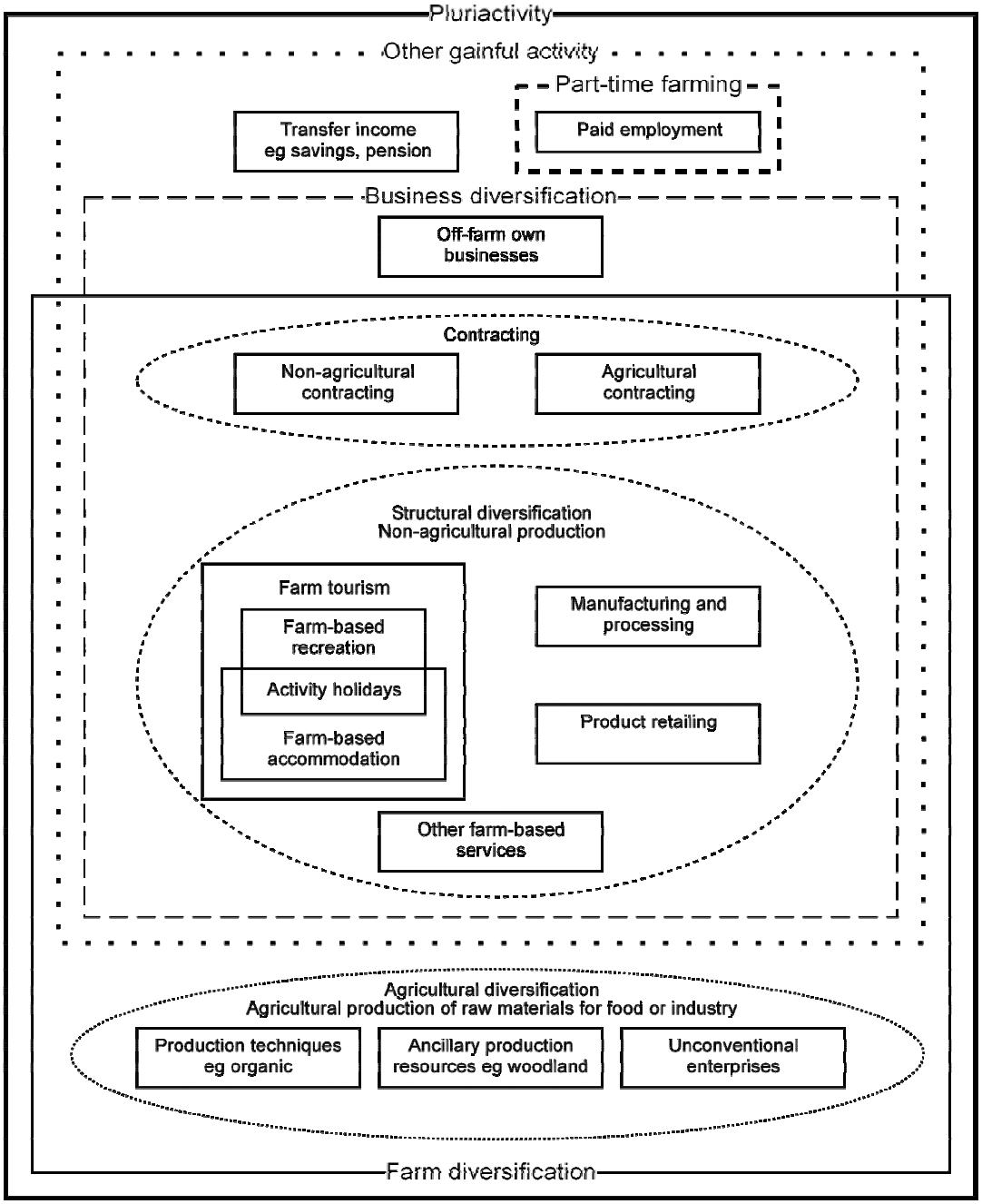
Inherent in any of these forms of diversified activity is the process whereby farmers and the farm household become pluriactive: that is, new sources of income generation are obtained, which can be either on- or off-farm or a combination of both (MACKINNON et al. 1991). The new activities that add to income generation of the farm households are generally termed other gainful activities (OGAs). Pluriactivity of the household includes the various OGAs referred to above as comprising farm diversification in addition to such activities as employment as hired labour on other farms and off-farm waged labour, mutual labour exchanges, and self-employment of farm family members on and off the farm (Figure 1). The authors' survey discussed below asked farmers questions about enterprise, structural and agricultural forms of diversification in addition to pluriactivity.

Table 2
Classification of farm diversification

STRUCTURAL DIVERSIFICATION	**Accommodation**		
	Bed & Breakfast		
	Self-catering		
	Camping & caravan sites		
	Recreation		
	Farmhouse teas/cafes	Horticulture	
	Demonstration/open days	Craft centre	
	Farm zoo/children's farm	Nature trails/reserves	
	Water-/land-based sports	Country/Wildlife parks	
	War games	Farm Museum	
	Combined		
	Activity holidays		
	Adding value to farm enterprises		
	By direct marketing		
	Farm gate sales		
	Farm shops		
	Delivery round		
	Pick Your Own Scheme		
	By processing		
	Butter/cheese	Cider/wine/juice	
	Ice cream/yoghurt	Jam/preserves	
	Potato packing	Flour milling	
	By selling skins, hides, wool		
	Passive diversification		
	Leasing of land		
	Leasing of buildings		
AGRICULTURAL DIVERSIFICATION	**Unconventional enterprises**		
	Crop products		
	Linseed	Triticale	Lupins
	Teaseed	Fennel	Borage
	Evening primrose	Durum wheat	Vineyards
	Animal products		
	Fish	Deer	Goats
	Horses	Llama/ostriches	Rabbits
	Rare breeds	Sheep (for milk)	
	Organic farming		
	Farm woodland	**Agricultural contracting**	
	Energy forestry	*For other farmers*	
	Amenity/recreation	*For non-agricultural organisations*	
	Wildlife conservation		
	For timber		
ENTERPRISE DIVERSIFICATION	*Adding a conventional ("standard") activity to the existing farm business.*		
	Beef production		
	Sheep		
	Pigs/Poultry		
	Cropping		
	Horticulture		

Source: Based on HIGGINBOTHAM 1997

Figure 1
Conceptualization of farm diversification and pluriactivity, based on HIGGINBOTHAM (1997)

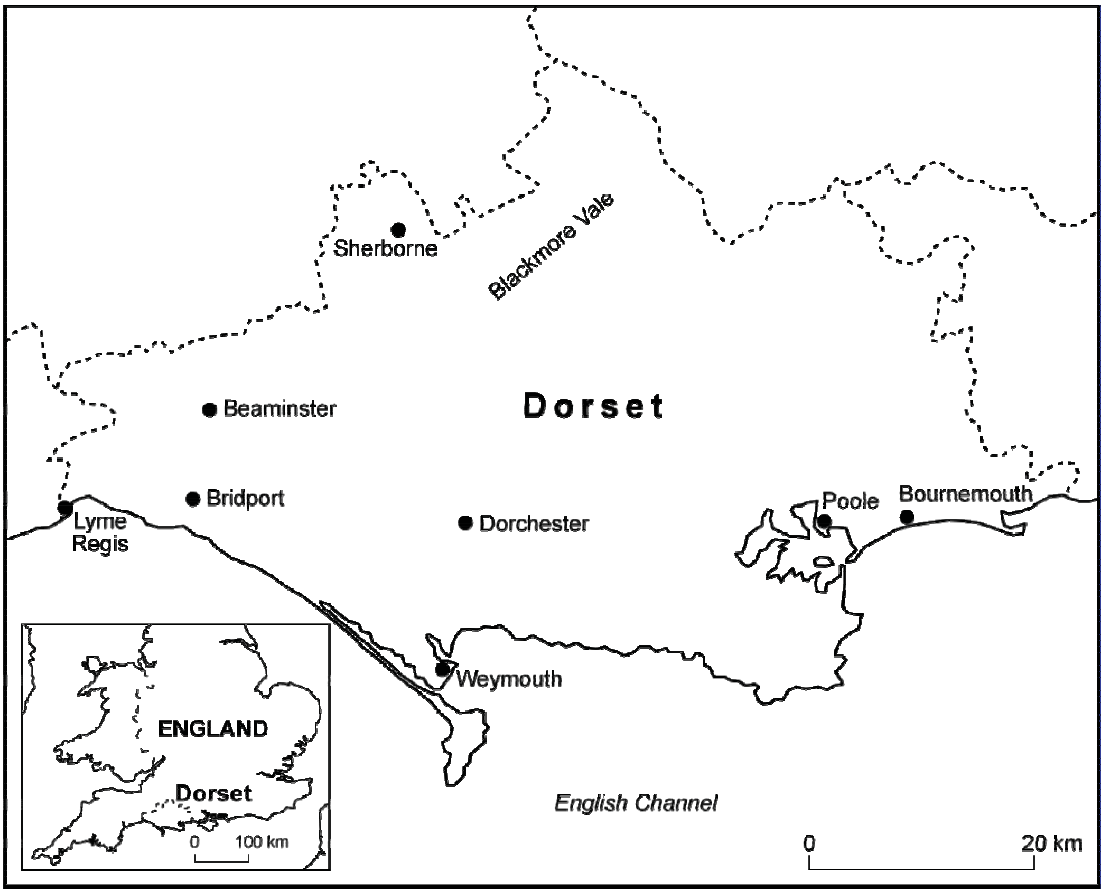


3 Dairying in Dorset, South-West England

The focus of this paper is the South-West of England and in particular one of the areas with the highest concentration of dairy farms, West Dorset (Figure 2). Farms in this area were surveyed between 2004 and 2006, using the Yellow Pages, Ordnance Survey maps, and the postal address book to generate a list of farms from which to sample. From 600 questionnaires

distributed this yielded a usable sample of 213 farmers who were surveyed via postal questionnaire, 72.8 % (n = 156) of whom reported the adoption of various forms of diversification over a period of twenty years. A sub-sample of the 213 farmers was selected for detailed interview.

Figure 2
The West Dorset study area



The farmers who were surveyed were asked to provide their own classification of their farm. Overwhelmingly they referred to some form of livestock production, with just over one-third describing themselves as specialist dairy producers (Table 3). Evidence for diversification appeared in the form of 27.2 % of the farms referring to mixed livestock production or a combination of livestock and mixed cropping. Only 7.3 percent described themselves as non-livestock producers.

The study area was chosen as it is one of the principal dairying districts in southern England. Dorset has long had a reputation as a leading dairy producer in the country, with the western-most part of the county in particular being an area where heavy clay soils and abundant rainfall encouraged farmers to keep land under grass for dairying as the major

Table 3
Farm type

Farm type	n	%
Dairy	75	35.4
Arable	11	5.1
Beef	28	13.2
Sheep	36	16.9
Mixed crops/livestock	31	14.7
Horticulture	5	2.2
Mixed livestock	27	12.5

Source: Authors' survey

element in the farm economy (ILBERY 1980). Small herds of under 30 cows were kept in the mid-19th century to produce butter (DODD 1980). Further north in the Vale of Blackmoor, pigs and dairy cattle predominated, with fresh milk being sent to London with the coming of the railways. Despite this link to the capital Dorset remained a relatively isolated part of the country, more reliant on agriculture than more populous counties. In 1979 it was reported that 12 % of the working population still depended on agriculture (ROBERTS 1979: 3). Government support for dairy farming before and after the Second World War, notably through creation of the Milk Marketing Board with statutory powers for the purchase of milk, led to widespread improvement of pastures and establishment of larger herds. By the late 1970s the average dairy herd was around 90 animals and there was a larger concentration of herds over 200 animals than anywhere else in the UK (ROBERTS 1979: 9). Milk yields rose significantly, partly through greater stocking with Friesians, but smaller producers found it harder to make profits and from the 1960s the number of dairy producers began to decline. From 1984 the EU's introduction of milk quotas further stimulated the concentration on larger herds and smaller numbers of producers. The stocking of Friesians means that many cattle in Dorset slaughtered for beef are of Friesian origin from the dairy herd. This practice has become more common since the 1970s as an additional source of income on dairy farms.

4 Farmers' strategies for dealing with falling income from dairying

Nearly three-quarters of the farmers surveyed had undertaken some form of diversification since starting their farm business (Table 4). Of those farmers pursuing only one form of diversified activity, the most common form was enterprise diversification (on 17.8 % of sample farms), usually by adding beef production to an existing dairy operation. Around one-sixth of the farmers had adopted enterprise diversification either as the sole diversification strategy or combined with another strategy. It was more

common for farmers to have become pluriactive, typically through one or more members of the farm household engaging in OGAs off-farm. Just under half of the sample had adopted pluriactivity as the sole strategy or in conjunction with one or more of structural, agricultural and enterprise diversification. In contrast, only 26.2 % had pursued just one of these three possibilities as a single strategy. Just over one-fifth of the sample had pursued a multiple strategy that combined pluriactivity with at least one of structural, agricultural and enterprise diversification.

Table 4
Diversification strategies

Dominant strategy	n	%	combined* (n)
Structural	15	7.0	28
Agricultural	3	1.4	16
Enterprise	38	17.8	53
Mixed (S+A+E)	8	3.8	
Pluriactivity	48	22.5	59
Pluri + Multiple	44	20.7	
None	57	26.8	
Total	213	100.0	

* The dominant strategy is combined with one other of the named strategies
Source: Authors' survey

Analysis of the farm survey data revealed a number of key relationships between characteristics of the farm household and diversification strategies. For example, there was a significant association between farm type and diversification. Farms with dairy cattle were more likely to diversify (and also to have on-farm diversification). Amongst the 75 specialist dairy producers the most common form of diversification was to add an additional farming enterprise to the farm business, most notably beef production (Table 5). One-fifth of dairy farmers had chosen not to diversify as compared with around one-third of sheep farmers and those running mixed operations. One-quarter of both beef farmers and sheep farmers had not diversified whereas the proportion was close to 50 % for those running mixed livestock or horticultural holdings. The implication seems to be that mixed livestock producers had sufficient sources of income to necessitate no further OGAs on the farm, though nearly half of farms with this farm type had farm households that were pluriactive. Over one-quarter of the dairy farms had combinations of different forms of diversification and/or pluriactivity. In total, nearly 40 % of dairy farms had diversified, though some dairy farmers simply could not envisage diversification:

> Dairy farmers are rather busy and are tied to it seven days a week, so it is more difficult. (Jonathan, 40s, dairy farmer, family farm, no diversification)

Table 5
Diversification strategy by farm type

Diversification	Dy	Ar	Bf	Sh	Mx	Oth	Tot
Structural	0	1	4	5	3	2	15
Agricultural	1	0	2	0	0	0	3
Enterprise	28	0	4	2	4	0	38
Pluriactivity	10	3	0	11	11	13	48
None	15	3	8	9	7	15	57
Combined Diversification	5	1	2	0	0	0	8
Combined Pluriactivity	16	3	8	9	6	2	44
Total	75	11	28	36	31	32	213

Source: Authors' survey

47.9 % of farmers surveyed were over 55 years of age (Table 6). However, the farmers' age was not significantly associated with diversification, though younger farmers (<45 years of age) were more likely to diversify. The majority of non-diversifiers were over 65 years of age.

> The thing is that I am getting older so there is little point of diversifying very much. (Richard, 60s, dairy farmer, family farm, no diversification).

Farmers >45 were more likely to be pluriactive.

Table 6
Age distribution for farm operators

Farm Operator's Age	n	%
<35	12	5.6
36-45	43	20.4
46-55	56	26.1
56-65	43	20.4
>65	59	27.5

Source: Authors' survey

Only 20.6 % of farm operators had an agricultural qualification (the highest % were aged 36-45). Those with higher-level agricultural qualifications were more likely to diversify (especially into off-farm OGAs).

Just over two-fifths of the surveyed farms were under 50 ha (Table 7). However, the corresponding percentage for the start of the farm business was 70.5 %, indicating a significant increase in farm size had occurred. The proportion of holdings over 200 ha had risen from 9 % to 21.2 %, and many surveyed farms had increased in size since the current operator assumed control. However, there was no significant association between farm size and diversification, though farms from 51-100 ha were more likely to diversify than smaller farms. Yet smaller farms were more likely to

diversify than not. Farms over 200 ha tended to diversify less, especially the dairy farms. Farms over 100 ha were more likely to have on-farm diversification. Small farms (<100 ha) had a higher proportion of tenants and a smaller proportion of diversification.

Table 7
Farm size

	At time of survey		At start of farm business	
	n	%	n	%
<10 ha	35	16.8	107	50.0
11-50	56	26.3	44	20.5
51-100	47	21.9	24	11.5
101-200	30	13.9	19	9.0
201-500	26	12.4	19	9.0
>501	19	8.8	0	0

Source: Authors' survey

Nearly one-third of the farms surveyed were full-time family operations (Table 8). One-quarter were family-based partnerships. The overwhelming majority of the 36.6 % of farms that were either part-time or hobby farms were also family-run. Overall, there had been very little penetration of corporate capital into farming in the study area. Full-time farmers were more likely to have on-farm diversification whilst hobby farmers were more likely than part-time farmers to have off-farm diversification. Full-time farmers were more likely than part-time and hobby farmers to have a variety of diversified activities. Non-family businesses had a wider range of diversified activities. OGAs were more prominent on farms with lower labour requirements. 59.2 % of holdings were owner-occupied; just 7.0 % were solely tenant farms (and these tended not to have any diversification):

> I make a comfortable living just milking cows. That's really all I want to do. I have got a quite good milk quota. Providing I work hard, I can make good money. I do not see me investing a lot of capital in other things than producing milk. Hmm, I think there will be a future in milk but you need to do it efficiently and that is all I am really interested doing…. I do not really want to see them do away with quotas because over the last five years we have spent over half a million pounds to buy milk quota and I shall have to pay for it for another five years, by which time I have a good asset to retire with. If they go away [the milk quota] I have got nothing… (Jonathan, 40s, dairy farmer, family farm, no diversification)

Table 8
Farm organization

Farm organization	n	%
Part-time	44	20.6
Hobby	30	14.0
Full-time family	69	32.4
Family-based partnership	55	25.7
Ltd non-family partnership	12	5.9
Corporation non-family	3	1.4

Source: Authors' survey

The majority (64.5 %) of farmers with milk quota had > 500,000 litres. These producers were more likely to diversify than those with smaller quota. Larger quotas were more closely associated with enterprise diversification and also with a mixture of adjustment strategies. Nearly half the farmers with > 500,000 litres of quota had bought or leased additional quota, i.e. increasing quota was one strategy to increase income.

> We make money at what we are doing and so why diversify? We have not got the time. We spend all our time doing what we do and we are making money. (Alan, early 50s, dairy farmer, family farm, enterprise diversification)

Farms near towns and farms closer to the coast were more likely to diversify than farms in other locations, but trends were not marked. On-farm diversification was more prevalent on farms close to towns as opposed to near the coast.

> We have looked at a caravan site. We have considered that we have got a very exposed farm and quite high up and north facing. Again there were an awful lot of better sites around here with a better position than we can offer. That was something we looked at and rejected for that reason. There are millions of caravan sites closer to the coast and there are quite a few small caravan sites around and about that are much better situated than we would be. So I have decided against it. (Andrew, 40s, dairy farmer, family farm, pluriactive)

> You had trouble finding us. If we went into caravan parks, we are not suitable because of the access. You need to be on a main road. (Roger, 40s, dairy farmer, family farm, enterprise diversification).

4.1 Structural diversification

A total of 15 farms (7.0 %) had adopted structural diversification as the sole diversified strategy, whilst 28 (13.1 %) combined it with other diversified activities. A typical comment of structural diversifiers was:

> We had to diversify because my son and daughter joined the business, so we needed to develop. (David, 50s, dairy farmer, family farm, structural diversification)

This illustrates both the potential for new enterprises when labour is available, but also the need to find employment for members of the extended farm household.

Diversification can be a means of spreading the economic risk:

> I am quite open to diversification because diversification is really to spread our risk and to try to earn income from sources other than farming because, although we will never go out of farming, to spread the cost, you have more chance […] to bring several sources of income so if one goes down another one is more likely to be up to complete it. (David, 50s, dairy farmer, family farm, structural diversification)

Farmers commented that structural diversification was time consuming and increased labour requirements on the farm, and this may have been a factor in a reluctance to engage in activities such as provision of bed & breakfast accommodation, caravan parks, holiday lettings, camping and sports facilities, leasing buildings and contracting/hire-work. Some of this may be essentially passive for the farmer, e.g. leasing of buildings, which may provide income with little or no time and investment. However, opportunities to develop this did not appear to be widespread. Generally, structural development occurred on farms where there was a married couple so that the wife looked after the B&B. There was also a tendency to find structural diversification on smaller farms <100 ha, compared with the average farm size for the county at 176 ha.

There were no tenant farmers who had adopted structural diversification, reflecting the constraint of requiring the owner's permission to engage in such activities, and the concomitant probability of an increased rental or profit sharing with the landlord.

> The reason why we don't diversify? We are on a rented farm so it is much harder to diversify because you do not feel like spending the money on capital and investment for the landlord. (John, 40s, dairy farmer, family farm, no diversification)

4.2 Enterprise diversification

In the sample, 38 farmers (17.8 %) reported that they had engaged in enterprise diversification as their adjustment strategy, whilst 53 (24.9 %) combined enterprise diversification with other adjustment strategies. Of the 38, 23 had added beef cattle to their farming operations, 14 had added sheep, and just one had diversified into pigs. Three-quarters of the farms

engaging in enterprise diversification were reliant on family labour. There was a close link between these farmers and the desire to continue being "proper" farmers:

> In terms of diversification, we had no choice. Our farm is quite remote and not easily accessible. For us sheep production was the only option. (Roger, 40s, dairy farmer, family farm, enterprise diversification).

The additional activity often involved little extra investment, with no need for new buildings, and relative ease of harmonization with dairying.

The farmers who had opted for this form of diversification identified strongly with particular notions of what it meant to be a farmer. They deliberately eschewed strategies that would have involved them in engaging in non-farming activities such as running a bed-and-breakfast operation on the farm or working off the farm. Predominantly these farmers were commercial dairy producers on larger than average size holdings who were simply responding to the falling returns from dairying by on-farm diversification into an additional livestock-based OGA. Any additional labour associated with this diversification tended to be supplied by use of family labour. Indeed, the presence of such labour on the farm could be the spur to diversify so that a son or another family member could look after the new enterprise.

4.3 Pluriactivity

There were 48 farmers (22.5 %) in the sample who engaged in pluriactivity as the sole adjustment strategy and another 11 who combined this with some forms of diversification. Hence nearly one-quarter of the farmers in West Dorset were pluriactive, primarily as a means of spreading economic risk plus increasing the number of income streams.

> [Farmers] have to change their farming systems. That is the only way to make money. Farmers need to amalgamate to cut their costs and increase productivity. (Nigel, early 50s, mixed livestock, pluriactive farmer).

This strategy was most apparent on the larger dairy farms. Off-farm work by the farmer and/or members of the farm household often reflects possession of particular educational qualifications. Fifteen of the farmers who were pluriactive were the sole labour on their farms. However, farmers argued that one farmer cannot have a dairy unit and work on other projects at the same time:

> I cannot help thinking that the chap who goes and gets a job relies on milking cows before and after work. He gets about a time when he realizes it is dangerous, and diversifying you spend more time than

> you are meant to and neglect farming. That loses more money so the other has to do more and it is a vicious circle. Probably right if there is a son or a daughter who want a farm. I am very happy to start taking over the dairy side and they can take the time to develop a new golf course, if they want to but for one man to do all he has to delegate responsibility otherwise it is too much. (Loxton, late 50s, dairy farmer, family farm, structural diversification)

There was a tendency for pluriactivity to be associated with smaller farms: two-thirds of farms with pluriactivity were under 50 ha. There were 40 farmers (19 %) who combined pluriactivity and some form of diversification. Generally, farms with the farmer and/or family working both on- and off-farm also employed non-family labour.

> No, no once you start having a job, you are no longer a farmer; you are a person who farms for a hobby. It is not a farming business as such. (John, 40s, dairy farmer, family farm, no diversification)

The decision to become pluriactive depends on the main type of farming. Dairy farming is time consuming so farmers may not have the time to have another non-farm paid activity:

> If I were not a dairy farmer, if I was a beef farmer and I had time, I'd be quite happy to do that and do something else part-time. At the moment the farm is a good full time job. I am not against it at all but you know with my work at the moment I could not do another job unless you are a workaholic. (Kevin, mid 30s, dairy farmers, family farm, no diversification)

A few farmers in west Dorset were against pluriactivity and referred to pluriactive farmers as "hobby farmers" believing that if a dairy farmer had off-farm employment, they then would neglect their main production:

> Hmm, well it would just make it a hobby. I mean if you are interested in it and you want to do it that is fine. But if you got support from the outside work it is not really farming is it? It is just a way of subsidizing your hobby, I think. I have been out and done work outside, but the thing is then you cannot do your own work properly. (Harold, mid 30s, dairy farmer, family farm, no diversification)

4.4 No diversification

In the sample survey 57 farmers (26.8 %) had not diversified their farm business.

> Well, diversifying is OK but as long as it does not go wild! There is only so much that farmers can do. I'd rather prefer looking after one production rather well than diversifying into something else. (Harold, mid 30s, dairy farmer, family farm, no diversification or pluriactivity)

These farmers tended to associate diversification with employing more labour and hence with additional costs.

> I'd considered doing another job off the farm, but I have not pursued that very far. I cannot run 120 –130 cows herd here without any help and do another job. If I had permanent staff and good enough staff, I would have taken it into consideration. (Andrew, early 40s, dairy farmer, family farm, no diversification)

An absence of diversification was associated with lack of capital and also older farmers, especially over 55 years of age; but some had simply intensified or expanded their main production. Some of the non-diversifiers were on small holdings (<50 ha), and one-third were specialist dairy farms.

> Yeah……yeah, you could get higher income but hmm, I think it would cost too much to get things to go without a lot of money, it is just not there. Because I have not got anyone behind me, so you know. (Barry, 40s, dairy farmer, family farm, no diversification)

> It is easier for a pretty young chap but it is more difficult to diversify if you are my age. (Brian, late 50s, dairy farmer, family farm, no diversification)

4.5 Agricultural diversification

Only three farmers (1.4 %) had adopted agricultural diversification as their sole adjustment strategy, though a further 16 (7.5 %) had combined it with other aspects of diversification. The principal form of agricultural diversification was organic farming, though a negative attitude to this form of production was often encountered:

> Organic products are paid more but it is not worth it and I mean all the organic milk … they have a job to sell it. They [the milk/cheese] have got to be sold back on the open market you know. It is not really what people thought it was going to be. Yes, I have considered transforming my farm into an organic farm but I realized we would not have survived the conversion years financially. (Kevin, mid 30s, dairy farmer, family farm, structural diversification)

For many organic milk producers, the growing inability to find a market for their milk has meant they have been forced to sell their organic milk as "ordinary" milk, the price of which has effectively fallen significantly as described above. The economics of this situation has been a crucial factor in decisions by some to leave the organic milk sector.

> We have seen what happen with the organic already. They have been led along that they will get 29 p a litre for their milk and they spend three years getting there and a hell of a lot of money they have invested in it and suddenly they are getting paid half their milk at 29

> p a litre and the rest at the same normal price as I do. (Mike, 50s, mixed farming, family farm, structural diversification)
>
> A friend of mine he is gone organic and his milk is now collected with the same tanker that my milk is collected with. They all go in together. He is paid better price 5 days a week and 2 days a week he is paid an ordinary price. Because once again it is over supplied again they can import it cheaper. Other countries are able to produce it cheaper and supply it to us and the supermarket is a business; it can buy it cheaper elsewhere it is going to buy it cheaper elsewhere. (Kevin, mid 30s, dairy farmer, family farm, structural diversification)

One farmer made a good point about the high cost of organic food for the consumer:

> A minority of British housewife will be happy to pay more for higher quality (organic food) but in general in cities people will buy the cheapest wherever it comes from as they are much more attached to the cost. That concerns about 90 % of the population, I would say, which is fair enough. That is their choice. (Loxton, late 50s, dairy farmer, family farm, structural diversification)
>
> Around here and Dorchester the housewife is quite wealthy and so perhaps the housewife goes and buys organic vegs, chicken or whatever but it is quite a small minority. If you go to Birmingham they do not care as long as it is reasonably priced. That is what they want. (Barry, 40s, dairy farmer, family farm, no diversification)

5 Conclusions

The survey revealed evidence of a deliberate move away from milk production as diversified activities gradually take over resources once used in milk production. The numbers of diversified activities per diversified farm are gradually increasing, possibly indicating that diversification is a strategy for moving out of milk production whilst still remaining on the land. Of course, farm census data also reveal that many farmers are going out of business, especially dairy farmers as the falling returns from milk production take effect.

The chief reason given for diversification was the falling profits from milk production, especially following the demise of the UK's milk marketing boards (MMBs) in the mid 1990s. In particular, dairy producers stated that relationships with purchasers of milk in the post-MMBs era had become more difficult, possibly exacerbated by a restructuring of the ownership of processing capacity. There had been frequent changes to the value of the constituents of milk, affected in part by policy changes that also affected various aspects of milk production. For example, there had been deductions from the regular milk cheque in order to underpin the financial structures of

the milk purchasers. The dairy farmers felt there was a clear need for more transparent and stable milk marketing arrangements in addition to more generous farm gate prices.

In terms of the type of diversification pursued, a multiple strategy involving pluriactivity was the most common approach, indicating that a single strategy, for example adopting a new farming enterprise, was often not seen as sufficient. However, another factor in the decision-making was the role of members of the farm household, as pluriactivity could include the farmer's wife or children still resident on the farm who brought money into the household by taking off-farm employment. After pluriactivity the next most popular strategy was to increase the number of farming enterprises, typically by adding another revenue stream to dairying by rearing beef cattle or running a flock of sheep on the farm. In some cases this had produced a switch to specialization in the new enterprise or the creation of a more genuinely mixed livestock business.

Although the survey of farmers revealed a wide range of diversification strategies, around one-quarter of the farmers surveyed had not pursued any form of farm diversification. This lack of diversification was associated with all farm types, but was most prevalent in the "other" category, which included horticulturalists and pig and poultry producers. In contrast, only one-fifth of the dairy producers had not diversified, reflecting the extent to which these farmers had responded to falling milk prices by adopting various diversification strategies. This may tend to refute the argument that dairy farmers diversify less than many other types of farmer. Moreover, there is plenty of evidence to suggest that enterprise diversification is recognized as one of the various forms of diversification that farmers have adopted. The result has been to create a farm economy with fewer and larger, but more diversified farms on which a range of OGAs can be found. This may be creating a more multi-functional character on some farms in the area (see WILSON 2007) or it may simply be turning a specialist dairy producing area into a more mixed livestock economy in which only the fittest survive, and in so doing farm households are relying on a wider range of income sources.

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Pasture in the Biofuel Boom: Rescaling of FRG, UK and US Organic Dairy Farms?

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Abstract

Twenty years ago Europe was awash in milk, and animal welfare was high on the agenda. A 1987 Swedish Act proclaiming the right of cows to graze outdoors showed that the *Animal Liberation* (1975) philosophy of Peter Singer had influenced politics. The EU set deadlines to end *Massentierhaltung* (factory farming) such as pig and poultry batteries, protests of veal transport to the Continent vexed Britain, while food scares over BSE and pesticides fostered a turn to more natural or organic foods (SCHOLTEN 1990a and b; 2007; MURDOCH and MIELE 1999). US consumers sued Wal-Mart, alleging that milk labeled "USDA organic" came from cows without access to pasture (SCHOLTEN forthcoming). Now Europe's situation has changed. EU and UK set-aside is gone, the global milk price has risen, and bio-fuel competes with cows for space. At this early point in my research on the interplay between bio-fuel and pastoral farming, I ask these questions: Does EU multifunctionality have scope for increased grazing of livestock as more land is dedicated to bio-diesel? Or will Germany follow the example of the UK and US from the last 20 years, in which more animals are in confined animal feeding operations (CAFOs) linked with lameness and shorter longevity (HASKELL et al. 2006 and 2007)?

1 Introduction: the relationship between farms and energy scarcity

Energy scarcity is rescaling dairy farm structures in a process of geographical differentiation. This paper will first examine turns in consumer politics; second, factors such as Peak Oil and petroleum demand from China and India leading to the biofuel boom; third, links between energy options and grazing; and finally offer prognoses on energy and pastoralism. The focus will be on the United States (USA), with reference to Germany (FRG) and Britain (UK).

Following the world wars of the twentieth century, farm structures in Germany and Western Europe underwent intensification and mechanization under the Mansholt Plan which, incorporating production subsidies for farmers was the backbone of the EEC Common Agricultural Policy (CAP). Britain, which joined the European Economic Community (EEC) in 1973 also followed a productivist path, but with intensity closer to that of the USA than that of the EEC. Productivism often generated cereal and dairy surpluses which disrupted markets at home and, when labelled as food or dairy aid, threatened food security in recipient countries (SCHOLTEN 1989a and 1998). The high storage costs of Butter Mountains and Milk Lakes drove EEC leaders to impose milk quotas in 1984, and efforts to decouple subsidies from production in the MacSharry reform of 1992. Peter J. ATKINS (1988: 281ff.) saw that globalization was bringing "the end of agricultural geography and the dawn of a 'geography of food'", as scholars recognized a post-productivist-transition in Europe with the potential to affect US policy (LOWE et al. 1993; WILSON 2007: 82-84). Although CAP subsidies supported the survival of smaller farm structures in continental Europe than in the more laissez-faire environment of the UK and the USA, pressure to achieve greater economies-of-scale was evidenced in the last decade by the merger into larger structures of traditional *Bauernhöfe* in the Black Forest along the River Rhine.

1.1 Consumption turns and politics

Multiple factors have forced farmers in developed countries to question the mantra to enlarge and mechanize conventional landholdings. The first were consumer turns to natural, organic, local and non-conventional foods in response to food scares such as mad cow disease (BSE), and encouraged by the availability of exotic foods in globalized food systems (MURDOCH and MIELE 1999). The economies of developed countries, including the EEC renamed as the European Union (EU) in 1993, continued to expand as unfettered global capital was unleashed by the World Trade Organization (WTO) agreement of 1995. The power of capital was fuelled by cheap oil in a global economy enjoying a lengthy period of low inflation. St. Louis-based multinational Monsanto sought to appropriate aspects of farm production systems by developing genetically-modified (GM) plants such as soybeans resistant to its Roundup Ready pesticide in North and South America.

Monsanto was also able to get approval for the GM bovine growth hormone which it marketed as recombinant bovine somatotropine (rBGH/rBST) in the US in 1993 (cf. Table 1). Willi Kampmann of the German Farmers Union (DBV) in Bonn told me in 1988 that such dairy hormones were refused by Canada and Europe, partly from fear that production increases would overwhelm their smaller farm production structures (DBV; see SCHOLTEN 1989a and 1989b; BUTTEL 1998).

Despite the determination of the Reagan-Bush administrations to promote GM technology, Greens maintained their advocacy, and consumers increasingly shifted their shopping gaze from their own palettes to the externalities of food systems on animals, the environment and workers in global food chains (SCHOLTEN 1990a, 1990b and 2007; GOODMAN and DUPUIS 2002; HOWARD and ALLEN 2006; MORGAN et al. 2006). In the US Mid-West, seven family organic farms devoted to rotational pasture grazing left the productivist treadmill in 1988 to form the cooperative Organic Valley (aka Coulee Region Organic Produce Pool or CROPP), which grew to 1,322 members in 2008. In the UK organic dairy production grew faster after the government admitted a link between animal and human forms of mad cow disease (BSE/vCJD) in 1996. Soon thereafter, protests partly directed by the Soil Association stopped GM crops trials in a campaign that vaulted the organization to prominence as a policy former and certifier in organic agriculture (REED 2003).

1.2 USDA organic grazing war on "access to pasture"

In the context of livestock disease outbreaks, EU farm commissioner Franz Fischler promoted organic farming in Europe, a policy shift that strengthened under FRG farm minister Renate Künast when BSE was found in Germany in 2000. The next year EU countries began formulating action plans for increasing organically managed land (Table 1). US consumers gradually rejected GM milk and turned to organic products, increasing that market by about 20% per annum (MERRETT 2008). To discourage free riders on their premium, Organic Valley coop and other producers sought national certification to protect their niche. In 2002 the US Department of Agriculture released rules for the national organic programme (NOP), one of which mandated "access to pasture" for livestock. This ambiguous phrase sparked the USDA organic pasture war, when Horizon Organic dairy converted a conventional 8,000 cow Confined Animal Feeding Operation (CAFO) to organic-industrial production and sourced milk from similar factory farms (POLLAN 2001). Horizon acquired Rachel's Organic Yogurt in the UK in 2003, before $11 billion multinational Dean Foods acquired both in 2004. Mark Kastel, Senior Farm Policy Analyst at Cornucopia Institute based in Wisconsin said that the nation's 1,700-1,800 family dairy farmers were in an uneven battle with Dean-Horizon and their supplier Aurora – altogether the largest producer of organic, private-label milk with about 20,000 cows in five desert-like facilities in Colorado and Texas (KASTEL 2008c).

Table 1
Organic Timeline

1993	USDA certifies synthetic hormone rBGH/rBST.
1997	USDA moots organic rules; 275,000 protest Big 3 of GMOs, heavy metals, irradiation.
2001	EU action plans: Czech Rep. plans 10% by 2010; Denmark 12% by 2003 (170,000 ha); Netherlands 10% by 2010; the German Ag. Min. declared to parliament a target of 20% organically managed area by 2010 (see STOLZ and STOLZE 2006).
2002	USDA National Organic Program (NOP). Rules ban GMOs, sewage sludge & radiation.
2003	USDA admits first mad cow near Seattle.
2005	USDA files Cornucopia legal complaints vs. Aurora & Horizon on pasture. In next 2 years USDA-NOP receives 80,000 protests on pasture in OCA milk boycott.
2006	Biofuel boom forces grain price rises.
2007	USDA decertifies Vander Eyck Dairy, shortly before Horizon announces support of 120 day/30% DMI rules. USDA finds Aurora dairy in "wilful" violations of 14 different provisions of the Organic Foods Production Act regulations, making "consent agreement" with AOD. OCA files class action suit vs. AOD, Dean, supermarkets, etc.
2008	USDA-NOP issues strict pasture rules for comment, pleasing many family-scale farmers. But higher food costs dampen organic sales in the UK and USA.

Sources: Agriculture and Agri-Food Canada, Cornucopia Institute, Defra, OCA, PCC, USDA

In 2006 a boycott of Dean-Horizon organic products began after officers of the Organic Consumers Association and Cornucopia Institute (KASTEL 2006) visited and photographed farms supplying them. As a result of complaints filed in the USDA, the 10,000 cow Vander Eyck mega-dairy was decertified in early 2007, and later in the year Aurora Organic Dairy narrowly escaped decertification by USDA-NOP because its Platteville, Colorado dairy kept about 4,000 cows on just 200 hectares, and it was found that its lactating cows were not allowed to graze.

These deprivations of pasture surprised and disturbed consumers who expect grazing cows on dairy labels to reflect reality and "expressed scepticism that they were getting what they thought they were", said Goldie Caughlan of Puget Consumers Cooperative in Seattle which joined the boycott (personal communication). After the USDA ruling, OCA filed a consumer class-action suit against Aurora, Dean-Horizon, Kroger, Wal-Mart and others for fraud.

On October 15, 2008 the USDA (2008) issued explicit "access to pasture" rules for a 60 day comment period. Proposals included 120 day grazing and

30% dry matter intake minimums, and stricter rules on the origin of replacement animals in organic herds. This was welcomed by family-scale grazing farmers who believed the ruling would close organic CAFOs. But Cornucopia (KASTEL 2008a, b and c) claimed Dean-Horizon was building more 10,000 cow mega-dairies whose economies of scale depressed farmgate prices to farmers, and that Dean was further hurting farmers' incomes by heavily discounting their milk to supermarkets in competition with rivals such as Organic Valley (see also SCHOLTEN forthcoming 2009).

Fierce debate continued on social justice for family-scale organic farmers. But the proposed rules did, apparently, address key issues of animal welfare by demanding more grazing in the growing season. The rules also demanded that replacement calves be grown in organic conditions for the last third of their gestation; this reform would curtail abusive burn-out of cows on organic-industrial farms, while ensuring that grazing was mandatory in the replacement chain. Such reforms might serve as a moral example to the UK which shares "processed food cultures" with the USA (MORGAN et al. 2006: 1). They would also put countries such as the FRG, which already has better organic grazing standards, on a level playing field with the USA.

2 Energy trends upset world economic equilibrium

At the same time that consumer boycotts helped reform USDA organic pasture rules, ending cow confinement as seen on Aurora's overstocked Platteville Dairy, the world economy lost equilibrium, calling these reforms into question. Decades before, embargoes by the Organization of Petroleum Exporting Countries (OPEC) had stressed developed economies greatly in 1973-74 and 1980-81. The FRG had led energy conservation in homes and factories, but the UK lagged until at least 1999 when North Sea oil production began to decline.

Biodiesel projects by organizations such as Farmway in the UK foundered amid the cheap oil of the 1990s, but the world was changing: Volkswagen dual fuel diesel/biodiesel vehicles were common from about 1996 in Germany, and Brazil utilized sugar cane waste to lead production of bioethanol for transport.

2.1 Peak oil

The cost of energy has long oscillated with Middle East politics, but it rose to higher long-term levels due to increasing demand for oil from the emerging economies of China and India. Their expanding middle classes were adopting diet and transport habits that are ultimately linked to greater oil consumption. Another factor was Peak Oil, a theory propounded by James KUNSTLER (2007) who argues that the quantity of world petroleum reserves is sketchy because OPEC producers may be exaggerating their own.

KUNSTLER's main point is that production is currently peaking with 50% of readily extractable reserves gone. One knock-on effect of Peak Oil is a general rise in food prices which MARSDEN and FLYNN (2009) have referred to as Peak Food.

Peak Oil could doom productivist farming based on petroleum. In an open letter to the next US President, POLLAN (2008: 62) claimed that the "20th-century industrialization of agriculture… transformed a system that in 1940 produced 2.3 calories of food energy for every calorie of fossil-fuel energy it used into one that now takes 10 calories of fossil-fuel energy to produce a single calorie of modern supermarket food." Blaming oil-based productivism for systemic health problems, petroleum dependence and climate change, POLLAN urges the closure of CAFOs and a return to "sunlight" agriculture in rotational systems of "perennial pasture and annual crops".

2.2 Biofuel boom

In his 2006 State of the Union address, President George W. Bush added government support to bioethanol projects already underway. Politically, this attracted rural support for his Republican Party, but it was also a move toward independence from Mid-East oil. US farmers suffering stagnant commodity prices were initially overjoyed by Washington's biofuel policy, as the boom raised land prices and incomes of many farmers. But critics faulted US selection of maize-, *aka* corn-based bioethanol, instead of the cleaner biodiesel from oilseeds favoured in Europe, or alternative crops such as jatropha shrubs. Economists deplored tariffs on cane-based bioethanol from Brazil and elsewhere.

The rush to biofuel alarmed environmental experts. The Dutch government LOW CARBON VEHICLE PARTNERSHIP agency and the UK's Chief Scientist asked reconsideration of biofuel targets in cars (LowCVP 2008). Greens warned biodiversity would suffer if EU set-aside, which accounted for 7 % of farm area in the 1990s, was turned to fields for biomass production. The US bioethanol boom posed risks including the enlargement of the so-called "dead zone" in the Gulf of Mexico, where Mid-West farm chemical runoff carried by the Mississippi River fed algae, depriving water of oxygen needed by fish. Runoff from poorly designed bioethanol plants polluted streams, and some plants were abandoned when the price of maize exceeded budgets.

Altogether, Peak Oil, petroleum demand from China and India, and global demand for biomass doubled prices of cereal commodities between 2006 and 2008. After a decade of improved food availability, world hunger increased to include over 900 million people, reported the Food and Agricultural Organization of the UN (FAO 2008a, 2008b and 2008c). With farming, processing and distribution (*aka* food miles) tied to fossil fuels, food inflation sparked protests in cities world-wide, inducing some nations to negotiate secret deals over grain supplies (BLAS 2008).

All this was a setback to an organic industry that, despite arguments over pasture, was growing steadily, with US government statistics showing organic retail sales increasing by 20-24 % annually from 1990, and 22 % in 2006. Geographically, there were differences in supply chains. While US consumer demand for organic milk was nearly met in 2007, European processors struggled to find milk, with UK and especially FRG demand exceeding supply, according to Neil MERRETT (2007) of the *Dairy Reporter*. One explanation for the EU supply gap was price discounting by retailers such as Aldi that boosted sales. It may also be the case that some US dairy farmers declined conversion from conventional to organic dairying because of the lack of conversion subsidies, compared with Europe.

By 2006, grain price rises began to bite in the US dairy sector, especially for farmers who paid double for organic feed. The battle cry of Ike (pseudonym) is, "If the cows aren't grazing then they're not organic!" But when his milk price no longer met expenses, he wrote "I have a fondness for the organic system … but I've been farming a long time and have been through tough times on the conventional side, but nothing comes close to what's happening here on this [organic] market" (ANONYMOUS/Ike 2008).

Feed costs were driving farmers from the organic market according to *Hoard's Dairyman* (ANONYMOUS 2008b: 707). Many American farms survived by exploitation of voluntary labour, as Rob Burton has described the tactics of some British families (BURTON 2005: 128). As grocery prices rose and organic sales growth plateaued at 4% in the USA (MARTIN 2008), Cornucopia Institute's Mark Kastel agreed that "the shift to cropping for fuel has hurt the organic movement" (2008 personal communication).

3 Grazing and energy options

President Bush's backing of the national biofuel programme was not the first time that agricultural policy was deployed against geopolitical problems. In the 1970s President Nixon defended the weak dollar with a Food Power programme to increase exports. Nixon's farm secretary Earl Butz told farmers to "plant fencerow to fencerow" and to "get big or get out". The programme curtailed France's attempt to dominate world grain exports, but the US export push accelerated its trend to monoculture.

In the Pacific Northwest region the Darigold cooperative encouraged members, including some in my family, to scale up production and focus on massive exports of dry milk powder. This abandoned its previous business plan of regional marketing of a full range of products including buttermilk, cheese, and ice cream. This strategy proved counter-productive when the dollar appreciated, and coop members were left out of the trend to quality foods.

Organic pasture advocates concerned with landscape, social justice for farm families, and animal welfare understood that any attention to "access to

pasture" rules by the Bush administration was not based on ideology, but on the economic force of the organic turn. Organicists knew that as government interest in biofuel waxed, its interest in pasture could wane.

In Washington State the fear was that suburbs growing east of Lynden toward the Cascade Mountains would overrun marginal dairy farms and turn pasture into sprawl (SCHOLTEN forthcoming 2009). This upset local residents and urban consumers who enjoy grazing farmscapes and know confined cows suffer more lameness, mastitis and shorter lives than cows on grass (HASKELL et al. 2006 and 2007).

4 Mapping biofuel and pasture (USDA, DEFA; DBV; FAO grain)?

Fear that crops for biomass could displace pasture was not confined to the USA. The FAO (2008c: 74) predicted that "[t]he sugar-cane area in Brazil is expected to almost double to 10 million hectares over the next decade; along with expansion in the Brazilian soybean area, this could displace livestock pastures and other crops, indirectly increasing pressure on uncultivated land." The effects could emerge in geographical differentiation: for example, cheese production displaced by Mid-West maize for biofuel might be relocated on land that is unsuitable for arable crops in hilly New England, but fine for dairying.

How great a threat is biomass to pasture? It is a tricky question because, for instance, some of the Amazon rainforest cut in Brazil is turned to biomass and some to pasture. FAO data (Table 2) show that between the years 2000 and 2005 there were declines in permanent meadow and pasture in Russia (-1.3 %), India (-4.6 %), France (-1.8 %), Germany (-2.6 %), Ireland (-9.7 %), the UK (-1.3 %), the EU (-0.4 %), and the World (-0.66 %). In the same period the area remained the same in China (0%). Brazil indicated more pasture area (+0.4 %), as did the USA (+0.54 %). US additions to pasture might result from the extension of irrigation to arid areas for heifer replacement or beef cattle grazing.

Table 2 tells us that world cattle numbers increased by 1.2 % from 2005 to 2007, and area in permanent meadow and pasture decreased by 0.66 % from 2000 to 2005. Although the time periods are not the same, the data probably result from rearing more beef and dairy livestock in feedlots, also known as Concentrated Animal Feeding Operations (CAFOs). Data later than 2005 were not found for biofuels. But in *Biofuels for Transport* the OECD's International Energy Agency (IEA 2004: 28-29) noted:

> In Brazil, production of fuel ethanol from sugar cane began in 1975. Production peaked in 1997 at 15 billion litres, but declined to 11 billion in 2000, as a result of shifting policy goals and measures. Production of ethanol is rising again, however, and still exceeds US production. …. The IEA report noted that the main EU biodiesel-

producing countries, typically rapeseed-based, were France, Germany, and Italy, whose production far exceeded that of the USA.

Table 2
Pasture area change and Production of Liquid Biofuels for Transport

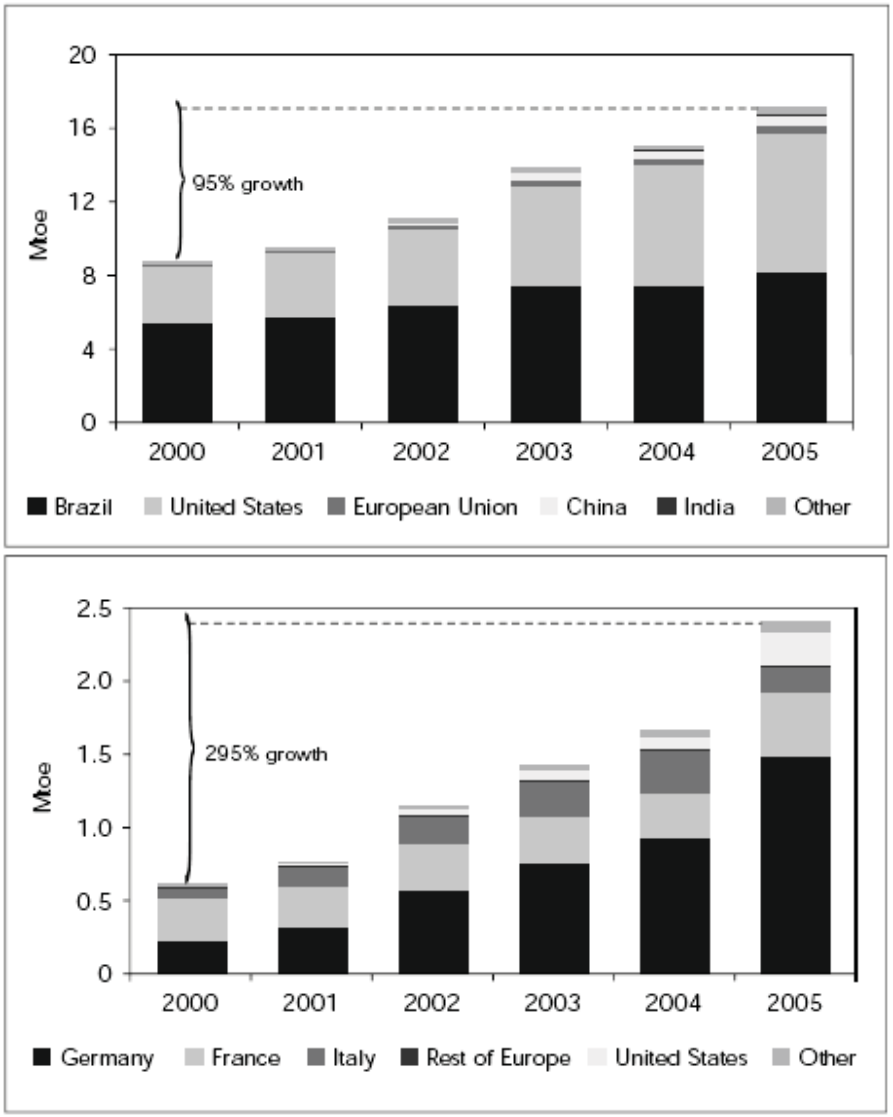
	FAO 2005 Cattle x 1000	FAO 2007 Cattle x 1000 Change in % 2005-2007	FAO 2000 Permanent Meadows & Pastures (Ha.)	FAO 2005 Permanent Meadows & Pastures (Ha.) Change in % 2000-2005	IEA 2005 Liquid Biofuels (diesel+ ethanol) Transport x 1000 MT
Brazil	207156	207170 (+14) >0%	196206	197000 (+794) +0.4%	10617
Russia	22987	21466 (-1521) -6.6%	90924	92099 (-1175) -1.3%	0
India	180837	177840 (-2997) -1.6%	11040	10530 (-510) -4.6%	161
China	115603	116861 (+1257) +1.0%	400001	400001 (same) 0%	0
France	19310	19359 (+49) +0.2%	10124	9934 (-190) -1.8%	474
FRG	13034	12600 (-434) -3.3%	5048	4929 (-119) -2.6%	2256
Ireland	6982	6710 (-272) -3.4%	3333	3010 (-323) -9.7%	1
UK	10378	9987 (-391) -3.8%	11036	11180 (-144) -1.3%	111
EU+	90887	89730 (-1157) -1.3%	182437	181702 (-735) -0.4%	3735
USA	95438	97003 (+1565) -1.6%	236331	237600 (+1269)+0.5369%	12474
World+	1372508	1389590 (+17082) +1.2%	3428481	3405897 (-22584) -0.66%	27376

Source: FAO Resource Stat (2000, 2005, 2007; IEA (2005) Renewables & Waste http://data.iea.org

IEA (2005) data on renewables and waste show that US production of liquid biofuels for transport of 12.5 million metric tons including biodiesel and bioethanol recently surpassed Brazil's production of 10.6 MMT (IEA 2008).

Charts on World Production of Biofuels (Figure 1) show that bioethanol production increased by 95% between 2000 and 2005, dominated by Brazil, although the USA neared its level in 2005. World biodiesel production increased by 295 % between 2000 and 2005, dominated by Germany, France and Italy, while the US contribution rose noticeably in 2005. But it became obvious that arable areas of developed countries could not maintain significant food or fodder production while also growing the biofuel

Figure 1
World Production Biofuels: Bioethanol (1a) and Biodiesel (1b) in million tons of oil equivalent (MTOE)



Source: IEA analysis based on F.O. LICHTS – OECD-IEA World Energy Outlook 2006, 2007

equivalent of their previous petrol use (LowCVP 2008). Opinion makers in Britain sometimes identified with the environmental movement, such as Gaia theorist James Lovelock, botanist David Bellamy, and writer George

Monbiot, have emerged favoring nuclear power as necessary to mitigate greenhouse gas emissions. Thus support grew, among former nuclear critics, for UK and US plans to replace existing reactors and add more. Meanwhile, the FRG ploughed ahead with biodiesel.

4 Prognoses on pasture and biofuel

It will be years before conclusive data are available on land use changes in the later Bush era. Judgments are complicated because the inflationary spiral begun in the biofuel boom slowed when the Wall Street subprime mortgage crisis exploded in October 2008, shaking global stock markets as unemployment rose and consumer confidence fell. One US poll found that 43% of organic consumers were now less willing to pay more for organics (HARTMAN 2008). When I quoted that statistic, the manager of a box scheme in northeast England said his local deliveries were down 40% from the preceding year, mostly attributable to economic gloom. By March 2009 the business had to be sold to a larger competitor from southern England.

Several reports indicate continuing demand for organic foods, especially milk, but the picture is mixed. Clearly, family-scale organic dairy farm incomes are pinched by processers that sell milk at discounted prices to supermarkets. Processor discounts probably help sustain organic sales in this economic crisis, but that does little to help farmers already facing bankruptcy. Organic leaders acknowledge that all processors including cooperatives are to some extent sacrificing farmers' incomes in order to maintain their market share; even so, Dean-Horizon's supermarket discounting was not sufficient to avoid falls in profits and stock prices (KASTEL 2008b).

At the time of writing, November 25, 2008, most contributors on the Odairy email chat list seemed optimistic that a minimum of 120 days grazing and 30% dry matter intake per year will help protect their niche, and end cut-price dry feedlot dairying and CAFOs in the USA. This could have a ripple effect upon the UK whose organic practices mimicked the USA. Effects upon Germany might be less because grazing remains more common there.

Some pastoralists expect UK and US energy and agricultural policies to follow those of France, in which regard for traditional or natural foods is juxtaposed with reliance on nuclear power for 80 % of its electricity. But this is unlikely to be a permanent solution, due to problems including: a shortage of world uranium reserves, difficulties in safe waste storage, and designing viable fusion reactors or safe plutonium fission reactors. As uranium dwindles in coming decades, policy makers may decide that the best technological trajectory for providing nutritious food, while mitigating pollution and climate change, may be to incorporate organic practices into conventional farming, while developing cleaner cellulosic fuel cells for transport (GRANATSTEIN 2008; POLLAN 2008). Certainly livestock agriculture has come under scrutiny for its significant production of greenhouse gases

such as methane. Pastoralists argue that grass-fed cattle emit fewer such emissions, but methane capture and reductions will be pursued to improve the total sustainability of livestock systems.

About 2007, reports surfaced in the US that private processors and even cooperatives had raised milk pickup rates on outlying farms, and excluded some previous clients. The controversial term "food miles" is attracting greater analysis to improve transport sustainability (MACGREGOR and VORLEY 2006: 13). If petroleum prices keep rising, the pressure of transport increases incentives to abandon globalised food systems (in which people have little idea on the origins of food) for a re-regionalization of food systems in which actors cut transport and processing costs via local farm-to-table networks. Due to rising costs, dairy and arable farms may have to adopt traditional rotations of as many as eight crops, in order to produce food without pesticides or excess petroleum use.

The organic dairy farms most vulnerable in the biofuel boom were those most dependent on outsourced fodder and grain. Many of these farms were converted from conventional, intensive, monoculture farms designed for high stocking rates after the Second World War. Compared with extensive pre-war farms (before 1939) with low stocking rates, such post-war farms are smaller in area. If my diagnosis is correct, it follows that successful organic dairy farms will in future consist of more land area, perhaps, as in the past, part of mixed farm crop rotations. That said, a plethora of farm solutions will be found in the transition theory of heterogeneous futures by WILSON (2007), who predicts a variety of regional characterizations ranging from organic niche farming to conventional super-productivism.

Farmers' economic sustainability is being promoted by the Organic Valley cooperative, which is so popular with consumers that it sells stock to many of them. The coop has been quick to respond to the negative effects of the biofuel boom according to Professor of Dairy Marketing Bob Cropp in *Hoard's Dairyman* (2008: 563; also ORGANIC VALLEY 2007). The coop educates its members on feed options, and established a link with the Organic Farmers Agency for Relationship Marketing (OFARM), a coop with eight farmer cooperatives/ associations for grain, dairy and livestock producers in 22 states and Ontario, Canada. While prominent in the breadbasket areas of North America, OFARM reaches into western and eastern areas far from Minnesota and Wisconsin where Organic Valley originated.

Macroeconomic pressure is increasing to reverse the trends that have made conventional farming 20 times more dependent on fossil fuel than in 1940 (POLLAN 2008). As farmers improve the sustainability of their production, patterns of comparative advantage may emerge in decentralization and re-regionalization of food systems. Geographers with long memories might expect the revival of location theory. But what is certain is that Peak Oil makes the geographies of resource management more vital than ever.

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The Changing Dynamics of Organic Farming in England and Wales

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Abstract

The retail sales of organic food continue to rise rapidly in the UK. However, constraints in the food supply chain, especially the limited growth in the area devoted to organic farming, mean that the sourcing of certain organic products is increasingly met by imports from other countries. These and other changes in the UK organic food sector require more detailed investigation. The aim of this paper is to provide some initial insights into a Defra-funded research project on the changing geographical and socio-economic dimensions of organic farming in England and Wales. This is achieved through an analysis of the geographical distribution of organic farms in 2006 and preliminary findings from a survey of organic growers in Sussex in 2007. The analysis shows that organic farming is still not penetrating the heartland of intensive farming in Eastern England; instead it is becoming increasingly concentrated to the south and west of a line drawn between Brighton in south-east England and Bangor in north Wales. Within this area, three main clusters can be identified: south-west England (Devon, Dorset, Gloucestershire and Wiltshire), south-east England (East and West Sussex, Berkshire and Oxfordshire) and south-west Wales (Ceredigion and Pembrokeshire). An important outlier of organic farming can also be found in Northumberland, to the north and east of the Brighton-Bangor line. Analysis of the dedicated supply chains of organic producers in East and West Sussex emphasized their diverse and dynamic nature, with clear signs of bifurcation but little evidence of genuine spatial clustering.

1 Introduction

The UK organic market has expanded rapidly over the past decade, with retail sales of organic products worth around £2 billion in 2007 - an increase of nearly 23 % since 2005 (SOIL ASSOCIATION 2008). Approximately 75 % of these sales are through the multiple retailers, although their share has actually fallen since 2002 due to the growth in sales through box schemes, farmers' markets, independent retail shops and farm gate sales. Despite this substantial increase in demand, the market continues to be dominated by imports because the growth in UK organic production has been less spectacular. Indeed, while the area of organic land rose by an impressive 511 % between 2000 and 2004 (from 103,000 ha to 630,000 ha), it has since fallen away (to around 499,000 ha in 2007). Much of this decline has occurred in Scotland, where many large estates have reverted back to conventional production. While Scotland still accounts for 38 % of organically managed land in the UK, only 15 % of organic producers are found there; the large majority of producers are located in England (65 %), with a further 15 % in Wales and 5 % in Northern Ireland.

While the UK organic market remains quite dynamic, conversion to organic farming has traditionally lagged behind other European countries. MORGAN and MURDOCH (2000: 170) ascribed the UK's "lowly position in the EU conversion league" to two main factors: first, the lobbying power of the industrial food chain; and secondly, the neo-liberal, market-based philosophy of successive Conservative governments where it was believed that market signals would be enough to induce a shift to organic farming. It is only since the late-1990s that government support for organic conversion has been significant and, indeed, land under conversion has started to increase again since the introduction of the Organic Entry Level Stewardship Scheme in England in 2005.

Despite the dynamism within the UK organic industry and a growing body of research on consumer motivations for purchasing organic produce (see LOCKIE et al. 2002; MAKATOUNI 2002; WINTER 2003; SHEPHERD et al. 2005; ROHR et al. 2005; MAGKOS et al. 2006; CLARKE et al. 2008), the socio-economic dimensions of organic food and farming in many developed market economies remain much less well understood. As SMITH and MARSDEN (2004) have noted, much of the policy-related and academic literature tends to treat "organics" as one homogeneous category, measured as above in terms of organic production and retailing statistics, often with limited attention given to the different supply chains and potentially differentiated marketing channels that have evolved within the sector. Thus in a UK context, relatively little is known about:

- The changing geography of organic farming. While organic farming has been likened to the diffusion of a new innovation (PADEL 2001), with its attendant clustering and neighbourhood effects, the distribution of the phenomenon is often ignored.

- The different marketing channels used to sell organic produce. Although supermarkets continue to account for the bulk of sales, organic farming is often portrayed as being "alternative" to conventional farming, with a focus on sales through box schemes, farmers' markets and farm shops.

- The distribution and nature of organic supply industries. Organic farming has often suffered from a lack of "local" input supplies, in both livestock and arable sectors. Yet, the distribution of these supply industries, and whether they are concentrated in areas of high organic food production, is not really understood.

- The impacts of organic farming on rural development. It is often assumed that organic farming will have positive impacts, especially in employment terms but also if produce is sold through "alternative" and "local" marketing channels.

It is the intention of this exploratory paper, therefore, to report on some of the preliminary findings from a much larger Defra-funded research project on the "socio-economic analysis of local and national organic farming markets in England and Wales"[1]. More specifically, the first section reviews some of the increasing research conducted by social scientists into different aspects of organic food production and distribution. It then analyses the geography of organic farming in England and Wales in 2006 and compares the findings to a similar and earlier study for the 1990s (ILBERY et al. 1999). Finally, it attempts to explain the resultant geographical patterns, with reference to some in-depth survey work in East and West Sussex.

2 Academic context

Organic farming is often promoted in terms of its positive ecological benefits, but it is also based on a broader philosophy that involves establishing local food chains and reconnecting people with the land. CODRON et al. (2006) suggested that the organic movement happened in two waves: first, a *radical* wave in the 1970s (which was more ecologically centred); and secondly, a *reformist* wave in the 1990s (which was more rural development centred). While this is clearly an over-simplification of how the organic movement has developed, it is nevertheless useful when considering producer motives for farming organically. More recently, TOMLINSON (2008) suggested that the British government has tried to shape the British organic sector by constructing three separate story-lines since the 1980s: first, organics as "niche market demand"; secondly, organics as "an environmental public good"; and thirdly, organics as "consumer choice" and as "not healthier". In this way, TOMLINSON argues, the government has been able to limit the growth of British organic food and farming. Such distinctions and story-lines are significant as they help to explain the nature of preferred organic markets. Indeed, producers' motives for converting to organic farming and, for some, reverting back to conventional farming are a

dominant research theme (DARNHOFER 2005). Based on evidence from numerous studies, RIGBY et al. (2001) noted the following reasons influencing the conversion to organic techniques:

- Concerns about their family's health
- Concerns about husbandry (e.g. soil degradation, animal welfare)
- Lifestyle choices (ideological, philosophical, religious)
- Financial considerations

They concluded that non-economic factors have a primary role in the adoption process, with attitudes and opinions quite different to their conventional counterparts. Similar findings were reported by TOVEY (1997) in Ireland, and HALL and MOGYORODY (2001) in Ontario, Canada. Such findings could reflect PADEL and LAMPKIN's (1994) suggestion that organic farmers are typically better educated and younger than conventional farmers and the SOIL ASSOCIATION's (2006: 1) rather grand claim that:

> Organic farmers represent a discrete group of people who are generally younger, more educated and with a higher propensity for entrepreneurialism and farm diversification.

While such findings may reflect some of the earlier motivations for converting to organic farming, it seems that economic considerations have become more significant in recent years. For example, LOBLEY et al. (2005) noted the opportunities to make profit and to secure the family business as key factors affecting recent conversions to organic farming. Likewise, RIBGY et al. (2001) identified the following motivations for reverting back to conventional farming:

- Marketing and market issues
- Cost issues
- Agronomic problems (including access to technical information)
- Other (including changing personal circumstances)

Financial reasons have also dominated the reasons why some farmers decided to leave organic certification in England (HARRIS et al. 2008). Other reasons included the negative experiences of implementing the organic system on the farm, impacts of the Foot-and-Mouth epidemic in 2000/1, distance to certified abattoirs and changed personal circumstances. Indeed, HARRIS et al. (2008) concluded that the majority of those leaving organic certification are what they termed *pragmatic* rather than *committed* organic farmers; in this sense, organic farming can be viewed as just another survival strategy in agriculture.

A second and dominant research theme in organic farming has become known as the conventionalization thesis. This advocates that organic food supply chains have become "mainstreamed", especially in terms of rent structures, size of businesses controlling production, and conventional patterns of marketing and distribution (GUTHMAN 2004; LOCKIE and HALPIN 2005). The origins of this work are in the Californian organic sector, which

has become well-known for its incorporation into "conventional" food chains, redefined to suit the needs of large producers and retailers (BUCK et al. 1997). They argue that the agribusiness take-over of the more profitable sections of the market has resulted in a process of "bifurcation", with the two groups consisting of large businesses specializing in high-profit crops and a smaller sub-set of diverse growers catering essentially for the local market. GUTHMAN (2004), in an influential piece, outlined three ways in which agribusiness alter the conditions so that all growers eventually participate in the logic of intensification: first, commandeering the label so that the industry can influence the setting of production standards; secondly, appropriation, which includes moving profits further along the supply chain and away from the farm; and thirdly, conventionalization, which creates an imperative to intensify production and discourages practices such as crop rotation and the growth of pest-control diseases.

While conventionalization of organic farming is undoubtedly occurring in some places, there is considerable geographic and sectoral variation, with some regions and crops being more susceptible to take over by agribusiness. Thus both COOMBES and CAMPBELL (1998) and LOCKIE and HALPIN (2005) found a mixed picture in New Zealand and Australia respectively, while HALL and MOGYORODY (2001) contested its validity in Ontario, Canada. More recently, BEST (2008) found signs of "incipient conventionalization" in German organic farming, with a number of large and highly specialized farms adopting organic farming more recently. However, "there is no bifurcation into 'deep organic' farmers producing for the domestic market and 'organic lite' farmers supplying the global market" (BEST 2008: 103); also, both old and new organic farmers still show a strong pro-environmental orientation.

A final area of research interest relates to geographical aspects of organic farming and how the marketing of organic produce through shorter (alternative) food supply chains may help to contribute to local rural development. It is remarkable that relatively few studies have examined the changing geography of organic farming at regional and local scales. An exception to this was research conducted by ILBERY et al. (1999) in relation to England and Wales in the 1990s. They suggested that "geographically, the core organic area in England and Wales is confirmed as a crescent of contiguous counties in central-southern England incorporating Hereford and Worcestershire, Gloucestershire, Oxfordshire, Berkshire, Devon and Dorset (ILBERY et al. 1999: 290). Significantly, they found that "the key organic areas do not coincide with the arable heartland of eastern England where intensive, industrialised cereal production is the norm", leading them to conclude that "a process of spatial concentration seems to be occurring… but there is little understanding of why this is happening" (Ibid.: 293f).

More recently, some attempts have been made to explain the apparent clustering of organic farming at the local level. Following PADEL (2001), SUTHERLAND and BROWN (2007) likened such clustering in English organic farming to a neighbourhood effect, where factors such as farm type

(especially mixed farming), lower land quality, estates encouraging their tenants to convert to organic methods, and the presence of local markets for organic produce all contribute to the process of spatial concentration. Similarly, RISGAARD et al. (2007), in an examination of the role of socio-cultural processes in the differential distribution of organic farming in Denmark, highlighted the importance of land prices, interaction between organic farmers, the role of the agricultural advisory service and the existence of champion farmers as factors creating a greater degree of clustering on the Danish mainland than on its islands; isolation and a lack of interaction among "island" organic farmers were barriers to the effective operation of a neighbourhood effect. Indeed, much organic knowledge is place-specific and is often passed on by word-of-mouth rather than through official advisory systems (MORGAN and MURDOCH 2000). Finally, PARKER and MUNROE (2007) suggest that "edge effects" might be significant in the USA, whereby organic growers find a location that is protected from potentially incompatible uses. This may help avoid the need for buffer zones to protect their organic farms from the effects of neighbouring conventional farms.

LOBLEY et al. (2005) reviewed the extent to which organic farming can contribute to rural development, including employment, retaining and generating value, diversification, knowledge and networks, and community and social capital. Their overall findings suggested little difference between organic and conventional businesses in terms of impact on the English rural economy. MARSDEN and SMITH (2005) suggest that this may relate to the domination of the organic market by supermarkets, who are motivated to establish retailer-led marketing chains in order to abstract rather than capture value for the local economy. Nevertheless, research has demonstrated that the development of alternative and shorter marketing chains for both local and organic food is also highly complex (ILBERY and MAYE 2005a and 2005b). A major reason for this is that producers change the nature of their dedicated supply chains over time, usually in a search to establish more "stable" alternatives. In theory, at least, the shortening of organic marketing chains may help to encourage local rural development and contribute to the spatial clustering of organic farming.

3 Geographical patterns of organic farming in 2006

In order to examine the geographical distribution of organic farming in England and Wales in 2006, and to compare the patterns with the earlier findings for the 1990s by ILBERY et al. (1999), two sets of secondary data were required: first, the number of farm holdings and total agricultural area in each County and Unitary Authority (CUA) in England and Wales; and secondly, the number of organic holdings, organic area and area under conversion for each CUA. The former are available from the annual agricultural census and were accessed from the Defra webpages, whereas the latter were provided by Defra through their Advisory Committee on Organic Standards (ACOS). Unfortunately, the ACOS data did not provide information on either the proportion of each holding devoted to organic

farming or the area given over to different organic enterprises. This naturally restricts the level of analysis that can be provided.

The data were analysed using the location quotient (LQ), a ratio measure that, by controlling for the varying size of CUA in England and Wales, provides an indication of the relative spatial concentration of a phenomenon (e.g. number of organic farms) in a particular CUA by comparing that phenomenon with the total number of farms in that CUA. The calculation of the LQ follows the method used by ILBERY et al. (1999: 287):

$$\frac{\text{Number of organic farms in CUA 'x'} \div \text{Number of organic farms in England and Wales}}{\text{Number of farms in CUA 'x'} \div \text{Number of farms in England and Wales}}$$

A LQ value of 1.0 indicates that a CUA has neither more nor less of its share of organic farms than its overall number of farms would suggest. CUA with a LQ over 1.0, therefore, have more than their fair share of organic farms i.e. a relative spatial concentration. However, one weakness of the LQ statistic is that it is sensitive to small numbers and thus the results for some of the small CUA (metropolitan counties and some unitary authorities) have to be treated with caution. Nevertheless, and as will be seen later, the LQ analysis provides some striking differences when compared to the analysis of raw data. Three different sets of LQs were calculated: first, for the total organic area; secondly, for the number of organic farms; and finally, for the area under organic conversion.

The process of spatial rationalization identified by ILBERY et al. (1999) appears to have continued on a regional scale, but this time with the "organic core" firmly centred on the south-west rather than the central-southern region of England. Indeed, in 2006 the south-west region accounted for 31.8% of the total organic area in England and Wales, 34.5% of all organic farms and 38.5% of the total area of organic conversions (Table 1). For each of these three "indicators" of organic farming, Wales and the south-east region of England came second and third respectively. Conversely, most other regions fared quite badly in terms of the development of organic farming. Not surprisingly, these broad regional contrasts hide considerable spatial variations at the CUA scale. Table 2 confirms that, at the CUA level, Devon in south-west England is easily the leading county in terms of all three indicators of organic farming. It has more than twice the number of organic holdings (431) than the second ranked CUA, Cornwall (195), and nearly 9000 ha in conversion compared to 5872 ha in the second placed CUA of Somerset. Wiltshire and Somerset are other important organic farming CUA in the south-west, whereas the positions of Cornwall and Dorset vary considerably according to the different organic indicators.

Table 1
The regional distribution of organic farming in England and Wales, 2006

	Organic Farms		Organic Area		Organic Conversion	
Region	**No.**	**%**	**Area**	**%**	**Area**	**%**
East Midlands	235	6.33	12447	4.24	2062	2.52
Eastern	266	7.17	10785	3.68	3630	4.40
North East	116	3.13	22617	7.71	6923	8.45
North West	173	4.66	19458	6.63	1781	2.17
South East	423	11.40	35798	12.20	13183	16.09
South West	1282	34.52	93416	31.84	31558	38.54
Wales	710	19.13	63546	21.04	15426	18.82
West Midlands	351	9.46	26310	8.97	3974	4.85
Yorks/Humber	155	4.18	9033	3.08	3388	4.13
England/Wales	3711	100.00	293410	100.00	81955	100.00

Source: Defra's Advisory Committee on Organic Standards

Table 2
The top10 CUA in terms of raw organic data

Organic Farms	Organic Area	Organic Conversion
Devon (431)	Devon (24813)	Devon (9000)
Cornwall (195)	Wiltshire (22218)	Somerset (5872)
Somerset (195)	Northumbria (19627)	Wiltshire (5594)
Powys (162)	Powys (16166)	Northumbria (5404)
Wiltshire (151)	Somerset (12658)	Oxfordshire (5072)
Dorset (141)	Gloucester (12214)	Ceredigion (3995)
Gloucester (138)	Shropshire (11974)	N W Wales (3650)
Pembroke (124)	Cumbria (11614)	Gloucester (3640)
Hereford (121)	N W Wales (10895)	Dorset (3581)
Lincoln (111)	Dorset (10589)	Cornwall (3209)

Source: Defra's Advisory Committee on Organic Standards

Overall, and in terms of raw data, the top 10 CUA accounted for 52% of the total organic area and 48% of all organic holdings in England and Wales in 2006; this compares with figures of 70% and 50% respectively in 1996. This suggests that, while organic farming is becoming more spatially concentrated at the regional level, it is becoming more dispersed at the CUA scale. It is not easy to discern why this should be the case, although it could

reflect both the dangers of using raw rather than ratio data and variations in the average size of organic farms. Indeed, if one compares the organic area with the number of organic farms in each CUA, Northumbria in north-east England emerges with by far the largest average area of organic production per farm, which at 236.5 ha (19,627 ha on 83 farms) is a long way ahead of the second most important CUA – Wiltshire (at 147.1 ha). In contrast, the average organic area per farm in other leading organic CUA is below 100 ha, including Devon (57.6), Cornwall (47.4), Somerset (64.9), Ceredigion (80.7) and Gloucestershire (88.5).

If one examines the top 10 CUA in terms of LQ rather than raw data, for each of three key "indicators", some stark contrasts emerge (Table 3). The most striking example is that of Devon which slips from 1st on all indicators in terms of raw data to 10th in terms of organic area, 7th in terms of the number of organic farms and 9th for organic conversions when using the LQ. This is a very significant finding and further highlights the problems of examining and mapping raw data. In contrast, other CUA become much more prominent. For example, Wiltshire in now the leading area in terms of both organic area (LQ of 2.95) and number of organic farms (2.25), but falls to 6th place for organic conversions (2.66). Likewise, both Pembrokeshire and Ceredigion (both in south west Wales) improve their relative positions considerably: the latter is now ranked 1st in terms of organic conversions (3.58), 4th for organic area (2.21) and 6th for the number of organic farms (1.74), just as the former is ranked 2nd for organic farms (2.24) and 3rd for organic area (2.53). Other CUA to improve their

Table 3
The top 10 CUA in terms of location quotients

Organic Farms	Organic Area	Organic Conversion
Wiltshire (2.25)	Wiltshire (2.95)	Ceredigion (3.58)
Pembroke (2.24)	East Sussex (2.65)	Oxfordshire (3.38)
Dorset (2.05)	Pembroke (2.53)	S. Yorkshire (3.00)
Northumbria (1.84)	Ceredigion (2.21)	West Sussex (2.90)
Gloucester (1.75)	Gloucester (2.14)	Somerset (2.74)
Ceredigion (1.74)	Dorset (1.89)	Wiltshire (2.66)
Devon (1.71)	Northumbria (1.87)	Dorset (2.29)
East Sussex (1.62)	S. Yorkshire (1.85)	Gloucester (2.29)
Oxfordshire (1.61)	West Sussex (1.81)	Devon (2.21)
Berkshire (1.56)	Devon (1.70)	N W Wales (1.93)

Source: Agricultural Census June 2006; Defra's Advisory Committee on Organic Standards

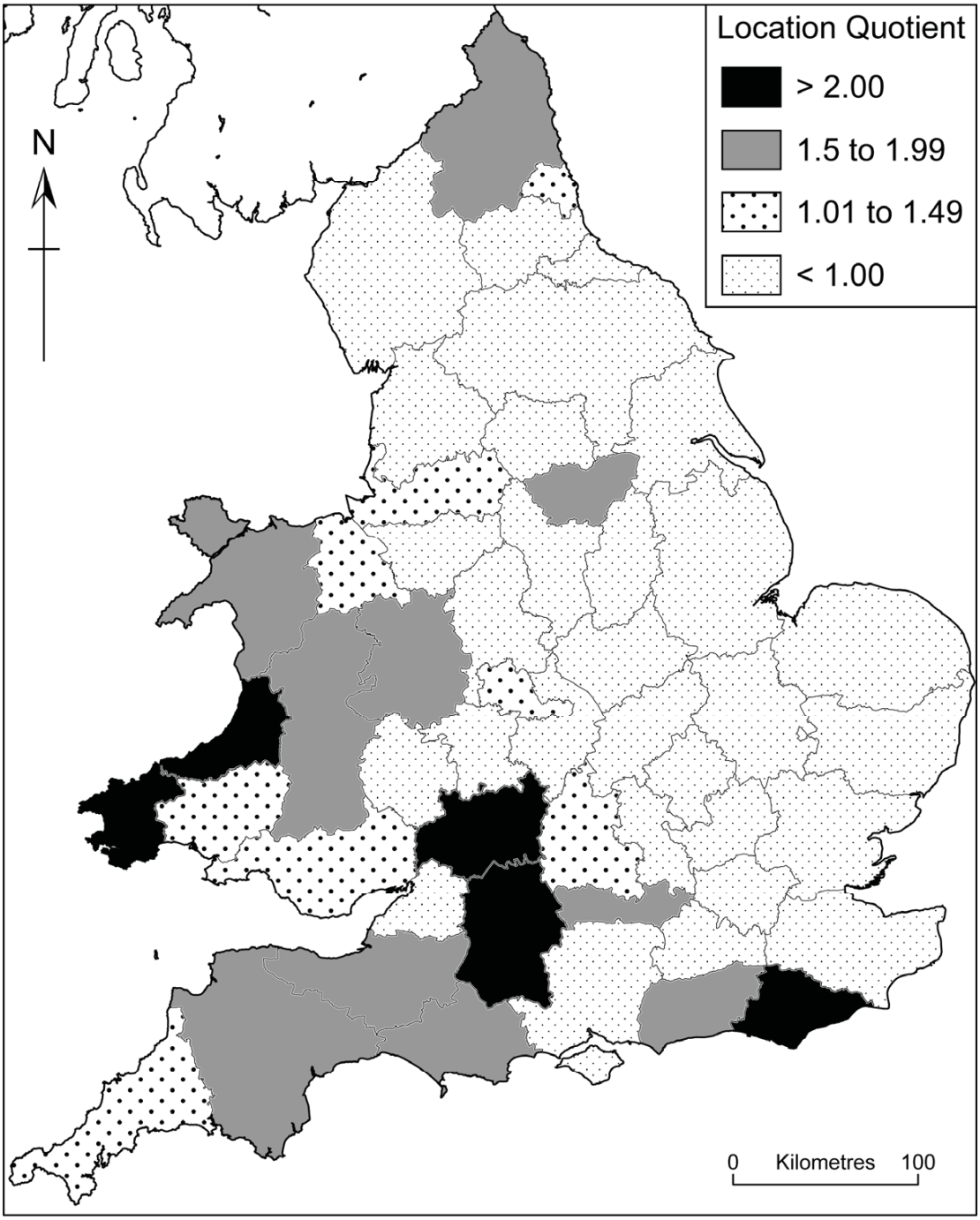
relative positions include Dorset, Gloucestershire and East Sussex, while Somerset and Powys move in the opposite direction. One final observation from Tables 2 and 3 is the almost total absence of Herefordshire and Worcestershire (in the West Midlands); this contrasts with their dominant position in the "organic core" in 1996.

A clearer visual insight into the geographical patterns of organic farming in England and Wales in 2006 is obtained when the LQ values for the different CUA, for each of the three "indicators", are mapped. Taking organic area first, Figure 1 shows that the 23 CUA with an LQ over 1.0 are concentrated primarily in the south-west, south-east and central-southern regions of England, and in most of Wales. On this basis, the majority of organic farming seems to take place to the south and west of a line drawn between Brighton in East Sussex and Bangor in North Wales. Within this quite large area, three sub-clusters seem to be emerging: in order of significance, these are first, Wiltshire and Gloucestershire in south-west England; secondly, Pembrokeshire and Ceredigion in South Wales; and thirdly, East and West Sussex in south-east England. A quite prominent outlier of organic activity is also found in Northumbria, to the north and east of the Brighton-Bangor line. However, Figure 1 is also striking for the relative lack of organic farming to the east and north of the Brighton-Bangor line, especially in the Eastern and Yorkshire/Humberside regions – the traditional "bread basket" of British farming. This reconfirms the findings of ILBERY et al. (1999) that the key organic areas do not coincide with areas of intensive cereal production, but instead concentrate in more mixed and marginal cereal farming areas, where organic premiums may enable farmers to make an adequate profit.

Figure 2, which plots the distribution of organic farms rather than organic area, demonstrates a similar but less marked pattern of spatial concentration. This time, 20 CUA have LQ exceeding 1.0 and the main sub-cluster is now focused on Wiltshire and Dorset in south-west England, with the Pembrokeshire-Ceredigion and East-West Sussex sub-clusters less prominent. Northumbria continues to emerge as an important outlier and, for the only time in terms of the three indicators, Lincolnshire (in the Eastern region) demonstrates a limited concentration of organic farms in what is otherwise a barren area for organic farming in eastern, north-western and Yorkshire/Humberside regions. Finally, the distribution of the area in organic conversion is again concentrated to the south and west of the Brighton-Bangor line. However, yet another pattern of sub-clusters is apparent (Figure 3); this time, an enlarged and very prominent sub-cluster consists of 6 contiguous CUA involving Wiltshire, Dorset, Devon, Somerset, Gloucestershire and Oxfordshire. Each of these CUA records a LQ of over 2.0. In contrast, the two other sub-clusters to the south and west of the Brighton-Bangor line (Pembrokeshire-Ceredigion and East-West Sussex) are relatively insignificant. Yet again, Northumbria is an important outlier, together this time with the smaller South Yorkshire CUA.

Overall, therefore, and in contrast to the single "organic core" in central-southern England in 1996, there now appear to be three significant sub-clusters of organic farming activities to the south and west of the Brighton-Bangor line: the south-west (notably Wiltshire, Devon, Dorset and Gloucestershire), the south-east (notably East Sussex, West Sussex and Oxfordshire) and south Wales (notably Pembrokeshire and Ceredigion). Northumbria is a significant outlier of organic farming in the north-east. Clearly, more detailed research is needed to help explain these patterns of spatial concentration. East and West Sussex are part of one of these important sub-clusters and so the next section reports on some preliminary findings from in-depth fieldwork undertaken in this area.

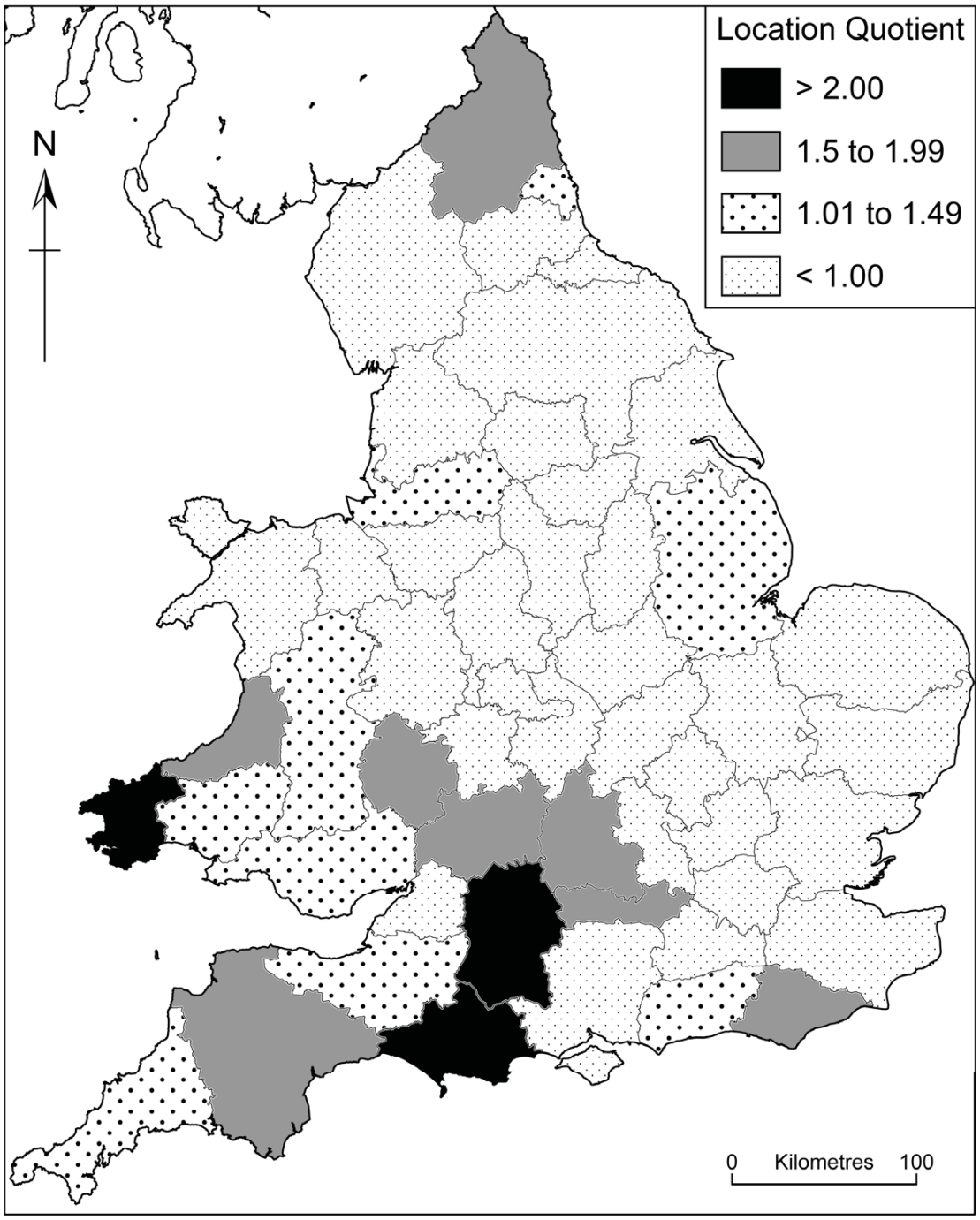
Figure 1
The distribution of organic farming by area in England and Wales



This work is based on data provided through EDINA UKBORDERS with the support of the ESRC and JISC and uses boundary material which is copyright of the Crown.

Source: The June 2006 Agricultural Census, Defra's Advisory Committee on Organic Standards

Figure 2
The distribution of organic farms in England and Wales



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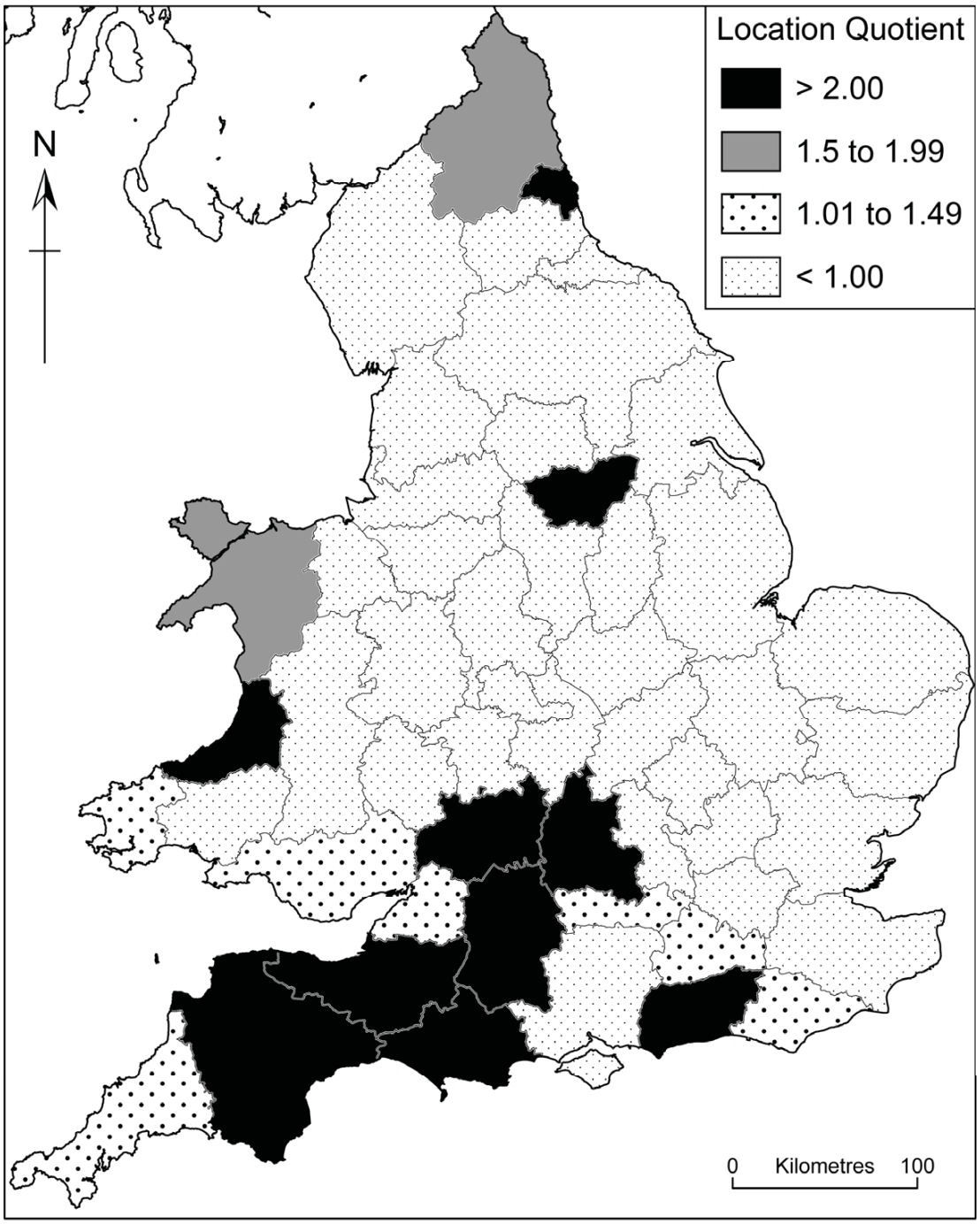
Source: The June 2006 Agricultural Census, Defra's Advisory Committee on Organic Standards

Figure 3
The distribution of land in organic conversion in England and Wales



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Source: The June 2006 Agricultural Census, Defra's Advisory Committee on Organic Standards

4 Organic farming in East and West Sussex

Located in south-east England, East and West Sussex are quite wealthy CUA within relatively easy commuting distance of London. Thus initially the relative concentration of organic farming in this area could reflect the prosperous nature of the regional economy and an increasing demand for organic food by fairly affluent consumers. However, East and West Sussex represent quite a large area, within which the distribution of organic farms does not appear to be particularly clustered. To try and understand more about the nature of organic farming in the area, especially in terms of producer motives, supply chain dynamics (i.e. upstream and downstream dimensions) and rural development impacts, 22 organic farms were selected for in-depth interviews. A "whole chain" approach was adopted, which emphasises the geography and nature of business relations. Such an approach seeks to identify links upstream and downstream from the producer. More specifically, it aims to: l) investigate how food supply chains are constructed by (specialist) producers; 2) trace links between producers and other actors in the supply chain; 3) follow up those links to understand how different actors in the supply chain relate to one another, and 4) unpack how social and economic relations co-relate in the context of a region's local food economy (see ILBERY and MAYE 2008, for further details). Only some very provisional findings can be presented here.

One of the first, and key, features to emerge from the 22 organic farms was their sheer diversity, in terms of size, farm type, tenancy status and farming backgrounds. Thus the size of business varied from just 2.2 ha to a massive 4,500 ha, with a whole spectrum of farm types from intensive horticultural production (salad, vegetables and fruit), livestock farming (dairy, beef and sheep) and cereal production. A significant number rented sizable amounts of land and some businesses were run by a farm manager; indeed, there were very few fully-owned family farms. This diversity reflected a desire to constantly change the nature of their organic food supply chains in terms of input suppliers and marketing channels. For many, organic certification (with either The Soil Association or Organic Farmers and Growers) has been obtained only within the last 10 years, demonstrating conversion to organic by many former conventional farmers.

The diverse and dynamic nature of the organic businesses lends support to the idea of "bifurcation" in East and Sussex, as advocated by GUTHMAN (2004) and LOCKIE and HALPIN (2005). Thus on the one hand, there are a number of organic commodity producers who are selling their raw products to either supermarkets or organic cooperatives such as OMSC (Organic Milk Suppliers Cooperative) and OLMC (Organic Livestock Marketing Cooperative) and are not trying to either add value or sell their produce locally. On the other hand, the usually smaller organic growers are attempting to produce for the local economy and to sell their produce through farm gate sales, box schemes, farmers' markets and farm shops. However, this divide between what GUTHMAN (2004) describes as "deep" and "lite" organic producers is sometimes blurred as those focusing on

commodity production occasionally sell small amounts of produce locally, just as the more "alternative" producers have to now and then dispose of surplus produce through more conventional channels. In fact, a number of organic producers are struggling with different forms of direct marketing which, despite the rural development rhetoric, are not easy to develop and maintain in practice. One reason for this is the growth of large and national "alternative" forms of direct marketing by companies such as Riverford and Abel and Cole.

It is perhaps not surprising that the diverse and bifurcated characteristics of organic farming in Sussex reflect a range of motives for farming organically. For most, the economic imperative is vital and, while producers sometimes also mentioned environmental, health, welfare and deeply-held family traditions as motivating forces, these could only be practised if the business was making a profit. Clearly, the sample included few producers from the initial radical wave of organic production; most were market-driven and very pragmatic about why they had converted. However, a few fairly recent converters were already thinking of reverting to conventional production in response to rising cereal (and to a lesser extent, milk) prices and the escalating costs of organic inputs (notably seed and feed).

One of the most significant and possibly surprising findings relates to the upstream element of the organic businesses. Although often wishing to produce as much of their own input supplies as possible and/or to source the necessary organic inputs from within the local region, very few input suppliers are actually located in Sussex. Nearly all of the businesses had to purchase some or most of their primary inputs from outside the two CUA; in many cases, the input suppliers are long distances away (e.g. Devon, Yorkshire, Lincolnshire, Suffolk and Leicestershire), with some input supplies actually coming from abroad. This "problem" seemed particularly acute in terms of organic livestock feed (especially proteins) and for cereal/grass seeds and plants, but was also noticeable for other inputs such as packaging, labels, meat boxes and polythene. However, more secondary inputs were often sourced locally such as straw, manure, compost and a range of professional services, and some organic producers did source products from other local organic businesses at certain times of the year to sell through their farm shops and box schemes. This dearth of local input suppliers is certainly not a factor that helps to explain the relative concentration of organic farming in East and West Sussex.

The range of marketing channels used by the different producers was testament to the diversity of organic farming in the region. Normal commodity markets were used by some producers and one very large-scale producer of salad crops, spinach and vegetables to the major supermarkets also had farms in Spain and thus emphasised continuity of supply and quality as key marketing features of the business. For such commodity producers, sourcing inputs mainly from and selling products to other areas, there was relatively little impact on the local economy and community, apart from the employment of some local labour. However, the rural/community development impact for those running box schemes,

attending farmers' markets and selling produce through farm shops and local retail outlets was considerably higher. This often did not involve any significant employment of local labour and thus extended beyond the purely economic dimension of local rural development into social and community relations.

Finally, organic farming in Sussex did not appear to be particularly stable. Many producers, both large and small, were bemoaning poor prices for their products and the constantly rising costs of inputs. Many felt that there was a lack of genuine government support for organic farming in the UK, as suggested by TOMLINSON (2008), and that it was becoming too regulated by the certifying bodies who were thought to be interested in empire building and the marketing of organic food rather than the real economics of organic farming. Perhaps surprisingly, there appeared to be little real networking or cooperation among the organic producers in the area, normally one of the key prerequisites for spatial clustering and operation of the neighbourhood effect (RISGAARD et al. 2007). Indeed, the "whole chain" analysis outlined here provides few clues as to why there is a relative geographical concentration of organic farming in Sussex. It would appear to reflect more regional than local factors and does not seem to relate to features such as cheaper land prices, the activities of advisory services, cooperation between producers, a concentration of input suppliers or a concerted focus on local organic markets.

5 Conclusions

Despite increasing interest among researchers in the growth and changing nature of organic farming in Europe and elsewhere, relatively little attention has been devoted to the mapping and explanation of organic production at regional and local scales. Indeed, the dedicated organic food supply chains developed by individual producers, including both upstream inputs and downstream marketing channels, have rarely been examined; until they are, it will be very difficult to explain the geography of organic farming in terms of clustering and neighbourhood effects, as well as the potential effects on local rural development. This paper, therefore, has mapped the geography of organic farming in England and Wales in 2006 and compared it with patterns found a decade earlier. It has then focused on one identified area of relative concentration - East and West Sussex - and provided some initial insights into the diversity and dynamics of a number of dedicated organic food supply chains.

A number of interesting conclusions have emerged from this study. First, at a regional scale, organic farming in England and Wales seems to becoming more spatially concentrated, to the south and west of what we have termed the Brighton-Bangor line. The "organic core" is now firmly centred on the south-west region of England rather than on the central-southern region as it was in the early 1990s. Organic farming is yet to penetrate the arable heartland of eastern England to any real extent. Secondly, three sub-

clusters of organic farming are prominent to the south and west of the Brighton-Bangor line: first, in the south-west (Wiltshire, Dorset, Gloucestershire and Devon); secondly, in the south-east (notably East and West Sussex); and thirdly, in south Wales (notably Pembrokeshire and Ceredigion). Interestingly, organic farming appears to becoming more dispersed at the CUA level and Devon, which ranks as the leading county in terms of raw organic data, is ranked only 10th in terms of organic area, 7th for the number of organic farms and 9th for organic conversions when the LQ measure is used.

Thirdly, the East and West Sussex sub-cluster of organic farming is characterised by diverse and dynamic patterns of activity. There is clear evidence of bifurcation, with some of the more recent farmers converting to organic farming and producing for what is essentially the organic commodity market. However, a number of organic producers are attempting to use "alternative" marketing channels and thus contributing more to local rural development. Fourthly, and significantly, a high proportion of the more important organic inputs, such as feed and seed, is being sourced from outside Sussex. This makes the relative concentration of organic farming in East and West Sussex difficult to understand. Indeed, there is little evidence of a neighbourhood effect leading to clusters of organic farms at the local level; the organic producers seem fiercely competitive and tend not to cooperate with each other to any large extent.

Overall, the results reveal the dynamic nature of the organic sector in England and Wales, both in terms of the spatial concentration of farms and the way that organic materials are sourced and marketed. The UK organic industry is clearly undergoing a process of "mainstreaming", as organic products flow from farm to the supermarket. Equating this process as evidence of conventionalization in its purest California-centric sense is less clear-cut as farms, including some bigger enterprises, work to limit input supplies and to retain farm-level control on marketing and supply. Clearly, further and more-detailed research is needed on the changing dynamics of organic farming in England and Wales.

Footnote

[1] This is a two-year funded research project, led by the Centre for Rural Policy Research in the University of Exeter and also involving the Countryside and Community Research Institute in Cheltenham and The Henry Doubleday Research Association in Ryton-on-Dunsmore.

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Globalization the Salmon Way and Regionalization the Carp Way: Experiences with Aquaculture in Scotland and Bavaria

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Abstract

Aquaculture in Europe is mainly concentrated in peripheral coastal and rural regions, but comprises very diverse food systems, spanning from systems dominated by many small family or artisanal farms producing fish for local/regional consumption to globally integrated systems controlled by a few multinational companies catering for international markets. In this paper two aquacultural food systems at the ends of the spectrum will be analyzed: the traditional and largely unchanged "localized" form of carp farming in Bavaria (Germany) and the increasingly "globalized" form of salmon farming in the Highland & Islands (Scotland). The paper will examine how suitable often-quoted economic, production, ecological, spatial, governance and consumption stereotypical features of "local" (in German "regional") and "global" food systems are for the case studies presented here; it will then try to explain their different development pathways, and finally look into the consequences of local and global forms of fish farming for rural development.

1 Globalization and localization in fish farming

In a recent seminal article Michael WOODS (2007: 486) argued "for a revitalized rural geography of globalization by tracing the consequences of a relational perspective on place for our understanding of the remaking of rural places under globalization". As a reply to his quest for place-based studies under the influence of globalization, this paper sets out to compare two fish farming areas which have developed in widely divergent ways. While Scotland, and here particularly the Highlands and Islands, have within a few decades developed into a playground for global aquacultural actors, Bavaria's centuries-old fish farming areas, exemplified by Franconia (Franken) and Upper Palatine (Oberpfalz), have essentially remained local/regional fish producing systems with few external influences.

Globalization is here understood as the transformation and integration of agro-food production into a globally networked food system with a concomitant loss of local autonomy of rural communities. The process includes the industrialization and anonymization of production, the vertical and horizontal integration of the food chain as well as external governance. In its purest form the quality of the product is restricted to its physical/chemical food attributes. By contrast, *localization* – the Germans prefer the term "regionalization" – is here deliberately used as a counter-model of globalization. It is based on – physical and social/cultural – proximity between producers and consumers. At the same time, localization can be and often is interpreted as a moral category: an economic, ecological and socially sound form of cultivation/production of food supported by responsible consumers. The quality of the product includes non-food attributes.

Fish is a food item whose significance for the development of rural areas has been somewhat underestimated and under-researched. Yet it has the same transformative potential as other "land-based" agricultural food items and serves here to illustrate fairly extreme cases of "contextualization".

After a brief overview of fish farming in the case study areas (section 2), this paper will describe the relevant features of salmon and fish farming in the sample areas and test whether they correspond to attributes often associated with globalized and localized food production systems (section 3). It will then try to explain why salmon farming in Scotland and carp farming in Bavaria have developed so differently (section 4), before it will answer the question what the "globalized" and "localized" aquacultural food systems mean for rural development in the respective areas? (section 5).

2 Fish farming in Scotland and Bavaria

Fish farming is the principal form of aquaculture. It involves raising fish commercially in cages, ponds or tanks, usually for food, by regular release of juveniles, feeding and protection against predators etc. Fish species raised by fish farms include salmon, catfish, tilapia, cod, carp, trout, cobia and many others. The way fish farming is practised varies from very intensive to very extensive, with the farming of Atlantic salmon (*Salmo salar*) in Scotland and carp (*Cyprinus carpio*) in Bavaria almost at the opposite ends of the spectrum.

Although fishing and angling have been practised for centuries in Scotland, fish farming is a fairly recent development. Unilever played with the idea to start it in Scotland as early as the end of the 1950s; however the first trout fish farm was only established in 1965. When salmon farming was rendered possible by full domestication (200 years after the first artificial fertilization by JACOBI in 1765), the first Scottish salmon farm operations began in the late 1960s and early 1970s. The first fully established salmon farm started to operate in Loch Ailort in Inverness-shire in 1969. In 1971 the total production in Scotland was 14 metric tonnes; by 1976 it was already 116 tonnes. Produced tonnage only became significant during the 1980s and totalled 100,000 tonnes in 1997, with a value of £230 million and a corresponding retail value of £500 million (RAE 2000: 619f).

The emphasis of Scottish fish farming is on salmon (ova, smolt and adult fish), rainbow trout and other finfish, supplemented by shellfish. In 2007, 44 companies were actively involved in Atlantic salmon production in Scotland; at 252 active fish production sites they produced approx. 130,000 tonnes. In their final stage, salmon are grown in large cages or pens in sheltered marine waters (fjords/lochs, bays). As the hydrographic conditions are better on the Western and Northern coasts of Scotland, the regional focus is clearly on the Western fringe of the Highlands & Islands and Argyll. Some farms are located on the Orkneys and Shetland islands.

In Bavaria aquaculture has a centuries-old tradition. Currently approximately 20,000 hectares of ponds and 35,000 hectares of rivers and lakes are used for raising fish, with a production of 7,200 tonnes of carp, 8,500 tonnes of trout, char and similar fish as well as 325 tonnes of vendace, whitefish/powan, carp bream and others (http://www.lfl.bayern.de/foerderwesen/artikel/27700/). Carp farming was introduced in the early Middle Ages and mainly practised by the monasteries and – less frequently – promoted by the gentry. A major set-back was the dissolution of the monasteries in 1803. Since then the number and area of ponds have roughly dropped by half. But even today about 50 per cent of German carp are produced in Bavaria.

Within Bavaria there are three major regional concentrations of carp production. With almost 14,000 ponds, the Oberpfalz (Upper Palatine) is Bavaria's "wettest" administrative region and comprises two focal areas for growing the *Oberpfälzer Karpfen*: one in the middle part of the region in the *Landkreis* Schwandorf und *Landkreis* Amberg-Sulzbach with approximately 3,000 ponds and the other in the north in the Tirschenreuth area with approximately 4,300 ponds. Another core area is the "Franconian carp belt" with some 3,000 ponds. It stretches from the Rivers Wörnitz and Altmühl to the Rivers Rednitz and Aisch. In the centre of this belt lies the Aischgrund, where the *Aischgründer Karpfen* is produced in approximately 1,500 ponds. The carp grown around this area are referred to as *Franken-Karpfen*.

3 How global/local is salmon/carp farming in the sample areas?

This section examines characteristics of "global" and "local" fish production in the two sample areas, Scotland and Bavaria. As a starting point a binary opposition of attributes is used that are frequently associated with globalized and localized food production systems. Admittedly, food systems are not "neatly bounded, separate and static" (HINRICHS et al. 1998), but a deliberately simple model is used as a reference point in order to show where the real-life sample case studies match or deviate from it.

Table 1
Features of global and local production

	Global	**Local**
Economy	market economy economics of price TNCs dominating corporate profits	moral economy economic sociology of quality independent artisans producers prevailing community wellbeing
Production	intensification large-scale production industrial model	extensification small-scale production natural models
Ecology	monoculture resource consumption & degradation	bio-diversity resource protection and regeneration
Spatial relations	relations across distance commodities across space	relations of proximity communities in place
Governance	big structures technocratic rules	voluntary actors democratic participation
Consumption	homogenization of foods ubiquitous commodity	regional palates commodity plus

Source: adapted from HINRICHS 2003

3.1 Globalized salmon farming in Scotland

In economic terms salmon farming clearly shows features of a globalized food production system. Salmon farming is a pure market economy business where economics of price determine the general development and where transnational companies have clearly become the dominant actors.

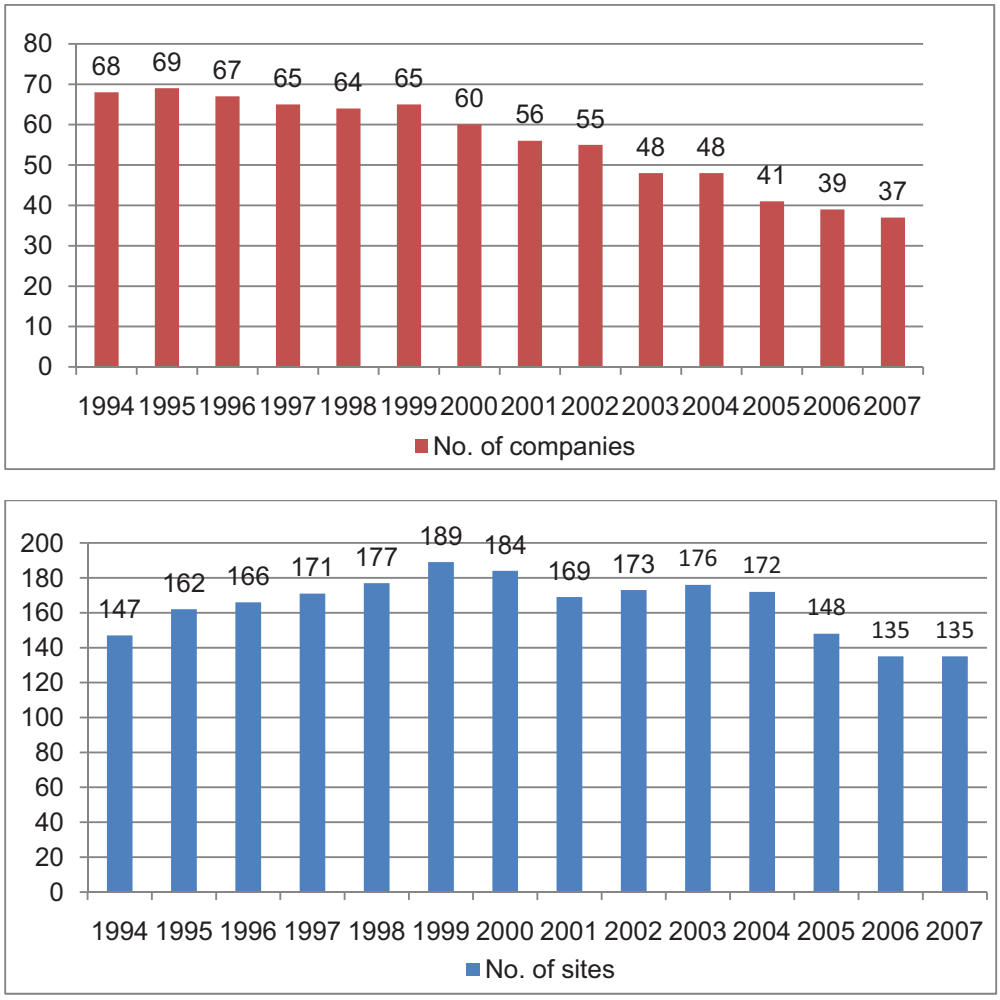
Between 1980 and 2004 the world production of the different salmon species quadrupled and by the end of this period farmed salmon and salmon trout made up five-sixths of the world supply (KNAPP, ROHEIM and ANDERSON 2007: xv). The principal salmon producing and exporting countries are Norway, Chile, Scotland and Canada, with Norway and Chile clearly dominating the global markets. Other countries like the Faroe Islands, Ireland, Iceland, Japan and the USA are of minor importance. Scotland is the third largest producer in the world but the largest of farmed salmon in the European Union.

The salmon farming industry is capital intensive and volatile. While salmon production has expanded, margins have reduced. International prices fell and at the beginning of this millennium some companies were forced out of the market altogether and the remaining companies began to merge. This world-wide "consolidation of industry" has been true for salmon producers but also for the salmon feed producers. In Scotland the number of fish farming companies declined from 68 in 1994, over 60 in 2000 to 37 in 2007 (cf. Figure 1).

Concomitantly to the decline in number of operators, salmon farming in Scotland was taken over by transnationally operating companies (TNCs) that try to improve their economies of scale, and the industry in Scotland was more and more horizontally integrated. Already in 2000, 47 % of Scottish salmon output was produced by foreign enterprises (BERRY and DAVISON 2001, quoted in BOSTICK, CLAY and MCNEVEN no date). In 2006, 11 (of 39) enterprises accounted for 95 % of Scottish salmon production, 90 % of them were Norwegian-owned, only 10 % still Scottish-owned. The biggest companies were Marine Harvester, which is the world leader in salmon production, Scottish Seafarms, Hjaltland Seafarms, Marine Farms and the Mainstream Group. This external control by TNCs means that Scottish salmon farming is now part of a global production system with decisions ultimately taken at the different headquarters in Norway. It also means that an unknown share of profits is no longer reaped in Scotland.

Also in terms of production salmon farming is truly globalized. Since its commercial beginnings in the 1970s, salmon farming has been increasingly intensified and is now characterized by large-scale production clearly following the industrial model.

Figure 1
Number of companies and sites involved in salmon farming in Scotland, 1994-2007



Source: compiled from Fisheries Research Services (various years). Scottish Fish Farms Annual Production Survey.

Salmon was once a fairly rare and expensive delicacy and hence known as the "king of fish", but nowadays it is more and more frequently referred to as the "chicken of the sea". This change of moniker reflects the increasingly intensive farming conditions which have been necessary to turn salmon into a cheap mass product. Stocking densities have to be high and have been increasing over the past decades. Currently the average is 25 kg salmon per 1 cubic meter water.

In order to maintain the high stocking densities but at same time minimize costs, an elaborate feeding system is necessary. Salmon are raised on concentrated feed containing fishmeal, fish oil, soy, rape seed oil, vegetable protein and wheat, the mixture of the ingredients varying from country to country. Fish feed is almost exclusively traded by three global players, i.e. Biomar (listed), Ewos (Cermaq) and Skretting (Nutreco), who operate with

aquaculture companies on cost-plus contracts, leaving the risk of rising raw material prices to them.

The intensive farming also necessitates that the fish have to be vaccinated to keep epidemics at bay. Moreover, GMO (genetically modified organisms) production is looming at the horizon. So far experiments with transgenic Atlantic salmon have been made in Canada, where they reach market size at least twice as fast as regular salmon.

Another aspect of the intensification of salmon farming is that the number of production sites (cf. Figure 1), has decreased noticeably in Scotland, while the capacity per site has increased. This is partly due to the fact that most of the older fish farms, which were established in the 1970s and 1980s, are technologically out-dated, no longer efficient, and therefore taken out of production. For the operators this has the advantage that production can start at new unpolluted sites, with improved husbandry and management techniques.

Simultaneously to the decrease in the number of sites and increase of production per site, the productivity per person employed has increased significantly due to mechanization and automation. It doubled in the case of smolts and tripled in the case of salmon from 1996 to 2006.

Salmon production thus clearly shows many features of an intensive industrial production system. It even shows characteristics of "just-in-time production" or, more exactly "just-in-time delivery". Demand for salmon often declines during the summer months but peaks at the end of the year, and production is adjusted accordingly. The speed of growth and the time of harvesting can be influenced by shortening or stretching production cycles through changes in water temperature and light conditions (photoperiod regulation).

The global features of economy and production have their impact on the ecology. The economic externalities associated with intensive salmon farming are high and include resource consumption and eventually the degradation of valuable ecosystems.

In the early stages of its life cycle, salmon is raised in a strictly controlled environment, and even in its later stages it is grown in a monoculture under semi-controlled conditions in underwater net-cages. The relative isolation from the surrounding environment is important because on the one hand farmed salmon are endangered by birds, seals and other animals and the semi-enclosure helps to keep production losses as small as possible. On the other hand, salmon farming creates several risks for the surrounding ecosystem and its biodiversity.

One aspect is the hostile relation between farmed and wild salmon. Farmed salmon, which are genetically increasingly homogenous, outnumber wild salmon already at a rate of approximately 400:1. Escapes of farmed salmon – which sometimes even occur en masse - endanger the already red-listed wild Atlantic salmon not only because they can transmit diseases and parasites. The main problem is that escaped domesticated salmon compete with wild salmon for food, habitat and mates. They interbreed with native salmon with serious consequences for the genetic make-up and the survival rate of the offspring. This could in the long run lead to extinction of the wild species. Already the tonnage of wild salmon and sea trout catches has declined dramatically since the 1980s. The regional differentiation between Western Scotland (emphasis on farmed salmon) and Eastern Scotland (emphasis on salmon angling rivers) does not prevent ecological conflicts.

Another aspect is that a typical fish farm of some 200,000 fishes releases a huge amount of chemical, biological, organic and inorganic waste: nitrogen equal to 20,000 humans, phosphorous equal to 25,000 humans and faecal matter equal to approximately 65,000 humans (HARDY 2000; MACGARVIN 2000 in a report for the WWF Scotland gives even higher figures). Pollution from nutrients contaminates the seabed and affects its shellfish species; it causes eutrophication and thus can trigger toxic algal blooms. Pollution from chemicals (copper, zinc, fungicides, antibiotics, antiparasites, insecticides) can have a negative impact on wild organisms and enter the food chain.

How ecologically vulnerable salmon farming is has been demonstrated by several epidemics: in the 1980s Scottish fish farming was hit by a furunculosis epidemic, in 1998 an infectious salmon anaemia (ISA) epidemic brought the industry to the verge of break-down and in 2009 another serious outbreak of ISA occurred on the Shetlands.

The ecological risks have been acknowledged by the fish farming enterprises and serious attempts have been made to improve the situation. Yet, although technical advances have been achieved to counter resource degradation, pollution pressures still continue to exist, especially problems of eutrophication and build-up of algae. The environmental problems necessitate relocations and the keeping of reserve sites.

The principles, advantages and problems of "organic salmon farming" are still being debated, although the Soil Association and Food Certification Scotland Limited have produced standards for certification. So far "organic" farms are only operated off the Shetland Islands and on the Isle of Harris.

Spatial relations in salmon production clearly have global features. They can be described as transcendent (meaning here that several places are linked) and as transitional (meaning that places are only used for a limited time).

By nature salmon are a migratory fish; it spends parts of its life cycle (eggs – alevins – fry – parr – smolt – salmon) in fresh and sea water. In a natural environment, adult salmon returning from the sea lay their eggs in rivers where they traverse through the first stages of their development up to smolting. Then they enter the sea, migrate over long distances to feeding grounds in high latitudes, but after two to three years return to their native rivers to spawn.

The farming of salmon partly imitates this change of places and thus has to maintain relations across space: After breedfish are stripped, salmon are hatched from eggs and raised in freshwater tanks or spawning channels. At the age of 12 to 18 months the smolt are transferred to seacages or net pens and raised until they are harvested after another 12 to 24 months. During the whole production cycle, fish are transported between production sites. Breeding is mainly undertaken in Norway, ova are partly imported from there, partly produced on Scottish sites. Hatching takes place at Scottish land sites, but also in lakes. For on-growing registered marine sites are used and then fallowed for some months after all fish have been harvested. Processing takes place at a diminishing number of fish factories in Scotland and elsewhere.

The concentration process within Scotland and the increasing international networking of production result in increasing distances between different production sites as well as production and processing sites, and thus in increasing food miles. Seen from the Scottish angle, the salmon commodity chain spans from Norway (Research & Development) and Latin America (Peru and Chile as the main sourcing area of fish feed) over Scotland (location of main production sites) to the UK as a whole and various EU countries (main consumption countries).

Within Scotland production at certain sites can and is fairly easily abandoned as soon as production conditions deteriorate, and then shifted elsewhere. This shows some features of a footloose production system.

The governance structures associated with salmon farming in Scotland also have obvious global attributes.

The globalization of the aquaculture industry was favoured by the policies and practices of governmental organizations and agencies. Today salmon farming is characterized by big ownership structures and corporate governance with little reference to local interests. For the dominant Norwegian enterprises Scotland is a strategic production place within the EU, but major management decisions are taken abroad or at least with clear reference to the interests of the headquarters in Oslo or elsewhere.

As early as 1982 salmon enterprises operating in Scotland founded the "Scottish Salmon Growers Association" (SSGA). This body was to represent

the salmon industry in public affairs and to provide information on marketing, research and environmental issues but did not prove to be the powerful organization that bigger companies had in mind. That is why in 2006 the "Scottish Salmon Producers' Organisation" (SSPO), an expanded trade association for the Scottish salmon farming industry, was created which represents the industry in political, regulatory and technical issues. The 18 enterprises currently organised in the SSPO handle about 95 % of the tonnage of Scottish salmon production.

This strong position of the big fish farming enterprises and the body representing their interests is juxtaposed by a multitude of Scottish stakeholders and agencies involved in the planning and supervision of fish farming. That is why nature interest groups speak of governance without "teeth" vis-à-vis the joined-up economic/corporate interest groups.

Before April 2007 numerous agencies with statutory power (e.g. Crown Estate Commissioners, SEPA, Scottish Executive Development Department , Scottish Natural Heritage, Scottish Executive Rural Affairs Department, Health and Safety Executive) were involved in the legislation affecting the development of fish farms and their operations (THOMSON and SIDE 2002: 354). Under the new Town & Country Planning (Marine Fish Farming) (Scotland) Order 2007, the statutory planning controls were extended to marine fish farming and the Scottish local authorities are responsible for granting planning permission. For the seabed, i.e. all areas below the low water mark, a lease is still required from the Crown Estate Commissioners. While in the old system planning permission for fish farms was only awarded for a pre-determined period, local authorities can now give permanent planning permission for marine aquaculture facilities on the basis of a development plan. The salmon industry welcomes this change as "this will give enormous confidence to the industry, ... provide security and ... encourage further investment into many remote, rural communities." (SSPO not date). The new framework is definitely more modern and straightforward, but also marks - for the time being - the end of a long process of dividing up common property resources (described by PHYNE 1997). The question is now how powerful and circumspect Scottish local authorities will prove to be vis-à-vis proprietorial interests of strong globally-playing enterprises when it comes to weigh immediate advantages (in the form of jobs and other economic benefits) against possible future disadvantages (in the form of land/water use conflicts), especially when local interests/politics (competition between different possible sites) comes into play.

With regard to consumption, salmon is a fully commodified food item which is marketed in various forms including salmon mousse, salmon pâté and ready meals, but fresh fish and smoked salmon remain the most important end products. Roughly two thirds of Scottish salmon are consumed in the UK (25 % within food service, 75 % within grocery retail channels); the rest

is exported, mainly to France, USA, Ireland, Germany, Belgium and Luxembourg. This sales structure gives supermarket chains a very strong position vis-à-vis the primary producers (e.g. pressure on prices, product specifications), both nationally and internationally.

Its historical connotation with an upper-class lifestyle and its nutritional composition have earned salmon a positive/healthy image, which works as the main motor for consumption. Although the quality of farmed salmon is said to be inferior to that of wild salmon, farmed salmon still benefits from the "wild original". And in order to reinforce consumers' connotations various attempts at "faking the image" have been made. A fairly well-known practice is dyeing farmed salmon flesh. Wild salmon flesh has a characteristic pink-red colour due the pigment astaxanthin, which is part of a natural diet. As salmonids cannot endogenously synthesize this carotenoid, the flesh of farmed salmon would be light grey. To make up the image of wild salmon, pigments are added to the fish feed which account for 10-15 % of the total fish feed costs. This is deemed necessary as most customers purchase salmon based on visual criteria, thus overrating the optic quality to the detriment of the – difficult to judge – physiological quality, and prompted supermarkets to order salmon by colour from a Salmo fan. Only recently the practice of colour specification has been modified as the burden on the fish producers to deliver and process fish of different colours at a certain time was getting too big.

Another attempt at cashing in on the romantic image of wild salmon has been the use of geographical names from Scottish Highlands and Islands ("loch", "glen"). A supermarket chain for instance invented a non-existent locality and used it in its advertisements to generate an impression of authenticity. This is part of the general trend of turning globalized mass products into "commodities plus". Production according to certain ethical norms or ecological standards (e.g. "integrated", "controlled" or "sustainable" production) – which are not necessarily independently certified – are attempts to catch the features of "localized production" and thus improve sales and justify higher consumer prices.

Enterprises of the salmon industry recognized consumers' demand for quality assurance and introduced already in 1991 the Tartan Quality Mark (TQM). This is a private EN45001 accredited certification scheme. Members must follow fairly strict standards and procedures which are independently inspected. In addition, TQM guarantees whole chain assurance (i.e. every salmon can be traced back to its producer). Salmon has to be "Scottish" but the smoking process can be carried out elsewhere (e.g. England, France).

A year later, in 1992, Scottish farmed salmon became the first non-French product to obtain the French government's "label rouge". This is awarded to regional producer-oriented alliances which produce and market their own

branded products under a common label and follow standards certified by a third party. France is not only a very important export market for Scottish salmon, it still holds a key position in culinary image formation.

In 2004 Scottish salmon received PGI (Protection of Geographical Indication) status from the Commission of the European Communities. This status is to assure customers that products genuinely originate in a specific region and is awarded to agricultural products because of their specific quality, their reputation or other characteristics. However, the arguments enlisted in the application only refer to the "unique environment" and the "high regard by leading chefs, food writers and discerning customers world-wide" (Official Journal C246 14.10.2003) without any reference to aquacultural husbandry practices. The stricter PDO (Protected Designation of Origin) has been applied for but not (yet?) granted. For that not only one stage of production, processing or preparation has to take place in the region but the entire (!) product must be produced, processed and prepared in the given geographical area using recognized know-how.

The salmon industry has rightly recognized that labels and certifications are important selling points for consumers in a globalized world. However these did not prevent strong criticism from protest groups or environmentalists that have made sales plummet more than once. In order to counter or at least assuage the recurring accusations, the Scottish Salmon Producers' Organisation established a General Code of Practice for Scottish Finfish Aquaculture. It contains more than 300 points (consumer reassurance, fish health, environmental protection, husbandry incl. breeding, stocking and feeding) to which the members of the organization have agreed to comply and which allegedly represents "the most comprehensive and open exercise of its kind ever undertaken by any food producing industry in the UK" (http://www.scottishsalmon.co.uk/aboutus/codes.asp).

3.2 Localized carp farming in Bavaria

The economic features of carp farming in Bavaria are very different from salmon farming in Scotland. First of all, it is overwhelmingly practised by hundreds of smallholders which operate only a few ponds, often as part of an agricultural farm, or in addition to a non-agricultural profession. For them the main motivation is not profit-maximization but a mixture of market and non-market, i.e. largely social, considerations.

This can be illustrated by the results of a study among fish farmers in the district of Tirschenreuth conducted in 2006 (SCHMIED, unpublished material): Aquaculture was the main source of income for only 8.7 % of the 93 interviewees, provided an additional income for 31.9 %, but was regarded as a hobby by 59.4 %. Only 12.8 % claimed to make a profit every year, 50 % made at least no losses, 37.2 % admitted losses in some

years. Yet the majority of fish farmers continued to grow carp as part of "tradition" and "for fun", although they clearly hoped for economic improvements. Only few people solely relied on fish farming (and selling) and had to struggle hard to make a living. In the same vein, the availability of non-family labour, regional, national or international competition had hardly any influence on the decision-making of the fish farmers; marketing possibilities and producers prices had only some.

This pattern clearly shows features of a moral economy where economic aspects are closely intertwined with social ones: And indeed fish farming reinforces the bonds between individuals and their social networks in the carp growing areas. Family members are the main source of labour for most of the year, but at harvesting, which is a labour-intensive activity, or at times when extra labour is needed, friends, relatives, neighbours and/or villagers support the fish farmers. For this they are usually paid in kind, with a share of the carp yield. Many marketing networks run along informal lines with close links between consumers and "their" producers.

Producer prices are low, partly because of the social element involved, partly because of regional oversupply at certain times as well as national and international competition (from other German carp producing areas and from neighbouring Eastern European countries). However, carp farmers take a pride in their fish and rank quality more highly than quantity.

In terms of production carp farming in Bavaria is almost exclusively local. Carp is bred from the egg to the finished fish and usually harvested at the end of the third growing season and all production stages take place in the area. Moreover, most fish farmers opt for extensive forms of production (e.g. low stocking densities, limited use of fish feed). In the Tirschenreuth study area only 12.9 % of the fish farmers described their production practices as fairly intensive, 63.5 % as fairly extensive and 23.5 % as extensive. Most carp growers were risk-avoiding ("no experiments"), very few would consider any innovations (other fish species, more intensive farming methods), and only one person would consider genetically modified fish feed or fish (SCHMIED, unpublished material). The carp production methods in Franconia are more intensive (and more market-oriented) but still a far cry from the global features of salmon farming in Scotland.

This "natural model" shows the respect for the environment and biodiversity mirrored in the ecological features of carp farming in Bavaria.

Carp prefer slow moving or stagnating waters and such an environment is created in the fish ponds that mimic a natural ecosystem. However, as common carp tends to dominate other farmed fish species, it is only occasionally raised with "by-products" such as tench, pike, pikeperch, catfish and grass carp. The form of farming is – especially in comparison

with salmon growing – much more environmentally- and animal-friendly. In rare cases, especially in ponds located in protected areas, fish are not fed at all but gain nourishment from pondbed nutrients and zooplankton, and occasionally from green fodder thrown into the water from the border of the pond. More often carp are fed with peas, cereals and lupine which are produced in farms run by their growers, by neighbouring or regional farmers. Only the more production-oriented carp growers buy special feed.

The farming of carp is closely interconnected with the conservation of wild-living carp. Fish farmers sell K0 or K1 (i.e. very young fish or fish after one summer raised in ponds) to angling clubs or other fishing associations to restock rivers, lakes and ponds; this is a comparatively lucrative alternative income especially for smaller fish farms.

Carp farming areas are clearly man-made landscapes but with a high aesthetic, leisure and ecological value. Ponds collect rainwater, help to regulate surface water and have therefore a balancing effect on the hydrological system and the microclimatic conditions. Carp farming makes therefore an important contribution to environmental/nature protection, although it must be emphasized that biodiversity in carp pond areas is lower than in wetlands.

The close-to-nature form of production nevertheless does not rule out ecological impacts and problems: sediments and excrements can pollute running waters, so can the occasionally applied manure. Moreover, eutrophication/bloom of algae in very dry periods, diseases (such as spring viremia, koi herpes) or parasites (such as fish worm) do occur. But in contrast to the intensive farming practices in the case of salmon, virtually all chemical treatments are forbidden in order not to endanger the water system. This leaves carp growers with almost no scope for action but to drain the pond and fallow it until it recovers. The same is true in case of problems with beavers, cormorants and herons that can considerably diminish fish stocks but are protected by law. While fish farmers generally acknowledge their important role for the ecosystem they nevertheless sometimes fail to see the logic of certain rules and occasionally even take recourse to illegal measures.

The spatial relations of Bavarian carp farming are typical for localized production ("relations of proximity", "commodities in place"). Because of the long tradition of carp farming, local species with slightly varying characteristics have developed in the different production areas and this explains also why Bavarian carp farmers prefer local/regional sourcing of fish stock. Moreover, farmers use fish feed produced in close proximity. In the Tirschenreuth study almost 50 % of the interviewed fish farmers used their own stock and self-grown feed, stock and feed from elsewhere usually travelled only a few kilometres (SCHMIED, unpublished material). Labour is (as already mentioned) largely supplied by family members, supplemented

by neighbours, friends etc. And consumption (as will be shown below) also takes place close to the place of production.

In terms of governance carp farming is characterized by an interplay of governmental action and the action of voluntary grassroots organizations. The Bavarian government promotes fish farming as part of their policy for a multifunctional countryside and as a diversification opportunity for small- and medium-sized farms (research in government-owned fish research stations, extension, advice). At the same time, the state has set strict environmental regulations (nature protection and water regulations; close to "organic" production) and the local nature conservation authorities have to monitor compliance. On the part of the producers, several democratic self-organization groups have formed (so-called "pond cooperatives" such as *Teichgenossenschaft Oberpfalz*, *Teichgenossenschaft Aischgrund* or "producer networks" such as *Fischerzeugerring Mittelfranken e.V.*). These have shown mixed success, but generally they have proved more effective on the production side, while the marketing side is still underdeveloped.

Consumption of carp is highly seasonal; it is only fished and marketed from September to April. Demand is fairly strong in September, October and November, and then again in April during Holy Week. Surprisingly, carp is less popular than might be expected because of its nutritionally healthy composition. The average consumption in Germany in 2006 was only around 165 g per year. There are several possible reasons for this: fish, and especially freshwater fish, is not extremely popular anyway; carp contain big and small bones which many people dislike. Carp may be too big and too fat if harvested too old or it may have a slightly mossy/musty taste if not properly "watered out" in sufficient freshwater for several days (which is hardly ever the case with Bavarian carp).

Strangely enough, there are clear differences in consumption between the different carp-growing areas in Bavaria. In the Franconian Aischgrund, the local inhabitants and the population of the nearby towns and cities, especially in the metropolitan area of Nürnberg-Erlangen, have a strong regional palate for carp; the regional carp production is not sufficient and fish has to be bought up elsewhere. By contrast, in the Oberpfalz with its two traditional production areas, carp is not so highly appreciated by parts of the population and there is a risk of overproduction at certain times.

Fish marketing is difficult for several reasons. Producer prices are low to extremely low. There are few wholesale and retail traders in the carp-growing areas. Some wholesalers visit the areas and buy up the fish that they are offered. However, a large share of carp is self-marketed by the producers or directly used in restaurants, inns and pubs run by the fish farmers or their relatives, friends or neighbours.

The regional gastronomy is very important because carp is almost exclusively used as fresh fish. There is hardly any processing involved and for years the majority of carp has been cooked following a limited number of traditional recipes. Recently however consumption seems to be somewhat increasing because of the introduction and diffusion of carp fillets and of the more diverse ways of preparation (e.g. carp fries, carp nuggets, smoked fish). These innovations attract more day trippers, but few additional tourists as the tourism season (summer) and the carp season (winter) hardly overlap.

Producer groups have recognized that carp is a traditional alternative quality food whose economic potential has not been sufficiently tapped. For that it is important to increase consumers' awareness of the advantages of this regional product (high quality because of extensive feeding practices, freshness of the product, few food miles). The producer co-operative in the Oberpfalz was the first to apply for registration as Protected Geographical Indication in 2001 and *Oberpfälzer Karpfen* (the carp from Upper Palatine) was registered in 2002. The application for PDI status for Aischgründer Karpfen and Franken Karpfen was only sent to the European Commission in 2008.

4 What can explain the different development paths?

The fairly detailed description of characteristics of the fish farming systems in the sample areas in terms of economy, production, ecology, spatial relations, governance and consumption has shown that they matched the "stereotyped" features of global and local food systems surprisingly closely. This needs explanation. What made the Scottish sample area so attractive for globalization? Why has carp farming in Bavaria stayed localized/ regionalized? There are several aspects that account for the different development paths of salmon farming in Scotland and carp farming in Bavaria.

To begin with, there are historical differences. Salmon farming is a fairly recent development and spread at a time when agri-food industry took its modern globalized shape. It was a particularly attractive form of aquaculture as it promised high returns because wild salmon was in decline. In Bavaria, carp has been farmed for more than 1,000 years and is deeply culturally embedded. It is part of the religious tradition where fish is served on Fridays, during the Lenten season and at certain religious holidays, and it has more than once proved to be an important food in times of economic crisis. But it has never attracted the interests of non-regional commercial actors.

A second aspect is the difference in the commodities themselves. Salmon is a high prestige product with a ready market for health-conscious

customers; it is versatile in cooking and eating, and therefore realizes good prices. This is attractive to commercial enterprises and even to Foreign Direct Investment. By contrast, carp has a fairly poor image among the general German population. Moreover, there has traditionally been a limited range of culinary uses. This has resulted in low producer prices and restricted marketing opportunities.

A third striking dissimilarity is the difference in land ownership and fishery rights structure. In Scotland fishery rights are in the hands of a few landowners and in the case of the foreshore/seabed rest with the Crown Estate from whom the companies have to lease the sites. In Bavaria the farming of carp and other fish is dominated by small- and medium-sized pond-owners, who are not interested in expanding their production. Older carp farmers often let their ponds but do not sell them when they are no longer fit enough to manage them; they want to keep them as part of their heirloom for the next generation. Only a few bigger fish farms try to grow in size and profit from the economies of scale.

Fourthly, there are also clear differences between the two aquaculture management systems. Salmon farming requires considerable financial investments (site lease, technological equipment, manpower) and scientific knowledge. It also necessitates strategic spatial networking between different locations, not only in Scotland and the UK, but also globally (sourcing of ova, fish feed etc.). By contrast, the production of carp demands only a low level of financial investment. Labour is the main input, fish feed is often produced by the fish farmers themselves or available locally, there is only occasionally a need for specialized knowledge (advice by veterinaries or nature conservation consultants).

And finally, the interests of the actors involved in fish farming in the two countries clearly diverge. Salmon farming was only for a short period in the hands of Scottish firms, but has been taken over by fewer and fewer Norwegian firms. These act as global players and use Scotland because of its proximity to Norway as a well-located point of access to the EU and as a useful element in a strategy of spreading ecological risks. In the case of carp production, the commodification interests of the minority of bigger pond-owners have not been successful, they have been held back by the essentially non-market attitude of the majority of fish farmers.

5 Global and local fish production and the consequences for rural areas

Both salmon farming in Scotland and carp farming in Bavaria play an important part in the respective rural areas and for rural communities, but with clear differences.

Salmon production is an important part of the Scottish economy. In 2008 farmed salmon had a retail value of over £ 1 billion and accounted for about 40 % of all Scottish food exports and thus created important tax revenues, which indirectly may benefit the rural production areas.

Of more immediate importance for the rural areas where the actual fish farming takes place is the generation of employment. The SCOTTISH EXECUTIVE (2003, last modified 2005) argued as follows:

> The aquaculture industry is of vital importance to many rural and remote communities where it makes a significant contribution to promoting rural employment diversity. In some communities, where there may otherwise be few job opportunities, perhaps 30 % or more of the workforce will be dependent on its operation. In these areas its activities will also provide a foundation for the necessary infrastructure of community life, such as the local hall, shop, petrol station or primary school, as well as the development of new housing, all of which will serve to keep these and other services in the community. The employment opportunities it generates are often complementary to the needs of crofters and others. Smart, Successful Scotland: the Highlands & Islands Dimension recognizes the inter-relationship of economic and social development in a rural environment and the importance of considering any sector, particularly in more remote areas, in the context of its impact on the wider local community and economy.

How many direct and indirect jobs were created by salmon farming and processing and how these translate into additional/complementary local jobs for crofters and an increased job variety is however not clear. According to MCCUNN (1989: 211) in 1988 some 1,600 jobs depended on fish farming, 120 jobs on feed production and another 1,800 on food processing. According to the already quoted Strategic Framework for Scottish Aquaculture (SCOTTISH EXECUTIVE 2003, last modified 2005: 5) commercial aquaculture generated at the beginning of the millennium "just under 2,000 direct jobs and between 4,000 and 5,000 in the supporting sectors. Around 75 % of these are in the Highlands and Islands." But these figures include all types of fish farming and are based on a simple multiplication factor of 2.1 (direct employment to indirect employment) for calculation.

In the last few years, direct employment generated by salmon farming has been diminishing considerably due to consolidation and contraction processes within the industry (at an estimated rate of some 30 % between 2000 and 2006) and this has had effects on indirect employment as well. Some processing plants have been closed (e.g. in Stornoway and Inverness in 2008/09). Moreover, as the working environment and the pay in processing plants are not particularly attractive, enterprises have for some time (at least since the Eastern enlargement of the EU in 2004) employed a considerable number of foreign migrants. This includes also a number of

illegal workers, as newspaper reports of police raids in different fish factories have revealed.

Hardly any information is available on the spatially differentiated employment effect of salmon farming. Without doubt it improved – at least initially – the employment situation in some rural locations. Yet the relocation of sites and the concurrent dismissal of staff in the wake of the consolidation have had a serious impact on the locations dependent on the industry. Some peripheral locations with no employment alternatives were hit particularly strongly.

While fish farming has been a feature of the Highlands & Islands for the last 30 years, it has neither translated into a "regional identity building" nor into an "alternative regional economy" as there seem to have been few spin-off effects. In spite of the fairly numerous reports on the various aspects of fish farming in the Highland & Islands, thorough in-depth studies on the demographic, economic, ecological and community costs and benefits of salmon farming (also in comparison with salmon fisheries) are still missing. The current impression is that salmon farming is economically and ecologically fragile and that the rural communities dependent on this globalized form of aquaculture have remained vulnerable.

In Bavaria the localized form of fish farming has had and still continues to have a major impact on rural development: it does not only render a major contribution to keeping the countryside ecologically sound and attractive, but it also forms an important element in the life of the rural communities. Succinctly one could describe the system as ecologically and culturally/socially sustainable but – and this is the major drawback - not economically viable.

For most carp farmers aquaculture constitutes but one element of pluriactivity. This has helped them to survive through the ages and even during the last decades when economic pressures on conventional agriculture (cost-price squeeze, declining farm incomes) and rural areas in general have been continuously increasing. Dynamic, more profit-oriented developments advocated by a minority of "modern" full-time carp farmers have however in the past been hindered or at least clearly held back by the traditional and only partly economic attitude of the majority of fish farmers.

It is however necessary to overcome the diverging interests among fish farmers if the integrated rural development concepts that have been developed in the last few years and that focus on carp as a lucrative alternative regional quality food and as a motor for rural development are to be realized.

The certification of quality (PGI status for Oberpfälzer Karpfen) has already somewhat improved the image of locally produced carp and may, if properly

pursued, serve as a suitable incentive for regional development in the long run. Other attempts to increase the demand for locally produced fish are also promising. In order to attract more day trippers and tourists, several attractions have been created, for example "the fantastic carp way" (where several colourful sculptures of oversized carp surround the historic town of Kemnath), "Fridolin" (another huge fish sculpture which welcomes visitors in Höchstadt/Aisch), different "carp routes" for cyclists in Franconia, a carp museum in Tirschenreuth, and so on. Marketing campaigns and food festivals have been organized (*Aischgründer Karpfenschmeckerwochen*, *Erlebniswochen Fisch*), carp gourmet menus are served at some restaurants or inns, logos and websites (with general information on carp farming and lists of directly marketing producers) have been designed, a carp cookery book with innovative recipes has been published, and guided walks are on offer.

These activities have definitely improved the image of the carp-growing regions. At the same time, different rural stakeholders from different economic sectors (so far mainly from the fish-farming and catering/hospitality sectors) have been brought into contact by steering groups, and the gradually forming network may pay off in the future.

But not everywhere is there sufficient active support for the ongoing changes. At least in the Tirschenreuth study area, a number of the interviewed fish farmers expressed reservations about a rural development strategy based on carp farming and showed a lack of enthusiasm for concerted action. The reason for the attitude of these primary producers was that they so far benefited only indirectly from the development initiatives and had not captured an additional value to speak of.

Yet a common vision and strategy for the future of the rural carp farming areas is needed because the long-term survival of the traditional localized form of carp farming is not certain. For some years practically no new fish ponds have been created and not infrequently fish ponds have been abandoned because of the insufficient economic returns to labour. The extent of this process is unknown as no detailed chronological studies have been undertaken and as the last Bavarian aquacultural survey has not even been published due to numerous inconsistencies.

6 Conclusions

Salmon farming in Scotland and carp farming in Bavaria lie almost at the opposite ends of a global–local agro-food spectrum, which has helped to test often-quoted notions of "global" and "local" about economy, production, ecology, special relations, governance, consumption for their descriptive suitability. However, it must be emphasized that most food systems will not match the global-local dichotomy as neatly as the two case study areas,

and then the degree (and form) of globalization/localization need(s) to be determined.

The reasons behind different development paths also have to be considered in order to understand why some agro-food systems are more likely to become global while others stay local. The most likely reasons for the differences between the case study areas are historical circumstances, characteristics of the food commodities, land ownership/fishery rights, management systems and actors involved.

The final analysis of the consequences of the two fish farming systems for rural development has shown that both, the global and the local, have some advantages and that both are not without problems. These need to be acknowledged and addressed.

As the globalization of salmon farming in Scotland proceeds, it is increasingly unclear who is reaping the benefits from production and processing. The initial benefits for rural areas and particularly rural inhabitants seem to be wearing thin. The enterprises owning the majority of fish farms utilize Scotland as but one card in their strategic global play and the local population has no means to influence this situation. In spite of that the fish farm enterprises and the national supermarket chains can still take advantage of the persisting traditional and "local" image of Scottish salmon, which is captured in different marketing labels and in the PGI status granted by the European Commission. The awareness of the ecological problems caused by the intensive farm practices has improved and steps to remedy the situation have been taken, but the environmental side-effects remain serious nevertheless. The leading companies have signalled changes of location policy and the organization representing the interests of the salmon farming industry has agreed on a state-of-the-art code of practice.

In Bavaria the localized carp production system in its current form is not an act of deliberate resistance to globalization but rather the consequence of a lack of interest by non-local/non-regional actors. Economic viability is the main problem, which could be improved by better marketing and networking, i.e. concerted action of all people and enterprises involved in the fish farming sector within the major carp-growing areas. But so far only a minority of fish farmers is actively trying to remedy the current situation. The majority of local actors are largely content with the system and its social embeddedness, but would welcome greater financial rewards nevertheless, especially in view of preserving the traditional system for the next generation. All carp farmers and rural actors agree that ecologically sound farming practices are the major advantage of the system and should not be abandoned for improved commercial returns.

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Planning Problems in Areas of Intensive Landscape Change

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Abstract

The structure of the German planning law dates back to the late 1950s. It distinguishes between the planning of housing, industry and infrastructure in the so-called *Innenbereich* ("inner zone") on the one hand and the regulation of other land uses in the remaining area of the municipality (*Außenbereich* or "outer zone") on the other hand. For the latter no legally binding land use plan exists. While the inner areas have been the focus of experts, politicians and the public, the outer areas have been largely ignored. The planning law implies that agriculture and forestry are the main uses of outer areas; other land uses may be permitted as exceptions, especially when they cannot or should not be located in the inner areas. As a consequence of these "exceptions" a massive change of landscape has taken place during the few last decades caused by intensive livestock and poultry farming, wind energy plants, biogas plants, installations for the generation of solar power, and golf courses.

As the location of wind energy plants has been of strong public interest, the planning law was changed accordingly in the 1990s and many municipalities have meanwhile designated suitable areas in their land-use plans. However, the conversion of land for other energy and leisure facilities in planning practice is still unresolved.

This contribution deals mainly with the following three aspects: it will look into the impact of unplanned infrastructure on the landscape, it will question the scope of regional and municipal planning authorities to tackle the problems and finally it will argue for the need to reduce the amount of unplanned infrastructure in favour of a more sustainable development.

1 Introduction

This chapter focuses on intensive changes in the rural landscapes in the north-western part of Lower Saxony. Although there has been an inevitable growth of housing, offices and industrial sites as well as a corresponding expansion of transport infrastructure, all causing numerous problems, the focus here is on buildings, installations and quarries that are located outside the building zones of the towns and villages. Comparatively small in area, their development can greatly spoil the character of the traditional landscape.

This contribution endeavours to provide answers to the following questions:

1 Which land uses (installations and quarries) in the outer zone are most significant?

2 How are they dealt with in planning processes?

3 Is there any need to change planning regulations?

2 Types of land use outside of building zones

Table 1 is a small list of the types of buildings and land uses in question. They are presented in the order of their initial appearance in the landscape.

Table 1
Types of land use under analysis

- **quarries** (sand, gravel, stones, clay, peat) and their subsequent uses: space for nature or sports/leisure
- **power stations**
- **power transmission lines** (not considering pipelines)
- **landfills**
- **sewage treatment plants**
- **incineration plants** (waste and cadavers)
- **golf courses**
- **leisure parks**
- **pleasure grounds**
- **large stables**
- **wind energy plants**
- **solar energy fields**
- **biogas plants**

3 Planning processes

The obvious question arising is: have these structures and quarries been positively planned? Is their impact on the landscape a result of a comprehensive approach or the result of miscellaneous and scattered interests?

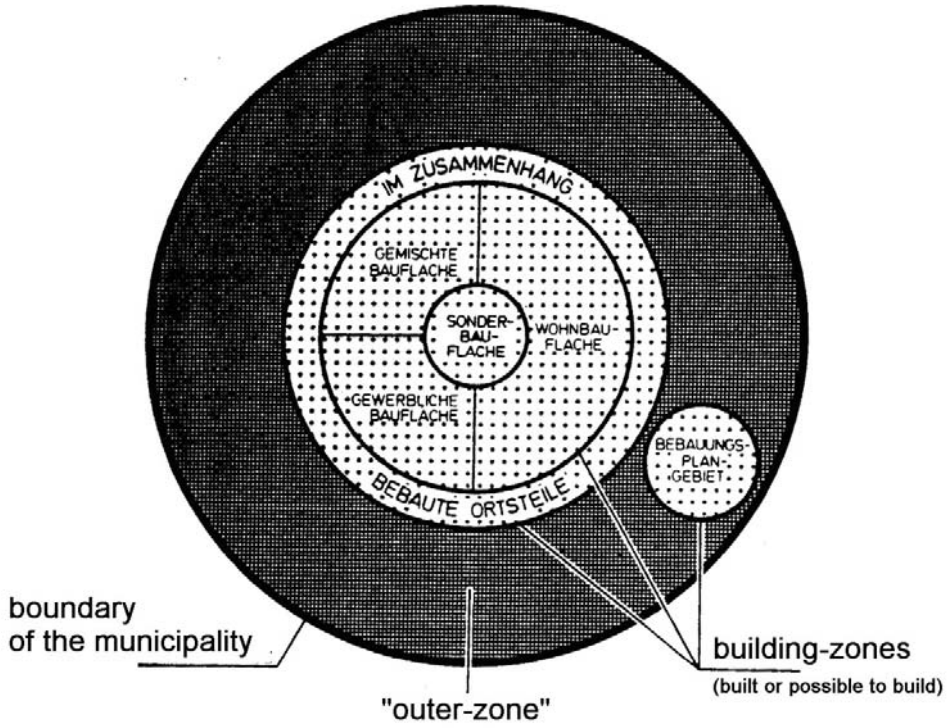
The lack of planning designation for land uses in the outer zone dates back to the time when the German planning law for municipalities was established, in the late 1950s. At that time, most of the above mentioned forms of land use had not yet been invented or had not yet been made subject to public planning.

German planning law divides the entire area of a municipality (Figure 1) into an "inner zone", which is built-up in character, and an "outer zone". Planning of buildings in the inner zone is the responsibility of architects and town-planners. The outer zone was originally used for agriculture and forestry. There seemed to be no need for area-wide planning, because at that time any form of agriculture or forestry including associated buildings seemed to be appropriate.

While the development of the inner zone has always been the subject of debate amongst experts, politicians and the public, the outer zone has long been neglected. The planning law implies that uses other than agriculture or forestry may be permitted as "exceptions". Under this set of regulations massive changes have taken place in the last few decades, as numerous large buildings were erected which spoil the traditional landscape. As they are scattered across the outer zone they have an even stronger impact on the landscape than if they had been built as part of an inner industrial zone, where they would have been grouped with similar buildings.

Yet farming itself is no longer what it was (Figure 2). For example, modern industrial farming – especially the mass production of meat and eggs - requires new buildings, which are not at all typical for rural areas, in the form of giant mills, silos and cold storage houses, and they have a high impact on the landscape because of their enormous heights and cubic capacities (Figure 3).

Figure 1
Principal scheme of zoning according to the German town-planning law



Source: FISCHER and BALZER 1991, modified

Figure 2
Large stable in Langförden (Vechta)

Photo: PEITHMANN 2004

Figure 3
Silos for cereals in Langförden

Photo: Peithmann 2004

With large stables there is not only the problem of the loss of the traditional characteristics of the landscape, but they also cause severe emission problems (Figure 4). The extent of the emissions restricts any further development of areas for housing and recreation in their vicinity.

Figure 4
Concentric zones of emissions from stables in the municipality of Garrel

Source: PEITHMANN /SCHAAL/MEINERS 2001

There are, however, important differences between the land uses/ structures listed in Tab. 1. These differences are shown in Table 2.

Table 2
Types of land use in the "outer zone" and their associated planning instruments

sort of landuse/plant	age of land use	public interest	spatial frequency	discussion/ analysis (of alternatives)	planning instrument	type of planning procedure (idea, interest)
power stations	old	very high	few	intensive (all possible sites)	sector planning by federal state, e.g. several planning levels	rare (e.g. "nasty") land uses with responsibility of federal state type **A**
power transmission lines	old		wide-spread			
incineration plants	new		few			
landfills	new		medium			
pleasure grounds	new	high	few	low (only with public investors)	spatial planning by the municipality (zoning plan and legally binding plan)	matters of municipality type **B**
leisure parks	new		few			
wastewater treatment plants	new		medium			
golf courses	new		few			
wind energy plants	recent		many			
solar energy fields	recent	low	growing to many	none (only on investor's own ground)	no public planning, subject of approval by federal state	matters of investors type **C**
quarries	old		many			
biogas plants	recent		many			
large greenhouses	new		many			
large stables	new		many			

Source: PEITHMANN 2008

What conclusions can be drawn from this table?

There is intensive planning for the nasty NIMBY-land uses (type 1) (NIMBY = Not In My Backyard). Their locations have to be chosen carefully so that they can be offered to the public minimizing political costs. Municipalities in general do not appreciate this type of land use. Therefore planning procedures are a state obligation.

There is a medium intensity of planning for the second type (2) as these land uses are in the interest of the municipality. They may cause discussion, but the benefits for the community as a whole can be explained. Waste water treatment for example is an undisputable need as long as it only refers to the treatment of the sewage of the inhabitants of the municipality itself.

The third type (3) of land use is crucial. Except for the quarries, it includes new and recent structures; and they are still spreading. These structures are generally erected by farmers who want them on their own land and therefore reject the discussion about alternative locations or an extended planning process, which could produce opportunities for their neighbours or restrictions for themselves. Even the Environmental Impact Assessment (EIA) does not require any consideration of alternative sites when the landowner as the investor does not want it (§ 6 (2) 5. UVPG).

If the land uses which are restricted to the outer zone do not remain exceptions but become mass phenomena, they can have a severely negative impact on the landscape. Hence it must be considered a great disadvantage that the elements of land use type 3 do not have to undergo the process of positive planning, above all planning that considers the whole community and looks for the most appropriate sites among alternatives.

There is one exception: wind energy plants were initially part of this third type of plants. But meanwhile they have become the subject of positive planning – and therefore are listed as type 2. There is one reason why wind energy plants have been restricted to a small area in nearly every municipality: Wind energy plants are mostly financed by companies whose shareholders live elsewhere. As the companies are usually not local, their activities can be restricted - with clear support from the community.

Most of the other land uses mentioned are, or will become, part of the enterprise of the respective owner of the land. They are fellow villagers and – as landowners – influential, as landowners are well represented in municipal councils. That is why they are privileged and can realize their projects without being required to consider alternative sites.

The current practice of exceptions undermines the intention of Strategic Environmental Assessment, which is to minimize the negative impacts of proposed projects by analyzing their effects within the whole range of land uses. The differentiation into an "inner" and "outer zone" may therefore be not in line with European law.

4 Need for consistent planning of the outer zone

There are two main spatial impacts of the uses in the outer zone:

- the impact on the natural scenery, and
- the emissions/immissions (e.g. caused by livestock).

The traditional landscape and the need for its preservation have been the subject of numerous academic publications (WÖBSE 2000 and JOB et al. 1999). *Kulturlandschaftspflege* – the preservation of this traditional landscape – is a goal of the German laws for spatial planning (*Raumordnungsgesetz* and *Baugesetzbuch*) (STIENS et al. 1999). It is also an important aim of Environmental Impact Assessment (EIA) and – a

German speciality of environmental protection – part of the so-called *Eingriffsregelung* (compensation rule) according to the "Federal Nature Conservation Act". Besides, the need to preserve traditional landscapes has been reinforced through the debates on sustainable development and land consumption.

The necessity to drastically reduce the emissions from stables and the amount of liquid manure spread per hectare in order to protect groundwater quality has become an important argument for controlling the spatial distribution of stables and the stocking density of animals in general. As the local councils have not been willing to apply positive planning procedures including restrictions (PEITHMANN 2000), there have been attempts to set up regulations at the level of regional planning. In Lower Saxony research has been undertaken to develop specific planning instruments at regional and local levels (PEITHMANN et al. 2001 and 2003). But so far, this has not yet led to compulsory planning obligations for regions and municipalities. It is still up to them to choose between positive planning and an uncoordinated "muddling through" (BRAYBROOKE and LINDBLOM 1972). Only a few of the municipalities (but none of the regions) in Lower-Saxony have already decided to use these planning instruments in the case of stables. Neither have installations to produce green energy (biogas and solar energy plants), which are currently spreading across the landscape, become the subject of positive planning. They are usually built and operated by farmers on their own land. The planning authorities do not dare to set up restrictions, as green energy should be supported wherever possible and farmers should be given every opportunity to increase their income.

5 Summary

This chapter has explained some phenomena of rural land use change and the associated planning problems on the basis of a classification of land uses in the outer zones of municipalities. It has shown that the outer zone is no longer a place for rare land uses as "exceptions". On the contrary, it is a zone of intensive change and growing pressures and should therefore be developed by the same planning standards as the inner zone.

The awareness of the scarceness of traditional landscapes has grown in recent decades, while at the same time the possibilities to show the impact of new buildings on the landscape and to analyze and calculate emissions have grown through the use of new techniques such as GIS and CAD. Municipal and regional councils should therefore be forced to develop positive responsibility for any land use in the outer zone and to start a broad public debate on the future of the landscape they are responsible for.

This is crucial as globalization has a strong impact on the land uses discussed here.

- The **scarcity of non-renewable energy sources** stimulates the construction of solar, wind energy as well as biogas production plants.

This in turn increases the pressure to change land uses in the outer zone;

- **GATT** and **WTO** have forced the European Union to open its markets. The resulting competition and fall in prices for agricultural products have pushed farmers to build large units for the production of pigs, cattle, poultry and eggs, so that they can be run by a minimum of personnel. The traditional barns and stables, which normally enhance the landscape, do not fulfil the needs of mass production any more. The costs of transport, which are still too low, allow the farmers to import feed from abroad and to export manure over long distances. This means that so far there are hardly any economic/natural restrictions on the spread of agricultural mass production.

- The **ongoing process of building** - whether it is houses, streets or railways – increases the pressure to open new quarries for gravel and sand, and this causes severe changes to the character of the traditional landscape.

To sum it up: there is an urgent need to give up the established dichotomy between inner and outer zones in the intensity of planning. The entire area of municipalities should be considered as a scarce resource and dealt with accordingly in a positive/"optimizing" planning process.

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Prospering Regions in Rural North Rhine-Westphalia: The Example of the Sauerland

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Abstract

Dynamic regions, both in economic and demographic perspectives, can be found in rural North Rhine-Westphalia (NRW). They play an important role in the overall development of the federal state and have significantly contributed to the economic growth of NRW in the past decades.

South Westphalia and especially the Sauerland are amongst the rural regions of NRW whose economic and demographic development has been considerably more positive than the state's average in recent years, as attested by various development indicators. Today the "industrial heart" of NRW beats in rural regions like the Sauerland. The successful indigenous regional development derives mainly from the innovative strength of locally embedded small and medium enterprises which have gained international attention in specialized fields, e.g. the automotive industry. For this reason, they have been termed "hidden champions".

This article focuses on the problems and potentials of the Sauerland, a prospering region in rural North Rhine-Westphalia, and assesses its regional strengths and weaknesses from an applied geographical perspective.

1 Introduction

When rural and peripheral regions are mentioned in Germany, they are usually associated with a state of underdevelopment and great structural weakness. Today, these general assessments belong to the past: rural spaces are heterogeneous. Under the influence of globalization, structural and demographic changes as well as economic processes, regions take part in the general economic development in different ways. The spatial structure does not predetermine economic power (GRABSKI-KIERON 2008: 37), growth and decline exist side by side – in urban as well as rural areas. Yet, while the structural problems in the Ruhr-Valley or the position of the metropolitan region Rhine-Ruhr in international competition often take centre stage in regional science and regional policy in North-Rhine Westphalia (NRW), the rural areas of NRW are much less prominent in public perception (cf. DANIELZYK and MIELKE 2006). This article argues that rural areas in NRW deserve more attention as they include prospering districts that are vital for regional economic development, such as the Sauerland.

Analysis of economic development in parts of NRW clearly shows the deconcentration of economic activities in recent decades. The trend is accompanied by suburbanization tendencies in regions bordering densely populated areas, but also counterurbanization in rural areas – linked to indigenous regional development. For decades, rural areas in NRW have benefited from their spatial proximity to densely populated areas in the most populous state of the Federal Republic of Germany. In recent years, the demographic and economic development in rural regions of NRW has been more positive than, for example, in the densely populated Ruhr-Valley. Dynamic and fast-growing regions, both in economic and demographical terms, can be found in rural NRW. They make an important contribution to the overall development of the federal state; without them the parameters of the economic success of NRW would be more negative (ibid.). Based on a regional analysis, this article demonstrates that the Sauerland – due to its structural strength and the technological innovation of its industry – belongs to a category of rural areas which have experienced dynamic development in recent decades well above the average for Germany.

In NRW, rural areas can be classified in different ways. The most common classification dates back to the North Rhine-Westphalia Regional Development Plan (LEP NRW) of 1995. This plan distinguishes metropolitan areas, suburban areas and solitary agglomerations from "areas with predominantly rural structure/rural zones" (ILS NRW 2006a: 6). The basic indicators for this classification are population density, size of the overall municipal areas, job density (measured by employees subject to social insurance contribution) as well as location. The Regional Development Plan identifies 74 % of municipalities in NRW (total number: 396) as "rural". These comprise a share of 74 % of the state's land area, where 34 % of its 18 million inhabitants live (Table 1).

Table 1
Classification of municipalities in the NRW Regional Development Plan 1995

Class	Description	No. of municipalities (abs.)	No. of municipalities (%)	Area (%)	Population (%)	Population density (inh./km²)
1	Metropolitan areas	27	7	26	66	> 2.000
2	Suburban areas	71	18			1.000<2.000
3	Solitary agglomerations	4	1			Not specified
4	Areas with predominantly rural structure/ rural zones	294	74	74	34	Ø 244
	Total	396	100	100	100	-

Source: LEP NRW 1995, ILS 2006b: 7

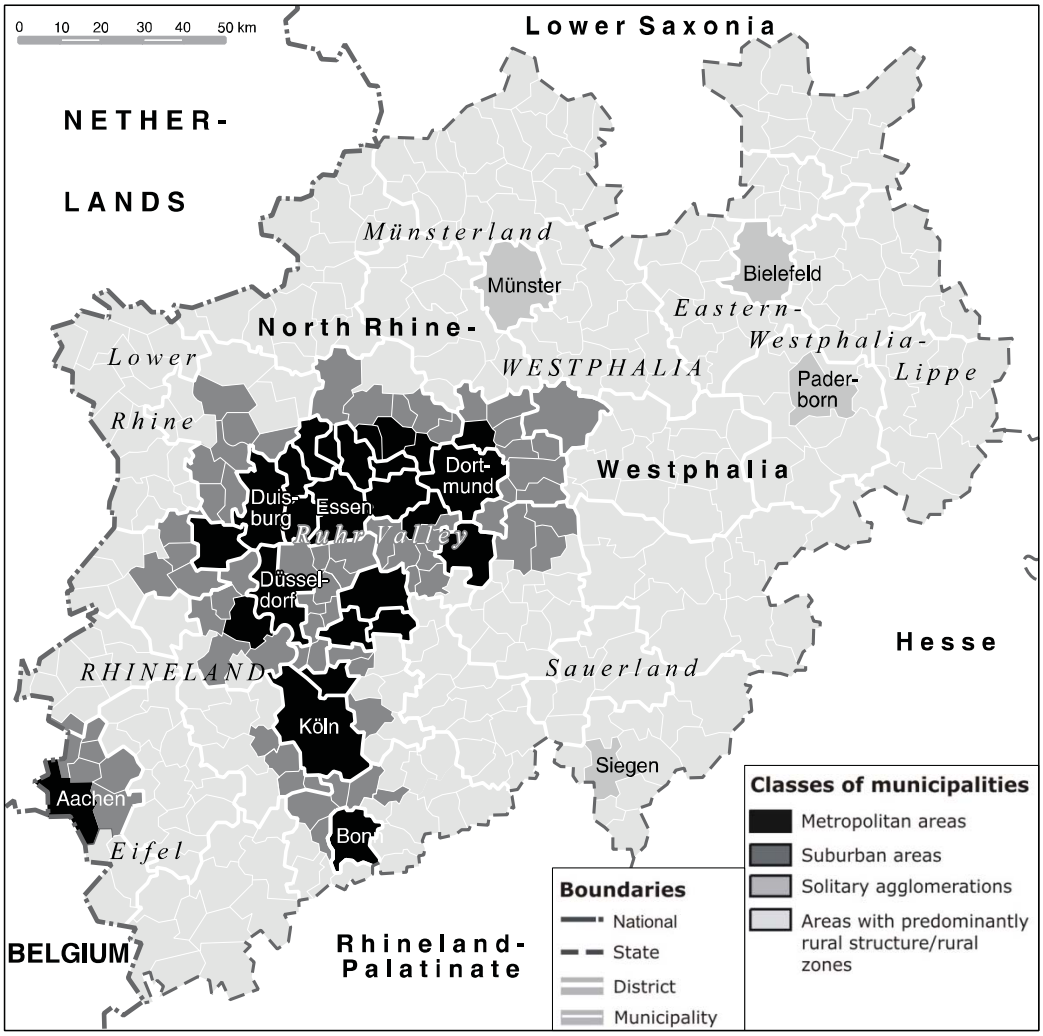
Figure 1 shows the geographical distribution of these classes. In the centre of NRW is the Ruhr Valley, also referred to as the Rhine-Ruhr metropolitan region. South of that, the Sauerland region consists of the *Kreise* (districts) Olpe, Hochsauerlandkreis, Märkischer Kreis as well as Siegen-Wittgenstein and the Siegerland. This region is usually also referred to as Sauerland-Siegerland. These four districts have a total population of 1.15 million inhabitants, comprising 6.4% of NRW's total population.

The Regional Development Programme (LEPro 1989) identified area-specific aims for the spatial development of the four distinct area types. For areas with predominantly rural structures the aims are:

- focus on settlement core areas (*Siedlungsschwerpunkte*) within municipalities,
- development adjusted to the specific responsibilities and needs of the area,
- upgraded infrastructural development,
- land use management adjusted to the needs of the area,
- improvement of agricultural and forestry production and business organization,
- tourism development,
- protection and development of natural resources (cf. ILS NRW 2006a: 5).

However specific arguments for the development of the industrial and service sectors in rural area are missing in the Regional Development Programme.

Figure 1
Types of municipalities in the Regional Development Plan (LEP) NRW 1995



In its 2005 Spatial Planning Report, the Federal Office for Building and Regional Planning (BBR 2005) issued a new spatial classification of Germany based on population density (*Bevölkerungsdichte*) and accessibility of central settlements (*Zentrenerreichbarkeit*). The plan distinguishes between three spatial categories ("central space", "inter-space" and "peripheral space") or six different structural types (Table 2). The expression "rural space" was consciously avoided and replaced by the two categories "inter-space" and "peripheral space". In this classification the "rural" area of NRW is much smaller than in the LEP (1995), with only 57% of municipalities in the categories of "inter-space" and "peripheral space". The percentage of municipalities classified in these two categories in NRW is also much lower than for Germany as a whole, with 43% of NRW municipalities categorized as "inter-space" compared with 58% in Germany and 14% "peripheral space" compared with 34% nationwide. By contrast, "central space" accounts for 43% of NRW municipalities, but only 8% nationwide (cf. ILS NRW 2006a: 14; BBR 2005). The small parts of NRW marked as "peripheral spaces" are located in the eastern parts of the Sauerland, East-Westphalia-Lippe and the Eifel-Region.

Table 2
Classification of NRW municipalities according to BBR 2005 structural types/spatial categories

Class	Description	Structural types in NRW		Spatial categories (%)	Structural types in Germany		Spatial types in Germany (%)
		(abs.)	(%)		(abs.)	(%)	
1	Inner central space	72	18,1	42,7	251	2	8,1
2	Outer central space	97	24,6		755	6,1	
3	Intermediate space with agglomeration tendencies	124	31,3	43,2	3129	25,3	57,9
4	Intermediate space with low densities	47	11,9		4039	32,6	
5	Peripheral space with agglomeration tendencies	45	11,4	14,1	1916	15,5	34
6	Peripheral space with low densities	11	2,7		2296	18,5	
	Total	396	100	100	12386	100	100

Source: BBR 2005, ILS 2006a: 14

From these classifications it can be concluded that rural space in NRW is far from heterogeneous. However, it has to be pointed out that the areas in NRW which are classified as "rural areas" or do not belong to the "central space"-category differ from their rural counterparts in other federal states with respect to population density, settlement structure and proximity to urban areas.

2 Development and structural change

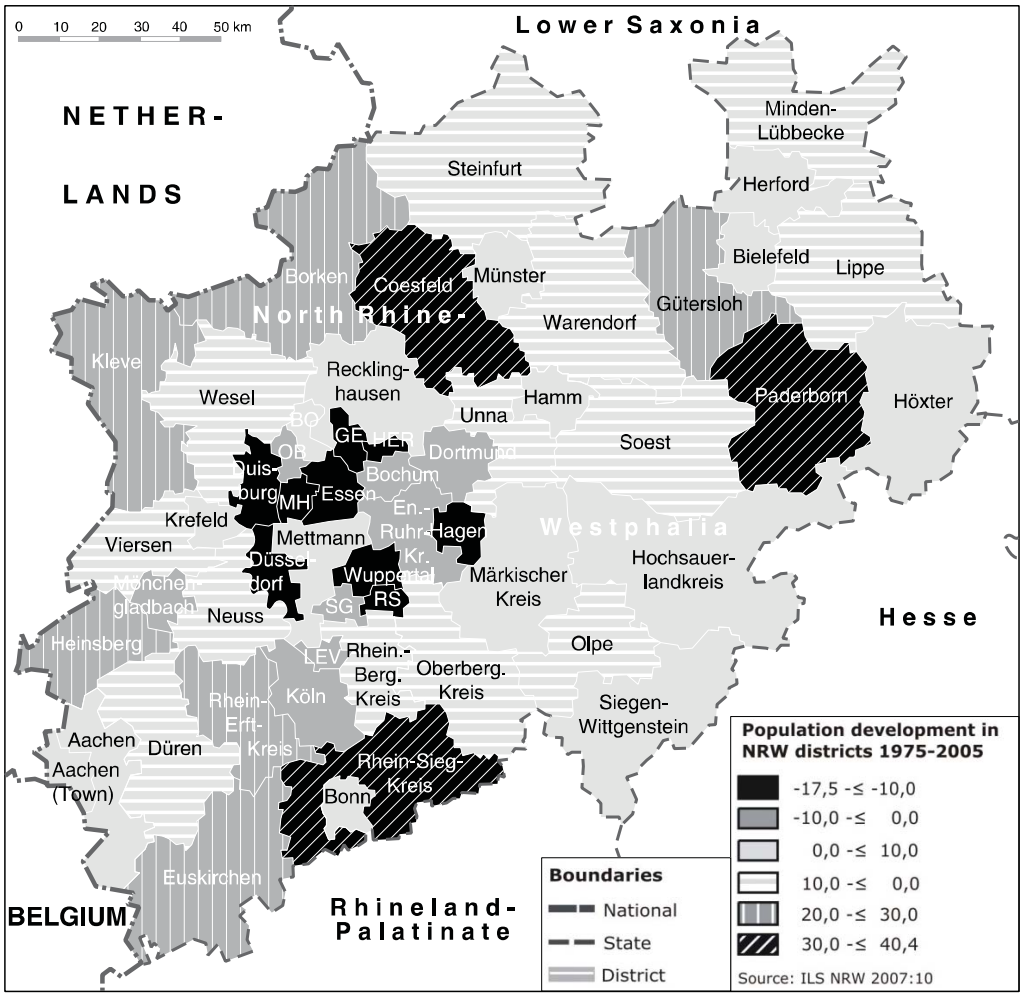
2.1 Demographics

Demographic change that is largely marked by population decline, an increasingly elderly population, and internationalization processes takes different forms in different parts of NRW. While the cities were the destination for migration from rural areas before and after the Second World War, since the 1960s high-density areas, especially the Ruhr-Valley, have experienced population losses. At the same time, rural areas have gained population.

Figure 2 shows the population development by district in NRW between 1975 and 2005. Here, the trend towards population decentralization is evident. Since 1975, the metropolitan areas and most of the solitary agglomerations in the Rhine-Ruhr region have experienced population losses, while the inter-spaces (i.e. mixed rural/urban areas) and rural spaces gained population.

Population gains are mainly due to in-migration, in some areas especially due to suburbanization (e.g. in the Münsterland north of the Ruhr Valley). Important pull factors attracting migrants have been low real estate prices, a good cultural, social and especially educational infrastructure as well as a neighbourhood perceived as pleasant and safe. Rural areas and especially small towns have been winners of the population growth, even more than medium-sized agglomerations. Small towns have profited from natural population increase as well as from migration (cf. ILS NRW 2005: 30).

Figure 2
Population development in NRW districts, 1975-2005



In the Münsterland and Sauerland, a high birth-rate has in the past also contributed to population growth. However, the population in some *Kreise* of the Sauerland grew less strongly between 1975 and 2005 than in other

rural areas in NRW (fig. 2), with the notable exception of the Kreis Olpe. In future, the natural population balance will be negative in almost all parts of NRW. Population growth will also slow down even in those regions of NRW which still record increasing population (cf. ILS NRW 2005: 37ff). However unlike in Eastern Germany, there will be no depopulating regions in the medium term in NRW, though the share of older people will increase due to rising life expectancy. In the second half of the 20th century, the share of people over 75 rose from 2.5 % to 7.5 % (cf. ILS NRW 2005: 32). Exceedingly high proportions of elderly can be found in the Northeast of the state as well as in the Ruhr-Valley where this is due to the continuing structural crisis and the related out-migration of young labour. As a result of the current age structure, the ageing process will continue in the coming years. However, the share of senior citizens will increase quite differently in different regions. The largest growth can be expected in regions with hitherto lower shares of elderly (e.g. Münsterland, hinterland of Cologne and Düsseldorf, increase 2002–2020 by up to 85 per cent; cf. ILS NRW 2005: 37). In the Sauerland, increases of the 75+ generation of between 36 and 70 per cent can be anticipated. The total population, however, is forecast to decline in the Sauerland by around 9 per cent until 2025 (Kreis Olpe: -2.8 per cent, Hochsauerlandkreis: -12.8 per cent; NRW: -2.0 per cent). This decline will be caused in equal terms by negative natural population development as well as by migration losses (cf. LDS NRW 2008). In contrast, for the whole state of NRW, population gains of up to 3.4 per cent are anticipated until 2025 because of in-migration.

2.2 Economic trends

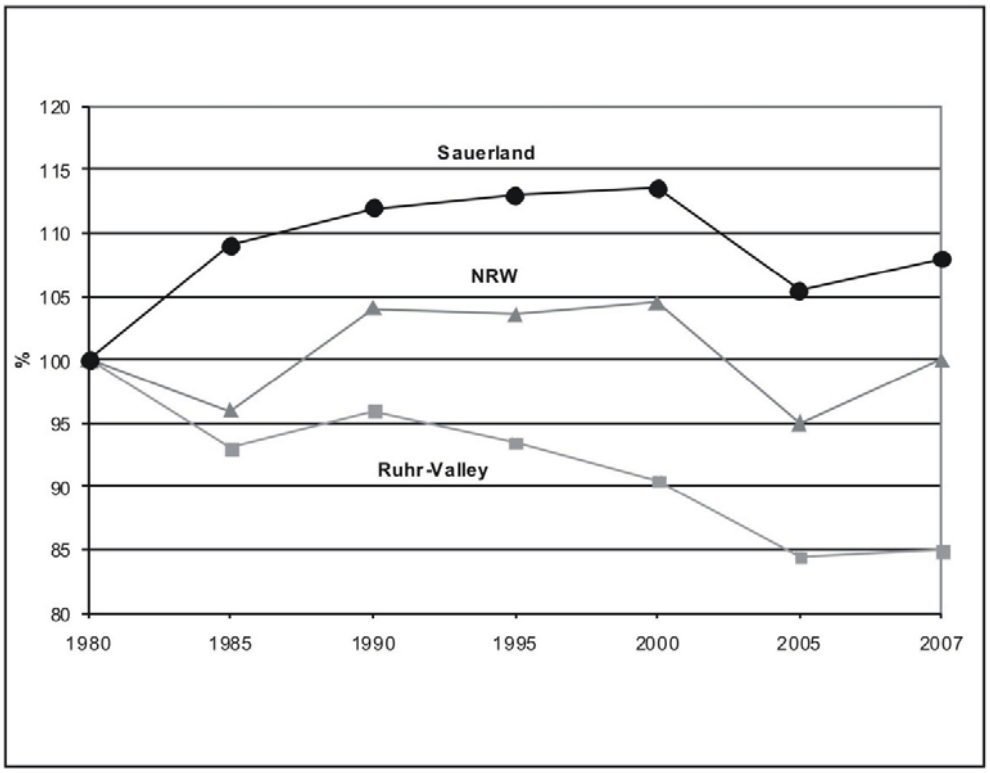
2.2.1 Labour market

In the past decades, suburban and rural areas in NRW have benefited from an economic deconcentration process. In all rural areas, the development of *sozialpflichtige Arbeitnehmer* (i.e. the number of employees subject to social insurance contribution; an important indicator for non-self-employed labour) was clearly above state average from the early 1970s to the end of the 1990s. During this period, the number of employees in the rural *Kreise* even increased notably. In the first decade of the new century however, this development has slowed down. While the employment situation in cities like Cologne, Aachen and Münster has improved, many of the *Kreise* in rural areas – including the Sauerland – have lost jobs. However, it is not clear whether this is a fundamental reversal in trend, or simply a temporary deviation, so further research is required.

Figure 3 shows the change in the number of employees from 1980 to 2007. The development in the Sauerland (here supplemented by the northern Kreis Soest) was more positive than in both NRW in general and the structurally weak Ruhr Valley (= Area of the Regional Association of the Ruhr Valley or RVR). By 2007, the number of employees subject to social insurance contribution in NRW as a whole was on the same level as 1980; it

had fallen by 15 % in the Ruhr Valley, but increased by 8 % in the Sauerland over the same time period.

Figure 3
Percentage change of employees subject to social insurance contribution, 1980 – 2007 [1980 = 100]



Source: LDS NRW 2007, DROEGE 2008: 4

The positive economic development also had an impact on the labour market. With an unemployment rate of 9 % in 2008, NRW was notably below the national average, in all its *Kreise*. However, spatial disparities have become more prominent during recent decades. Rates are above average in larger cities. The Ruhr Valley, a region with serious economic problems, had an unemployment rate of nearly 12 %, some cities there almost 18 %. Rates are lowest in rural areas, especially in the Münsterland and in the Sauerland districts. As a consequence of the current world economic crisis, the unemployment rate in the Sauerland has increased by 30 % within one year. However with a rate of 6.6 %, it is still one of the lowest in NRW and Germany. One reason for the comparatively positive employment situation in the rural *Kreise* is the commuting balance (in- and out-flow of commuters) which has improved in recent decades.

2.2.2 Agricultural sector

In spite of the continuing structural and functional changes in the agricultural sector, farming is still a significant segment of the labour market in numerous rural areas in Germany, especially if agro-businesses and other businesses related to this sector are included (GRABSKI-KIERON 2008: 40). Agriculture also contributes to the economic development of

NRW, but agricultural employment is low. Only 1.5 % of the labour force works in agriculture, and the agricultural sector has a share of only 4 % in the Münsterland and 2 % in Eastern Westphalia-Lippe.

The importance of agriculture in the Sauerland today is even lower: Agricultural employment is marginal at only about 1 %, significantly down from 2.3% in 1994. The number of farms has also declined dramatically. From 1970 to 2006 they decreased from 16,700 to only 5,100, a total reduction of 70 per cent. At the same time, the average farm size increased notably: in 1970 66 % of farms were smaller than 10 ha, today less than 50 %. Conversely, the share of farms with more than 50 ha has increased to 13 %. More than 66 % of the farms are operated part-time (cf. LDS NRW 2008). Nonetheless, agricultural land has decreased considerably (minus 30 per cent between 1975 and 2003, cf. ILS NRW 2006a: 12).

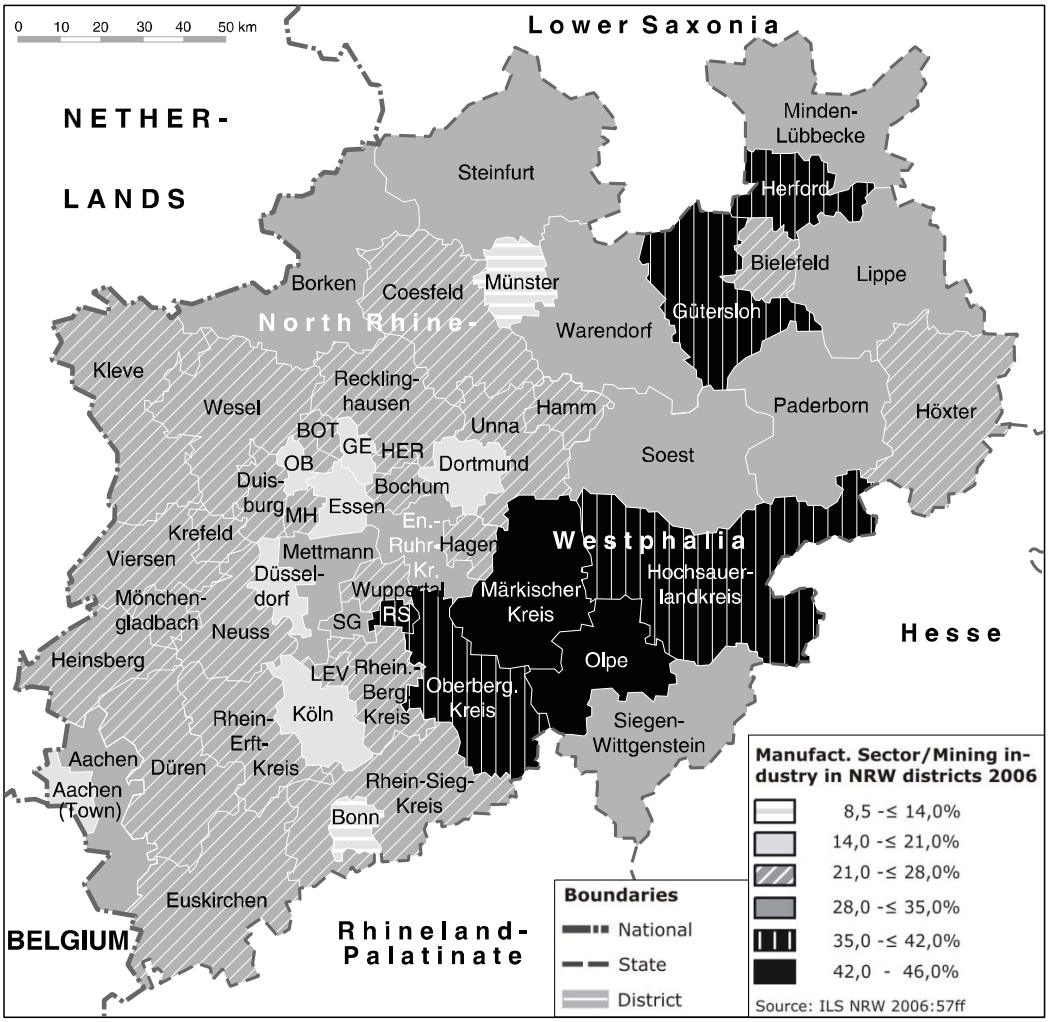
As the Sauerland is part of a low mountain range, it has to cope with – compared with other rural areas in northern Germany – inferior natural conditions for agriculture. Relief and topography hinder the use of large machines and restrict the size of fields. Due to the hilly nature of the terrain with altitudes up to 500 m above sea level, the region is also climatologically disadvantaged because vegetation periods are shorter. Moreover, the soil quality is often low so that grassland and livestock farming traditionally prevail. Forestry often provides a crucial additional income.

The timber and forest sector, which in the Sauerland as well as in NRW as a whole, is mostly formed by medium-sized enterprises, has been subject to structural change for several years. More than 50 % of the total area in the Sauerland is covered by forest, the highest share in NRW. Almost 50 % of this forest is privately owned. Currently the Sauerland benefits from the growing importance of renewable resources; this is reflected in the successful establishment of an economic timber cluster in the region. A study of the "International Institute for Forest and Timber NRW" at the University of Münster has documented the high economic and labour market relevance of this often underrated cluster (cf. MROSEK et al. 2005).

2.2.3 Mining and manufacturing industry

The importance of the industrial sector differs greatly in the various regions of NRW. It has declined in the context of economic and structural change in the past three decades, especially in the Ruhr Valley. The "industrial heart" of Westphalia does no longer beat in the Ruhr Valley but in the Sauerland and Siegerland, in some parts of Eastern Westphalia-Lippe (OWL) and in the Münsterland (DANIELZYK and MIELKE 2006: 58). In the Ruhr Valley the share of jobs in the mining and manufacturing sectors has declined from 58 % in 1970 to 27 % today, in cities like Dortmund and Essen to even less than 15 %. In the east and southeast of NRW the percentage is significantly higher, and highest in the western Sauerland (esp. Kreis Olpe and Märkischer Kreis, cf. Figure 4) where more than 40 % of the labourforce work in the extraction or manufacturing industries.

Figure 4
Importance the manufacturing and mining industries in the *Kreise* of NRW in 2006



With good accessibility, sufficient land availability and low land prices as well as a highly qualified workforce, these locations offer excellent economic opportunities particularly for manufacturing. Most of the companies are small and medium-sized but they include global market leaders in their segment (e.g. in the plumbing and pipe fitting industry or the automotive industry). Leading economic researchers are talking about "hidden champions" in this context (DANIELZYK and MIELKE 2006: 59). With 85 % of enterprises having fewer than 200 employees, the indigenous power – especially of the Sauerland – is rooted in the owner- and family-run small and medium-sized enterprises which are based locally but linked globally. These SMEs are an important contribution to regional development as they are highly flexible and locally well embedded (BEETZ 2005: 55) but globally competitive. A number of companies also run production plants in Southern and Eastern Europe. The headquarters, however, remain in the region due to the availability of skilled labour and due to local rootedness of the entrepreneurs, which is manifested by their social commitment within the region. This helps to minimize migration. Know-how and innovation in a dynamic and high-performance regional milieu as well as a liveable and

intact environment with a high recreational value, all belong to a suite of crucial "soft location" factors (cf. WEBER and KRAJEWSKI 1998 and 1999).

Industry in the Sauerland in general is diversified and of high quality, as can be illustrated by the high number of patents applications. In NRW these applications which can be used as an indicator for innovation of the regional economy are particularly frequent in the city of Aachen, the hinterland of Düsseldorf and in the Kreis Olpe in the Sauerland (with more than 100 patents per 100.000 inhabitants). However, this should not hide the fact that NRW has dramatically fallen behind other federal states in technological innovation (especially Bavaria and Baden-Wurttemberg) during the past ten years (cf. BLOTEVOGEL 2007: 66).

2.2.4 The automotive supply industry as a key sector

The economic strength of the Sauerland-Siegerland region is based on the predominance of small and medium-sized enterprises in distinctive core industries such as the highly productive and internationally oriented metal processing and engineering industry. Dynamic up- and downstream production-oriented service providers have developed around this industrial focus. This sector constitutes a central component of the automotive cluster in South Westphalia, which comprises companies of the electrical and chemical, plastics processing as well as the textile industry. With about 470 enterprises, the automotive sector is a key industry in South Westphalia. A survey conducted by the Chamber of Commerce and Industry South-Westphalia[1] revealed that one out of six industrial jobs and one of eight companies are in the automotive and railway supply industry, the aerospace industry and ship building (cf. SÜDWESTFÄLISCHE INDUSTRIE- UND HANDELSKAMMERN ARNSBERG, HAGEN, SIEGEN 2005: 1ff.). Geographically, 43 % of these enterprises are located in the Märkischer Kreis.

Table 3
Enterprises, turnover and number of employees in the automotive industry in South Westphalia

Region	Number of enterprises	Turnover in m EUR	Number of employees
Kreis Olpe	57	694	3,900
Kreis Siegen-Wittgenstein	58	468	2,000
Hochsauerlandkreis	42	892	4,400
Märkischer Kreis	214	2,312	8,850
Sauerland-Siegerland	*371*	*4,366*	*19,150*
Kreis Soest	61	2,212	9,700
City Hagen	35	383	1,800
South Westphalia	*467*	*6,961*	*30,650*
NRW	800	28,000	150,000
Germany	2,500	65,400	360,000

Source: SÜDWESTFÄLISCHE INDUSTRIE- UND HANDELSKAMMERN ARNSBERG, HAGEN, SIEGEN 2005: 4

According to the enterprises included in this 2005 survey, about 31,000 workers were employed in the South Westphalian automotive industry. This represented 15 % of regional industrial employees and about 20 % of the total number of employees in the automobile and automotive supply industry in NRW. With a turnover of € 7 billion, this industry had a share of 17 % of the total industrial turnover in South Westphalia. South Westphalia is not only one of the main locations of the automotive supply industry in North Rhine-Westphalia; with 9% of the nationwide labour force in this industry, but it also has an impact beyond NRW.

The relevance of the automotive supply industry for the regional economy has not declined during recent years of structural change. However, as a consequence of globalization large automotive manufacturers are pressurizing suppliers more and more. Price and cost pressures have increased and suppliers are forced to optimize production processes. This development is likely to continue for a fairly long time because the large automotive suppliers are striving to reduce in-house production depth in their final assembly lines and to outsource more work to subcontractors. An ever wider product programme and shortened process cycles make great demands on the innovative capability of the entire value chain (ibid. 2005: 1). The diversification into other areas of vehicle manufacturing can be regarded as a possible adaptation strategy. The businesses have to face worldwide economic changes necessitating increased innovation, qualification and cooperation. To safeguard their competitiveness and the continuing supply of skilled labour, political and administrative support is essential, but so is the intensification of cooperation between schools, job-training institutions and universities.

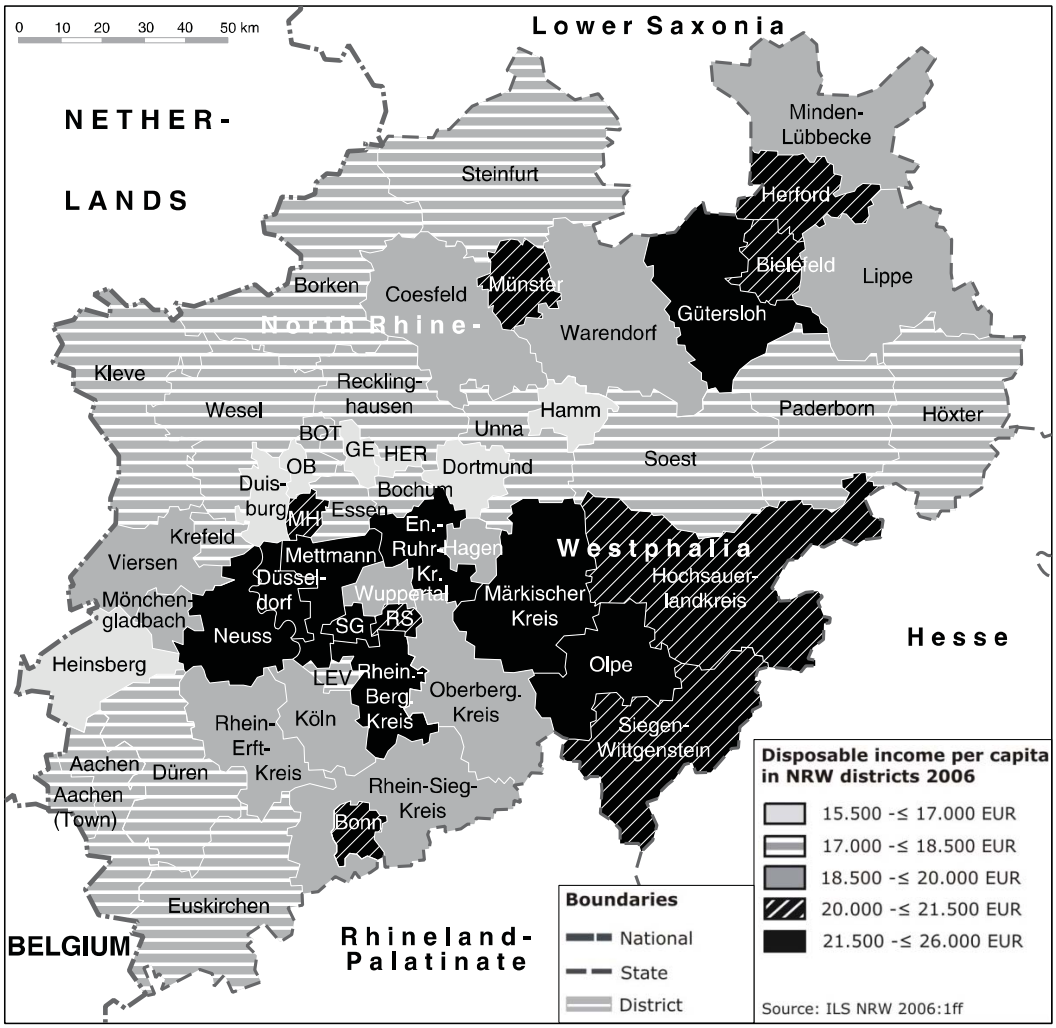
As regional suppliers increasingly function as development partners for the automobile producers, research and development activities as well as the transfer of know-how have to be intensified in the supply industry as well. This is very important; the study by the Chamber of Commerce and Industry South-Westphalia has shown that – compared with other sectors – automotive suppliers do not spend sufficiently on research and development activities (ibid. 10). Small companies, in particular, have begun to step up their cooperation with universities and know-how transfer facilities, especially with the University of Siegen and the Technical College of South Westphalia, with their specialist engineering and training courses. Furthermore the number of engineers and other academics in the region should increase in the medium term.

However, the region has been hit hard by the 2008–2009 worldwide financial and economic crisis, because of its high dependency on exports and the automotive supply industry. Automotive-supply businesses are especially affected by the current sales problem of automotive products. Their reaction has been to lay off contract workers, reduce the so-called "working time accounts" and use short-time work as an instrument to combat the crisis. Although politicians and enterprises are hoping for a prompt amelioration of the economic situation, a continuing increase in unemployment and firm-specific problems will prevail until then.

2.2.5 Disposable income per capita

In 2006 residents of North Rhine-Westphalia had an average disposable income per capita of € 19,000 per year (see Figure 5). NRW runs second after Baden-Württemberg in this respect, clearly above the federal average of about € 18,000. However, incomes vary widely in the different parts of NRW. Differences can already be found on a regional scale: regions with very high income are, for example, the area of Düsseldorf/Middle Lower Rhine with up to € 22,000 per capita, as well as in the Sauerland, while in the Northern Ruhr-Valley the disposable income per capita is below € 16,000 (e.g. in Duisburg, Gelsenkirchen and Hamm). With up to € 26,000 Kreis Olpe in the Sauerland has the highest disposable income per capita in NRW. And going below the regional level, the two towns with the highest discretionary income per capita in NRW (Attendorn with € 48,000 and Schalksmühle with € 40,000) both lie in the Sauerland. The high income per capita among the population is closely connected to the thus far strong industrial backbone of the Sauerland.

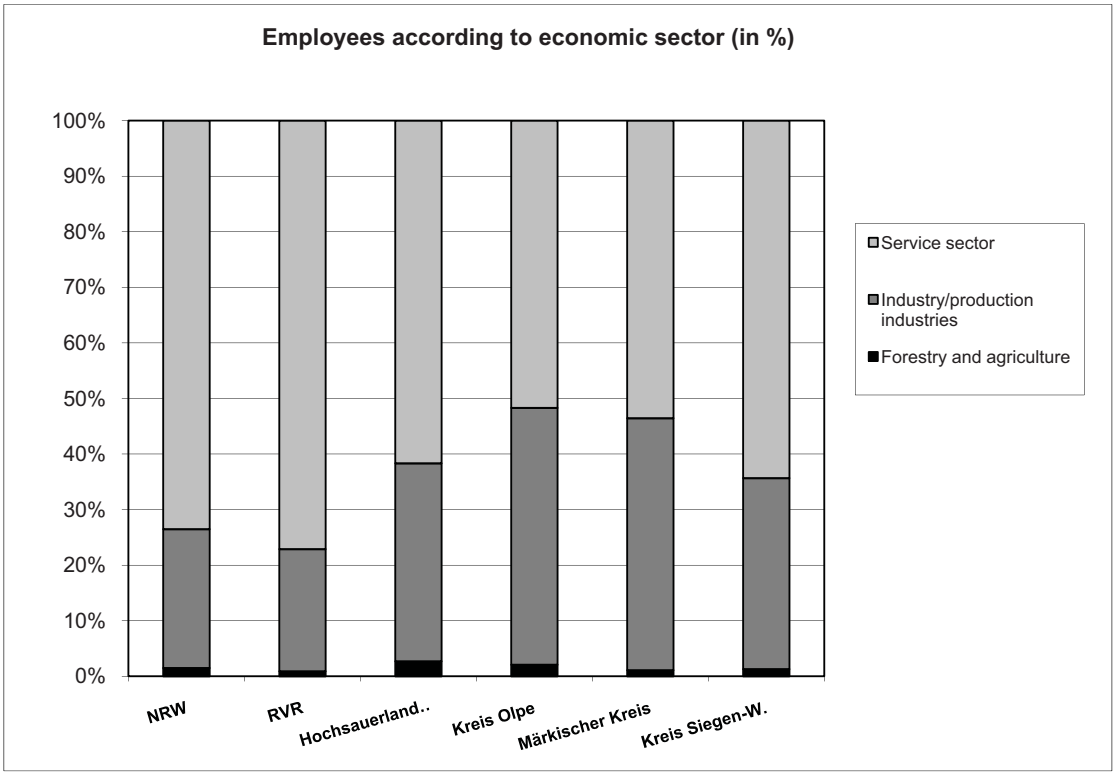
Figure 5
Disposable income per capita in the *Kreise* and independent cities of North Rhine-Westphalia 2006



2.2.6 Service sector and tourism

As argued above, industrial employment in the Sauerland *Kreise* is significantly higher than the average in NRW and the Ruhr Valley (or RVR). By contrast, the share of employees in the service sector is below average (cf. Figure 6). Whereas nationwide more than 70 % of employees work in the service sector – which is comprised of retailing, hotel and catering services, transport, credit and insurance, education facilities, health care, judiciary and administration as well as other personal high-quality services - the share in the Sauerland *Kreise* only ranges between 50 % and 65 %. It can therefore be concluded that the service economy in this rural region could still be expanded.

Figure 6
Employees by economic sector 2005



Source: ILS NRW 2/2006: 23

In recent years, the retail industry had to undergo substantial structural changes, which also left their mark on middle- and low- order central places in the rural areas of NRW. The reasons for this development are complex and have their origins both in the supply side (e.g. expansion of sales area, change of retail formats, concentration of enterprises, rise of multiples and internationalization) and the demand side (rise of convenience products, increasing spatial flexibility and mobility of customers). In the process, a reorientation of shoppers towards higher-order centres can be observed, because these often offer a broader range, a supposedly more appealing atmosphere and an enhanced shopping experience. Customers often prefer multifunctional shopping malls or inner city arcades to the retail choices of low- or middle-order central places which they often perceive as mediocre.

In this competitive situation, it is especially hard to create or maintain an appealing retail structure in rural regions which ensures an adequate supply and at the same time is attractive enough to bind customers and their purchasing power. For a lasting successful implementation of retail planning strategies in rural areas, it is, therefore, essential to contain not only the structural changes in retailing but also to take into account the consequences of demographic ageing and migration processes. What this means in practice is that it is of utmost importance to create and sustain retail structures which guarantee sufficient supply and are, at the same time, sufficiently competitive (KRAJEWSKI and SCHULTE 2008).

High quality of life in rural areas can also be regarded as a soft location factor as well as a competitive advantage. And the Sauerland is both attractive for inhabitants and tourists. The low mountain ranges and the well-wooded landscape have attracted visitors since the beginning of the 20th century. In the last few decades, the tourist infrastructure of the Sauerland has been upgraded (improved connection to national motorways, construction of water reservoirs like the Bigge-Dam, creation of new hotel capacities). This has led to a noticeable increase in the number of over-night stays since the 1970s as well as created new income alternatives, also for agricultural enterprises. While earlier on Bed & Breakfasts and guesthouses had been operated to generate extra income, some farmers have converted their buildings into hotels and fully concentrated on tourism. With almost six million over-night stays, the Sauerland is one of the eleven top travel destinations in NRW and – following the Teutoburger Wald – the one with the highest number of overnight stays. Yet, day tourism is economically even more important than overnight tourism. A study by "Sauerland-Tourismus e.V." has shown that all forms of tourism generate some two billion Euros per year in the travel region; more than 70 % are earned from day visitors, only about a quarter is spent by over-night visitors on commercial accommodation (KRAJEWSKI 2007).

Current trends in the Sauerland include a growing emphasis on congress and conference tourism, health tourism as well as sports activities, especially golf and hiking tourism. The Sauerland Tourism Organization has defined travel themes for different target groups such as *Natur & Aktiv* (easy activities), *Natur & Sport* (more demanding activities for the younger target groups) and *Familien* (for families with children) and has initiated key projects, e.g. new, nationally advertised hiking trails (such as the "Rothaarsteig"), the so-called "Bike Arena" (a network of bike trails) and the "Wintersport Arena Sauerland" (a network of winter sports facilities). A master plan "Lakes in the Sauerland" aims to raise the profile of water reservoirs.

With a focus on specific target groups and themes as well as the promotion of flagship projects, Sauerland Tourism Organization hopes to consolidate the market position of the area and to attract new customers to the destination. To what extent these strategies will be successful under increasingly competitive conditions needs to be carefully monitored.

3 Recommendations for sustainable future development

Due to the increased competition for businesses to locate in an area and the connected neo-liberal discourse, rankings of cities and regions have gained importance. One of them is the regional ranking of the Initiative for a New Social Market Economy (*Initiative Neue Soziale Marktwirtschaft* or INSM), which is funded by employers and based on a solid database and methodology. In 2009, the initiative compared the economic and welfare levels in 409 districts and cities nationwide, based on 21 economic and structural criteria (e.g. purchasing power, employment rate, demographic indices, gross domestic product per gainfully employed person, highly qualified manpower and percentage of pre-school children in day-care facilities) (cf. www.insm-regionalranking.de). Whereas the Bavarian capital Munich and its surrounding *Kreise* were top-ranking, the Sauerland Kreis Olpe was ranked at place 44 - as the best NRW district, even ahead of the capital Düsseldorf (rank 73). The ranking of the other Sauerland districts of Siegen-Wittgenstein, Märkischer Kreis and Hochsauerlandkreis (142, 147 and 162 respectively) was also very satisfactory, so as a whole the Sauerland is the best-ranked rural region in NRW[2].

The strengths of the region are high employment and a low unemployment rate, high municipal tax revenues as well as a solid economic performance (high GDP per inhabitant). The weaknesses of the Sauerland region are a low level of provision for child care facilities, a low share of university graduates, a lack of apprenticeships and, in some municipalities, a high debt burden.

When considering the future development of the Sauerland, the strengths and successes should not hide the weaknesses and challenges ahead. In the next ten years, the population in rural areas in East Westphalia and in most of the districts of the Sauerland will decrease due to declining birth rates. The shortage of skilled workers and especially of engineers is quite apparent today.

Against the background of demographic change and the rising competition between regions for investors, businesses and qualified staff in the context of globalization, a number of points of action can be defined:

1) Strengthen the quality of life in rural areas
2) Reduce land consumption
3) Create a flexible (social and educational) infrastructure and strengthen family-friendliness
4) Intensify inter-municipal cooperation
5) Strengthen the indigenous economic potential

1) Quality of Life in Rural Areas: The supreme goal is to conserve and strengthen rural areas as places attractive for residents, enterprises and tourists alike. In a more globalized, fragmented and unstable world, life in rural areas offers transparent and "manageable" structures, safety and peace. In a society of different lifestyles where individuality and

isolation are on the increase in rural areas, village life still offers company, a sense of community, a socially integrated life and a local/regional identity. In the light of growing ecological problems, rural areas still offer a largely "intact environment" and the opportunity to live in an attractive landscape with a high recreational value. Due to lower prices for development land and a better land supply, the dream of a home of one's own is easier to put into practice in rural than in urban areas.

2) Land Consumption: Undeveloped land is a limited resource, while beautiful landscapes and open spaces are the strengths of rural areas. Yet over the years quantitative and qualitative demand for land has increased in Germany's rural areas, also in NRW. Land consumption is still high, even though the spatial development guidelines favour re-utilization and re-development of land. So, daily some 16 ha of land are lost in NRW (GRABSKI-KIERON et al. 2009: 7). Human land use and fragmentation reduce habitats for plants and animals as well as recreational landscapes for people. An economic land use, which is compatible with social and natural demands, is therefore a key requirement. The policy of favouring inner-city development over urban edge development should be followed more strictly. To use land sustainably strategic land management approaches are needed; this includes the monitoring of municipal land and open space (ibid.: 8) as well as inter-municipal cooperation and comprehensive land policies.

3) Flexible Infrastructure: Against the background of a declining and ageing population, rural areas in NRW will face the problem of how to safeguard public services. The constitutional and spatial planning goal of developing equivalent living conditions in all parts of the country calls for the definition and discussion of what stable and sustainable public facilities mean. To provide a shrinking and ageing population with infrastructure and services (e.g. with educational and health care facilities, social welfare services, consumer goods, transport and technical infrastructure such as waste management), innovate and flexible models are required. Possible solutions include multifunctional institutions, flexible multi-use facilities or temporary/mobile facilities, the promotion of and support self-help initiatives, the increased involvement of civic target groups (e.g. in the case of car-share communities, neighbourhood stores and clubs), and an improved general inter-municipal cooperation. Frequently used approaches include centralization, decentralization and down-sizing of infrastructure and services – also of educational, health and social institutions – as well as the improvement of accessibility through better transport connections (cf. e.g. KOCKS 2007). Moreover, taking demographic change seriously also means converting family policy into a population policy to which all groups in society can contribute. Support for families is a key element of an anticipatory municipal policy and, at the same time, a soft location advantage in regional competition. Family-friendly regions will be economically successful in the long run because both a qualified

workforce and consumers value this style of supply-oriented quality of life.

4) Inter-municipal cooperation: As general public services have to be maintained even though treasury coffers are empty, an intensification of inter-municipal cooperation is vital. Potential fields of action in the economic sphere include common structural development projects and reciprocal economic support, land use management and location planning, regional and tourism marketing, and improvement of local and regional public transport. In the field of culture and social development, cooperation in healthcare, schools, training facilities, social and youth care, and cultural support, has to be intensified. Ecological demands affect areas such as settlement planning, the careful use of natural resources and open spaces, as well as regional ecological accountability and compensation.

5) Indigenous economic potential: The economic strength of rural regions like the Sauerland is tightly linked to the economic success of locally-bound small and medium-sized enterprises. Up-to-date access to knowledge, qualifications and innovation is vital for the sustainability of businesses in rural areas. Human capital and knowledge form an important advantage for growth and development in the context of demographic, social and economic change: knowledge, skills and innovation are central economic and location factors which strongly determine the competitiveness of businesses, municipalities and regions. Strengthening the indigenous economic potential means providing for the future. This includes: strengthening medium-sized manufacturing industry, crafts and trade, agriculture, tourism and services; active business development; creating stable investor links; securing modern and innovative economic structures; providing a competitive infrastructure (e.g. closing the broadband gap); raising economic performance in an environmentally and socially sustainable way, and finally a continuous upgrading of educational and skills levels. This also implies sustaining a varied educational infrastructure in rural areas as well as an improved cooperation with universities (cf. GRABSKI-KIERON et al. 2009: 3f) to secure continuing prosperity. Keeping a skilled workforce in the region and giving students a possibility of finding regional jobs after their graduation should also be part of such initiatives.

4 Conclusions

This paper has used the Sauerland as an example to emphasize that rural areas in North-Rhine-Westphalia, as well as in Germany as a whole, are very heterogeneous and undergo different economic and demographic development processes, not necessarily following the "rural cliché".

In recent decades, the demographic and economic development in most rural regions of NRW has been more positive than in some urban areas, especially in the very densely populated Ruhr Valley. On the one hand rural

regions have taken advantage of their spatial proximity to these densely populated areas in the most populous state of the Federal Republic of Germany, but on the other hand they have developed successfully due to their indigenous economic and innovative potential. Rural regions have made an important contribution to the overall development of the federal state; without them economic development in NRW would have been much less favourable.

The Sauerland is one of those rural areas where a very dynamic development, well above the average of the federal state, has taken place in recent decades. The economic strength of the Sauerland is mainly based on its medium-sized highly productive and internationally orientated enterprises in metal processing and manufacturing systems engineering. A dynamic sector of up- and downstream production-oriented service providers has developed around this industrial focus. However the service sector is generally underrepresented when measured against the federal average.

It has been shown that this dynamic development has resulted in high employment and low unemployment rates as well as in increased prosperity levels of the population, which are well above the federal average. All of these factors have led to a good performance of all Sauerland districts in recent regional rankings. Overall, the Sauerland is a good example of a prospering region in rural North Rhine-Westphalia.

This should not hide the fact that the competition for inhabitants, skilled and young people and businesses will become tougher for the Sauerland in future, too. An active shaping of demographic and economic changes is necessary, so are the preservation of the attractive natural and social environment as well as the maintenance of a good infrastructure.

On the one hand, the current development shows that rural areas like the Sauerland are able to hold their ground, provided that they make best use of their specific endogenous economic potential as well as their innovative capabilities. On the other hand, it is evident that prospering regions embedded in the global economy also have to cope with the current economic crisis. Success will depend on the ability of a region to face the crisis in the most creative and most innovative way possible in order to remain prosperous in the future.

Footnotes

[1] South Westphalia comprises the districts of the Sauerland, the city of Hagen in the northwest of the region as well as Kreis Soest in the north.

[2] In a study by the Prognos Institute prepared on behalf of the Federal Ministry of Family Affairs, Senior Citizens and Women ("Zukunftsatlas 2007"), the towns and regions of the Sauerland were not highly ranked as most of them – like the majority of the cities and districts of NRW – are

characterized by a mix of constraints and opportunities (cf. BUNDESMINISTERIUM FÜR FAMILIE, SENIOREN, FRAUEN 2007).

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"Dying villages?": The Effects of Demographic Change on Rural Settlements in West Pomerania

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Abstract

Ageing, (out-)migration and the shrinking of population are demographic processes which have significant effects on settlements in rural areas. In particular, the situation in many villages in Eastern Germany is deteriorating rapidly. Interactions between economic structural problems and declining population have enforced a downward spiral, making it increasingly questionable whether the "equivalent living conditions" (*gleichwertige Lebensbedingungen*) – guaranteed by the German constitution – can be maintained in these rural areas.

This contribution uses a case study in West Pomerania to illustrate the impact of ageing and migration processes on village structures as well as to analyze the factors contributing to regressive settlement development. The study highlights several aspects of deteriorating living conditions, in particular the decline of infrastructure and services, of rural buildings as well as of increasing tensions in village communities. In spite of these negative developments, a surprisingly large proportion of rural residents has no intention to migrate.
This makes it even more important to understand the processes and factors responsible for regressive settlement development. The chapter describes three process chains (an economic-social process chain, a brain drain process chain and a process chain that reduces the quality of life) and shows how complex and intricately linked the factors responsible for population/economic decline and ultimately settlement regression are. Unless suitable points of intervention are found, reversal processes will continue in these peripheral rural areas.

1 Introduction

This chapter looks into the phenomenon of "dying villages" and presents the results of a study of some sample communities in West Pomerania on the impact of migration processes on village structures. After a brief presentation of the research design, the chapter introduces the research area. The main section is dedicated to the current situation in the communities, focusing on the following aspects: population change, infrastructure/service provision, housing issues, community life, and migration intentions. The development processes in the declining settlements will then be conceptualized in three process chains. The chapter concludes with an outline of the key results.

1.1 "Dying villages" and media coverage

"Demographic change" or, worse, "demographic disaster" are often-used terms in media parlance, usually in connection with rural areas and especially those in north-eastern Germany. Frequently one can find dramatic headlines such as

- "Woman = clever = gone!" [*Original: "Frau = schlau = weg"]* (HONNIGFORT 2007)
- "Those who do not give up move out" [*Original: "Wer sich nicht aufgibt, wandert ab"*] (BEHRENS 2007)
- "Let the wolves in!" [*Original: "Lasst die Wölfe rein!"*] (PETERS and GLAESCHER 2007)

Meanwhile the topics of population loss, shrinkage and resultant decay are prominent in public discourse, and academic research has to answer the question whether rural settlements are merely in a phase of destabilization or whether they indeed run the risk of being abandoned.

1.2 Research design and hypothesis

To answer this question, the author carried out an investigation of eleven villages in West Pomerania. This included a mapping of the villages, a questionnaire survey with 271 inhabitants, and qualitative interviews with 28 key informants including officials from different administrative levels such as leaders of municipal councils (*Bürgermeister*), directors of local authority associations (*Vorsteher eines Gemeindeverbandes*), district administrators), planning associations (*Planungsverbände*) and estate agents.

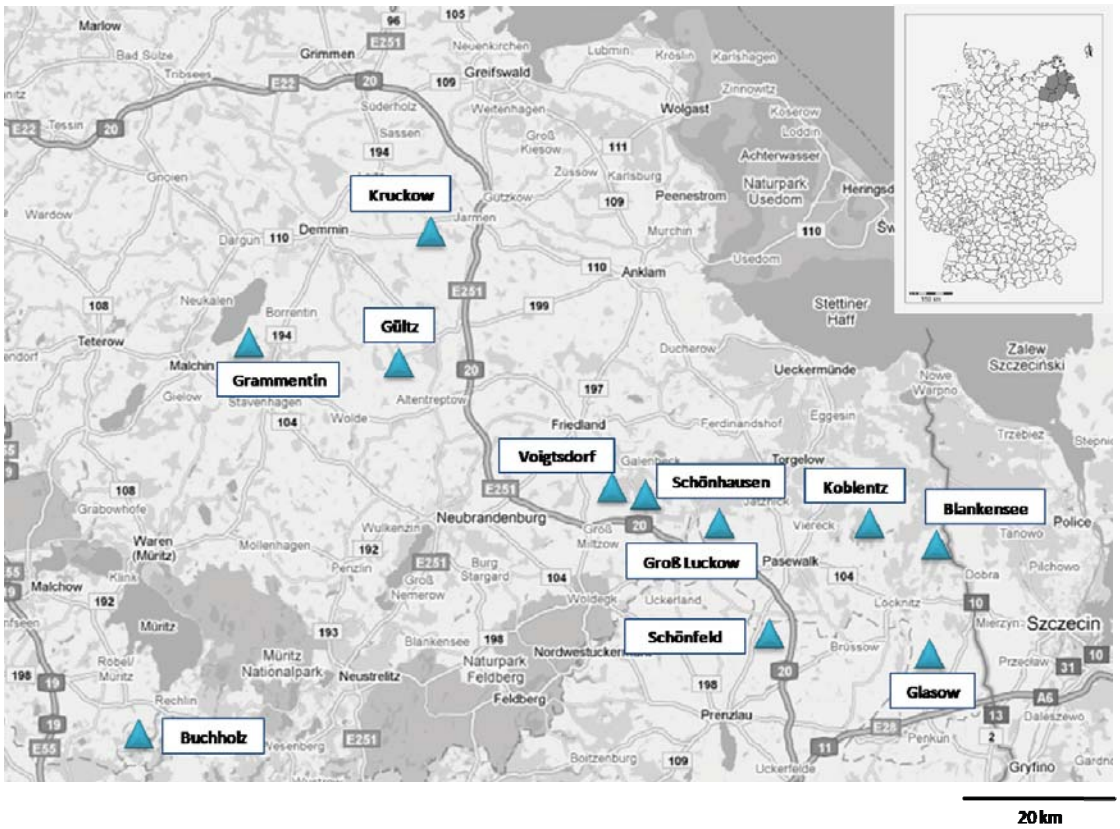
This study pursues the following hypothesis: The rural settlements in West Pomerania are caught in a downward spiral due to long-term population decline. As a consequence, the viability of affected rural areas as places of

"everyday-life" is threatened and total desertion of villages has to be expected in the near future.

1.3 The research area

The empirical study covered 11 communities in West Pomerania (cf. Figure 1), a peripheral region with a low population density, a widely scattered system of central places and an economic performance that is clearly below German average. The primary sector accounts for more than 6 % of the gross value added, and the unemployment rate is above 20 % (with a share of 45 % of long-term unemployed). Annual per-capita income is very low (below € 13,000). Less than 45 % of the residents are satisfied with their lives in the region. The population is projected to decrease strongly until 2050, and – for the same period – an above-average ageing process is forecast. In other words, the region has serious viability problems as a consequence of its demographic development (BUNDESAMT FÜR BAUWESEN UND RAUMORDNUNG 2006a and 2006b).

Figure 1
The research area with the 11 selected communities



The 11 research communities (Blankensee, Groß Luckow, Koblentz in Landkreis Uecker-Randow, Buchholz in Landkreis Müritz, Gültz, Grammentin and Kruckow in Landkreis Demmin, Schönhausen and Voigtsdorf in Landkreis Mecklenburg-Strelitz as well as Schönfeld in Landkreis Uckermark) were selected from 68 villages initially identified on the basis of

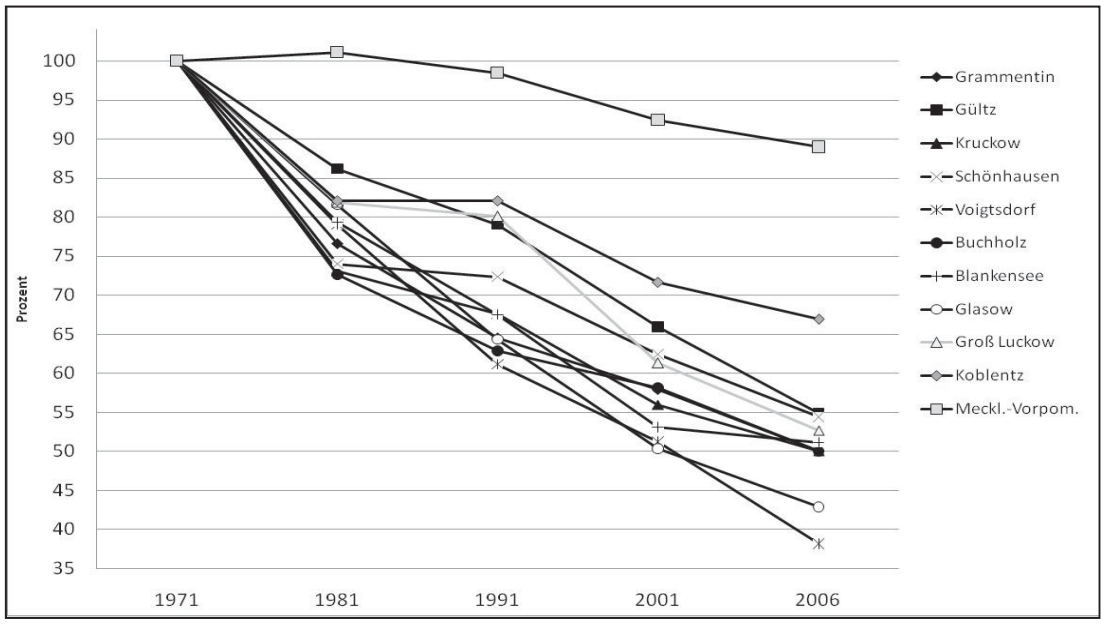
statistical criteria and the willingness to participate in the study signalled by the leaders of the respective municipal councils in telephone interviews. The selected rural settlements proved to be particularly suitable for this study because, for several decades, they have experienced a negative demographic development and concomitantly been confronted with a range of problems in economy, infrastructure, services etc. Therefore, the author expected to be able to document visible regressive settlement processes.

2 The current situation in the communities

2.1 Population development

As WEBER (1975) and WEIß (2006) have described in detail, rural areas in West Pomerania have been experiencing outward migration for more than four decades. This permanent decrease in population was widespread in the rural areas of the former German Democratic Republic (GDR). The negative balance of migration diminished somewhat in the 1980s, but increased again after German reunification (see Figure 2).

Figure 2
Percentage change of the population in the research communities and in Mecklenburg-West Pomerania, 1971-2006 (1971 = 100%)



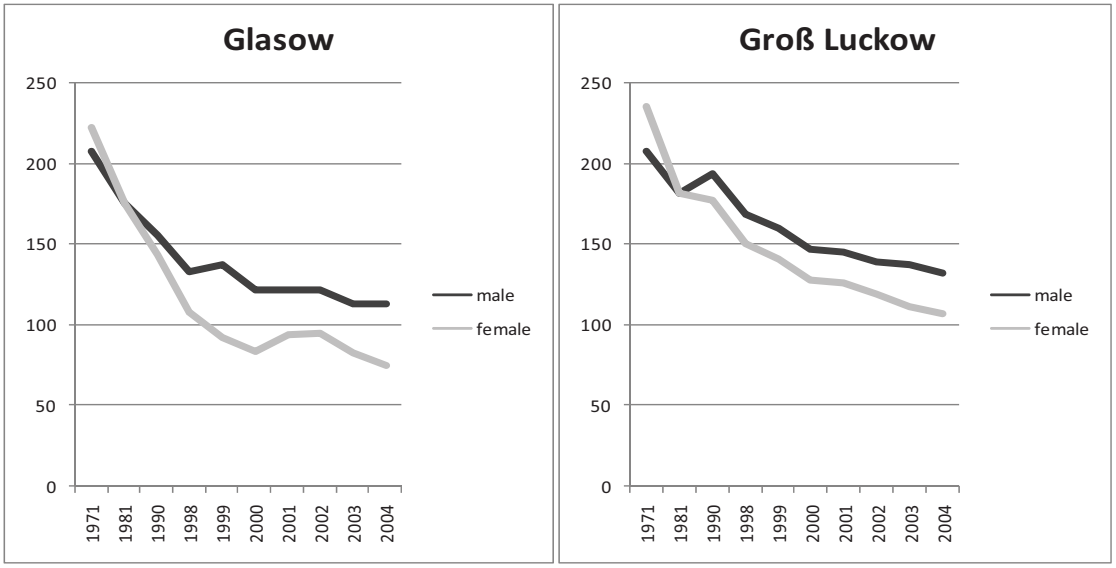
Data source: Statistisches Landesamt Mecklenburg-Vorpommern: Gemeindedaten 2007

Figure 2 shows that the study communities have been confronted with an extraordinarily high loss of population. By 2006 only a fraction of the 1971 population still lived in the villages. The loss in population ranged between 33 % and 62 % for individual villages over this 35-year period. In comparison to the overall trend in Mecklenburg-West Pomerania

represented by the uppermost line in Figure 2, this development was extremely negative.

It is important to understand that the loss of population does not result from natural population development but mainly from outward migration. In particular, young and qualified women form a disproportionately high proportion of out-migrants as only very few employment opportunities exist for women outside agriculture. This pattern can be illustrated by the examples of Glasow and Groß Luckow where out-migration has resulted in an overall preponderance of males (Figure 3) and an increasing sex ratio. Sex ratios are particularly distorted among the productively and reproductively active age groups in the region, where men outnumber women by 15 % (WEIß 2006: 469f). Moreover, the loss of women means that potential mothers are lost, with important repercussions for the next generation(s). Out-migration, particularly female out-migration, therefore accelerates the demographic ageing process in the region.

Figure 3
Development of male and female population in Glasow and Groß Luckow, 1971-2004



Data source: Statistisches Landesamt Mecklenburg-Vorpommern, Gemeindedaten 2005

2.2 Infrastructure and services

Rural areas were of high societal significance in the GDR. Therefore villages were supported by the state in their efforts to maintain a fairly broad range of infrastructure and services. These included e.g. new roads and streets, new agricultural and residential buildings (even if made from pre-fabricated slabs) and regular public transport services. In the transition process since 1989, however, many villages have lost their economic basis and, concurrently, a considerable part of their infrastructure and services. Many agricultural cooperatives have disintegrated; many agricultural and residential buildings are vacant and will be demolished. The "special status"

of rural areas was lost in the course of the political changes after re-unification. Livelihood sources of many people have been destroyed (HERRENKNECHT 1995: 50).

The study communities can be used to illustrate the decline of infrastructure and services (Figure 4). Almost every year an important business or service has closed down, among them groceries, butcheries, bakeries, post offices, general practitioners, childcare facilities (such as day-care centres), and meeting places such as cafés, while the customer-oriented form of public transport has vanished. Due to this decline villagers find it increasingly difficult to cope with their everyday lives.

Figure 4
The decline of infrastructure and services in the research communities
Source: personal information from heads of municipal councils

	Grocery	Bakery	Butchery	Post office	Surgery	Child care facilities	School	Pub	Public transport
Blankensee	1999			1999		1998	1976		
Buchholz	1993		1990		1990	1990			
Glasow	2006				2003	1995		1993	
Gültz	2005	1954	2003	1994			1998	2004	
Grammentin	1995	1975	1980	1995					
Groß Luckow		1973		1991	1990	1995	1996		
Koblentz	1997			1994		2000			
Kruckow	1995			1992		1998			
Schönfeld				1990				1990	
Schönhausen	1995			1995		1996	1992/95	1995	
Voigtsdorf	1995			1990	1990	1990		1995	

Year of closure Limited availability Available

The remnants of former service buildings are still visible in some villages. Figures 5 and 6 show the former groceries in Grammentin and Voigtsdorf, both closed in 1995.

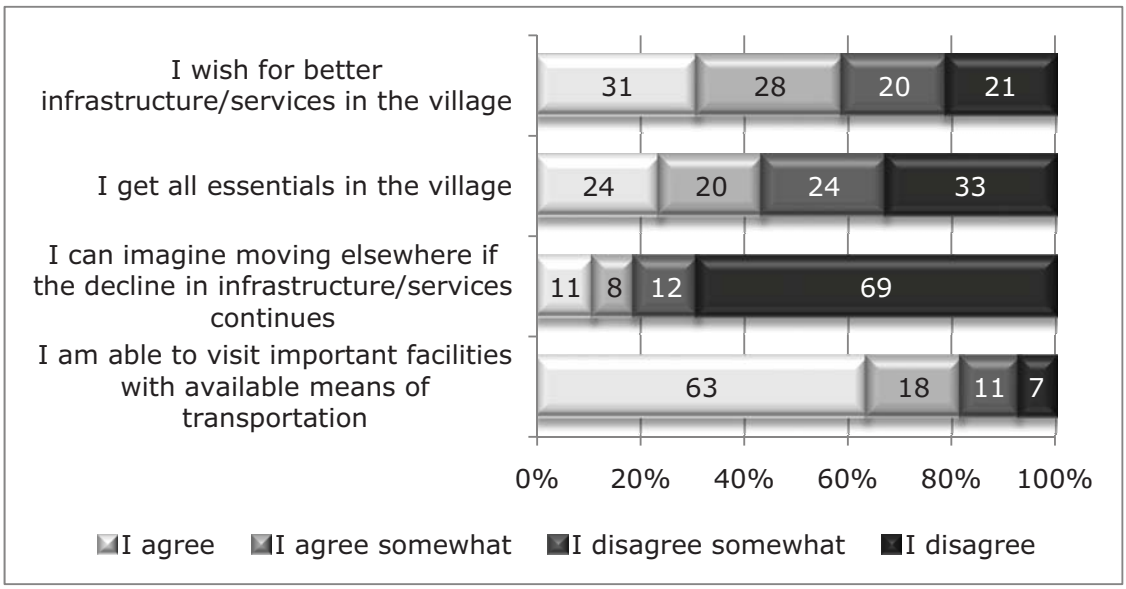
Figure 5
Former grocery in Grammentin

Figure 6
Former grocery in Voigtsdorf

Photos: Reichert-Schick

With this alarming development as a backdrop, the inhabitants of the villages were asked in the study to evaluate local services (cf. Figure 7). It is remarkable that only 60% of the respondents said that they wished for better services in the villages. That means that 40% of the inhabitants were content with the range of services available, though barely half of the surveyed persons found all necessities in the village. Only 19% could imagine moving elsewhere because of the ongoing decline of infrastructure/services, although 18% were not able to reach important facilities by the mode of transport available to them. This was especially true for elderly or unemployed people without a car. Yet, getting basic supplies without a car in this region is nearly impossible.

Figure 7
Evaluation of infrastructure by inhabitants
(Information as percentage, n=271)



Source: author's research

The interviewed experts too view this situation as a problem. They point out that an adequate supply is pretty difficult to attain, particularly for elderly people. The following statement of a senior administrator of Uecker-Randow District is representative for the group of experts:

> "The current infrastructure/services situation reduces people's quality of life and puts a personal strain on elderly people without a car."

However, many experts also argued that over the years the inhabitants had got to terms with the situation.

> "Service provision is poor. It is a long way to get to the medical practitioner or to the shops, but one gets accustomed to everything." (Member of local authority of Röbel-Müritz)

> "The absence of services is not really a handicap for the inhabitants. They have accepted this fact." (Municipal councillor of Kruckow)

These statements explain to some extent why the inhabitants are apparently content with the objectively poor infrastructure/service situation. Villagers have come to accept or accommodate it.

2.3 Housing issues

Today there is a striking housing surplus in West Pomerania. Estate agents from Neubrandenburg evaluate the situation in the following way:

- "The impact of the demographic change is clearly evident: due to population decline prices have been marked down by up to 50%."
- "The out-migration of young people is responsible for empty buildings especially in rural areas. It is only possible to stabilize rents if some houses are demolished."
- "The supply surplus in the property markets in the rural areas is obvious."

The head of the municipal council of Voigtsdorf added:

- "Often the vacant houses are in such a bad state that only their demolition can be taken into consideration."

Residential buildings with signs of disrepair can be found in nearly all villages. An example is the community of Glasow, where the author mapped the housing condition of all 82 residential buildings. The results were the following:

- 61% of buildings were in good condition or had been renovated recently,
- 24% of buildings had small faults,
- 12% of buildings had major faults (e.g. damaged windows, doors or roofs),
- 3% of buildings were in a state of serious disrepair and no longer fit for people to live in.

14 of the 82 residential houses in Glasow had already been abandoned and it is likely that a considerable number of the 68 residential building still lived-in will become vacant in the near future, as 16 of them are only inhabited by single persons, mainly elderly people.

Figures 8 and 9 show houses in different states of preservation in the research communities. Such vacancies give villages an atmosphere of decay and lack of prospects.

Figure 8
Empty building covered with vegetation in Glasow

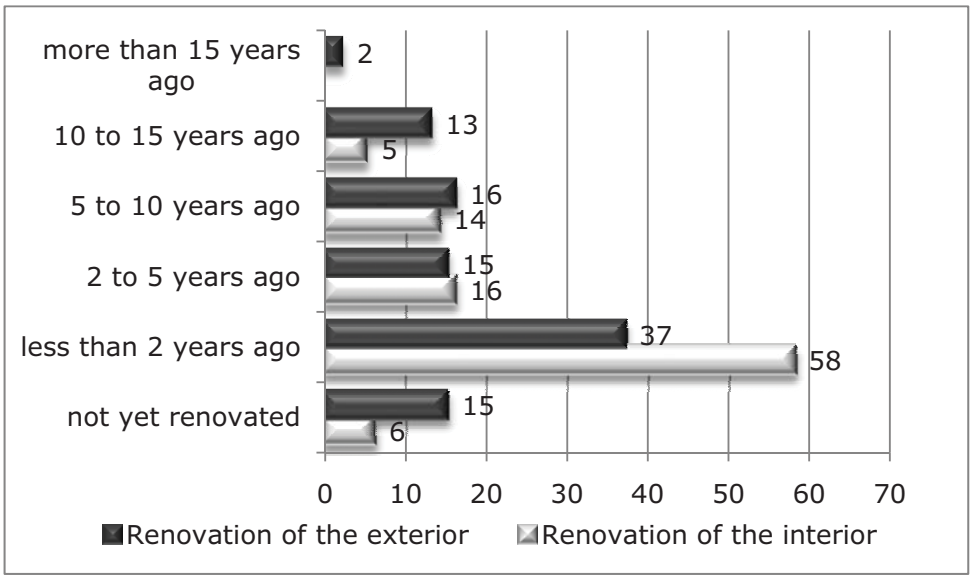
Figure 9
Derelict house with fallen roof in Schönfeld

Photos: Reichert-Schick

At the same time however, there are also signs of high investment activity in the villages (cf. Figure 10). Three quarters of the respondents stated that they had renovated the interior of their houses within the previous five years. Slightly more than half of the inhabitants had renovated the exterior of their houses within that period. Nearly 60% of homeowners envisaged additional renovation measures in the near future.

The vast majority of experts interviewed confirmed that the appearance of the villages had improved. After German reunification people could buy building materials without restrictions; this induced a veritable renovation boom in the 1990s. Meanwhile renovation activities have slowed down, as the financial situation of the inhabitants in the region has changed for the worse.

Figure 10
Date of last renovation (n=194; information as percentage)



Source: author's research

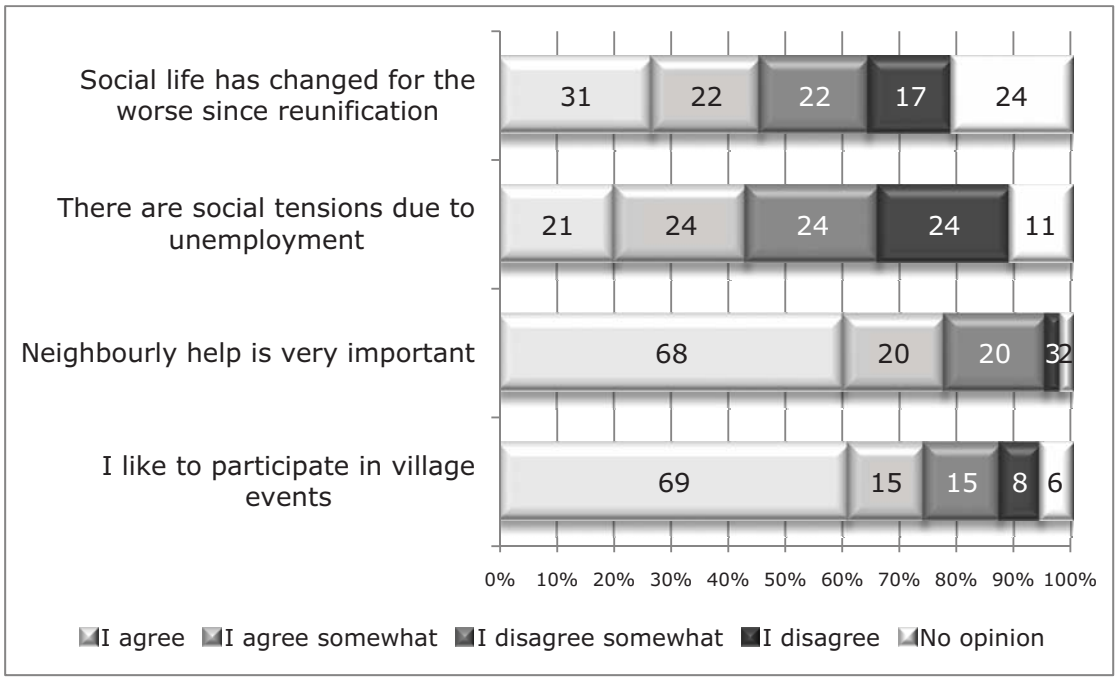
To sum up these diverging tendencies: there are signs of derelict buildings in many villages, but simultaneously of improved ones as well, as the resident population has been investing in the maintenance and renovation of the houses still lived-in.

2.4 Village community life

There are similar contradictory processes regarding community life in villages (Figure 11).

On the one hand, more than half of the persons surveyed attested that social life had changed for the worse and that there were social tensions due to unemployment. On the other hand, the majority also affirmed that neighbourly help was still very important and that they enjoyed participating in village events.

Figure 11
Evaluation of village community life by the inhabitants (n=271)



Source: author's research

While the statements of the key informants on community life in the villages were fairly differentiated, most municipal councillors were very sceptical and negative about the general atmosphere.

The following statements are self-explanatory:

- "Selfishness and envy have increased" (Koblentz)
- "Many people have become addicted to alcohol" (Schönfeld)
- There are "negative emotions, uncertainty and little happiness" (Glasow)

- "Everyone fights for oneself" (Gültz)

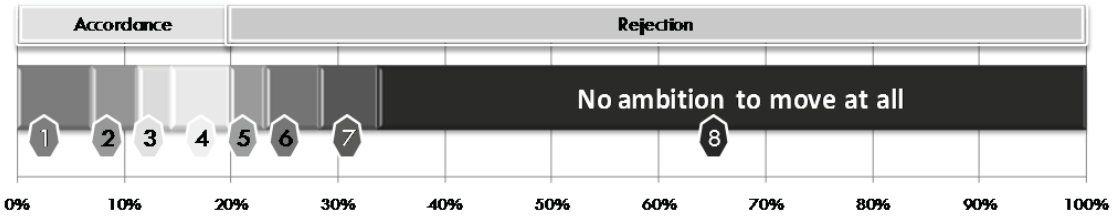
According to key informants, in particular traditional values and local engagement were declining. Though neighbourly help and village festivals existed, most social activities took place in small, socially homogenous groups. The head of the municipal council of Kruckow explained that the living standards of many people were very low due the high unemployment rate. People withdrew from public life in the village and, as a consequence, became socially disembedded while developing a negative self-perception. Some gave up and accepted their fate, others migrated.

Overall, the discussion with inhabitants and key informants on public life in the villages showed that community participation had decreased and community solidarity had declined.

2.5 Intention to migrate

The final question to villagers was whether they intended to migrate elsewhere in the near future (Figure 12). The answer was surprisingly clear. On a scale from one to eight, two thirds positioned themselves on eight, i.e. they had no intention to move. Only 20% of the respondents positioned themselves between one and four, which means that they were considering moving or were planning to migrate. People considering a move had one or more of the following characteristics: they were young, female, without a job and/or without property.

Figure 12
Intention to migrate in near future ("Are you considering moving?") (n=255)



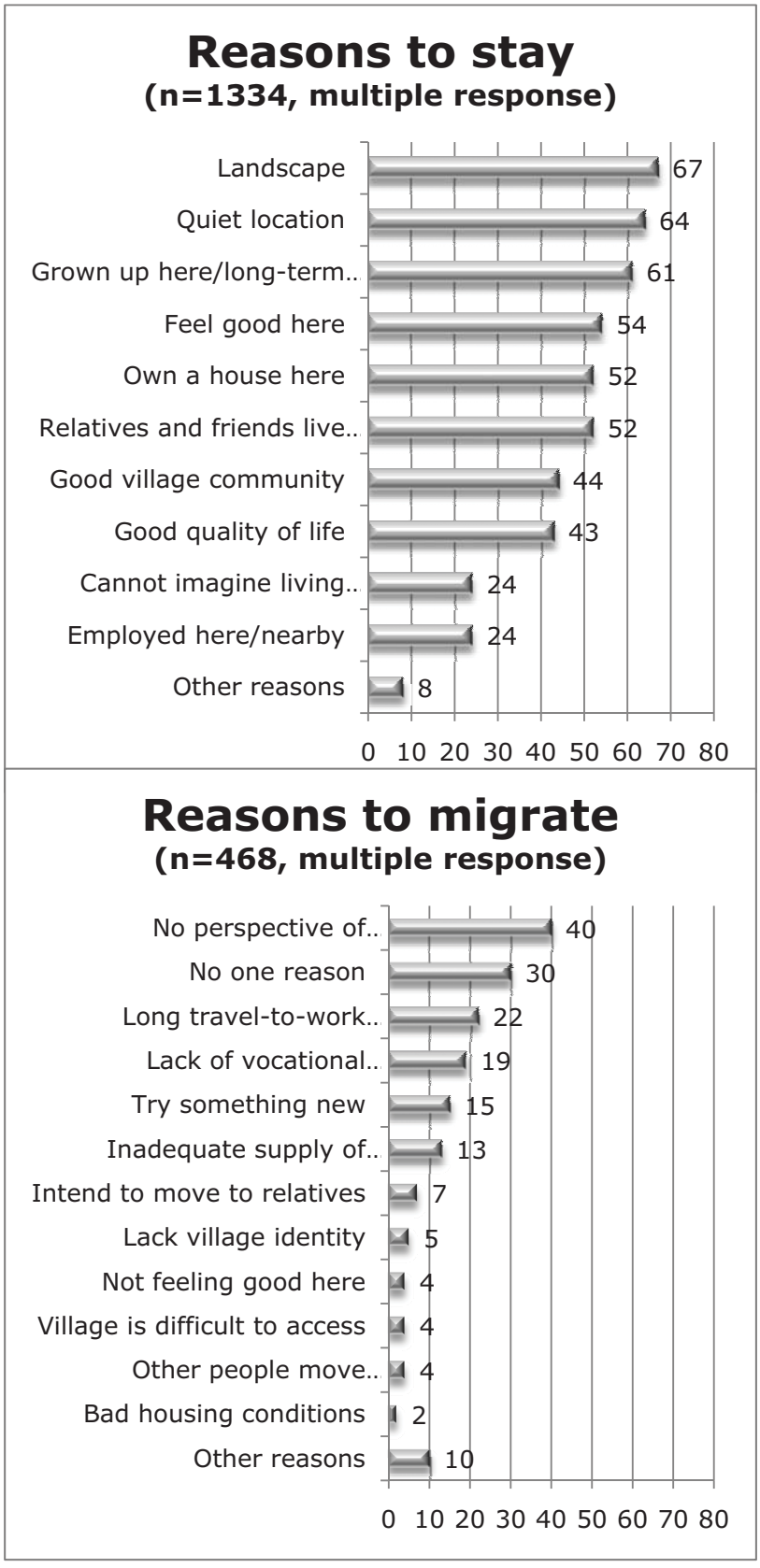
Source: author's research

The reasons why the respondents wished to migrate or stay in West Pomerania were very diverse (Figure 13). There were 1,334 reasons brought forward why people wished to stay in contrast to 468 reasons why people wished to migrate.

The reasons given for staying are mainly emotional or can be classified as soft (location) factors. Two thirds of the interviewees argued that they appreciated the landscape and the beautiful surroundings, and a similar number referred to having spent a good deal of their life in the village.

As far as the reasons for migration are concerned, 30% of the surveyed persons stated explicitly that there was not a single reason to move, for the

Figure 13
Reasons of respondents to migrate or stay in the region (n=271)



Source: author's research

other respondents economic aspects and working environment were crucial. They would consider moving if there were no prospects of employment or if the distance to their workplace was too far.

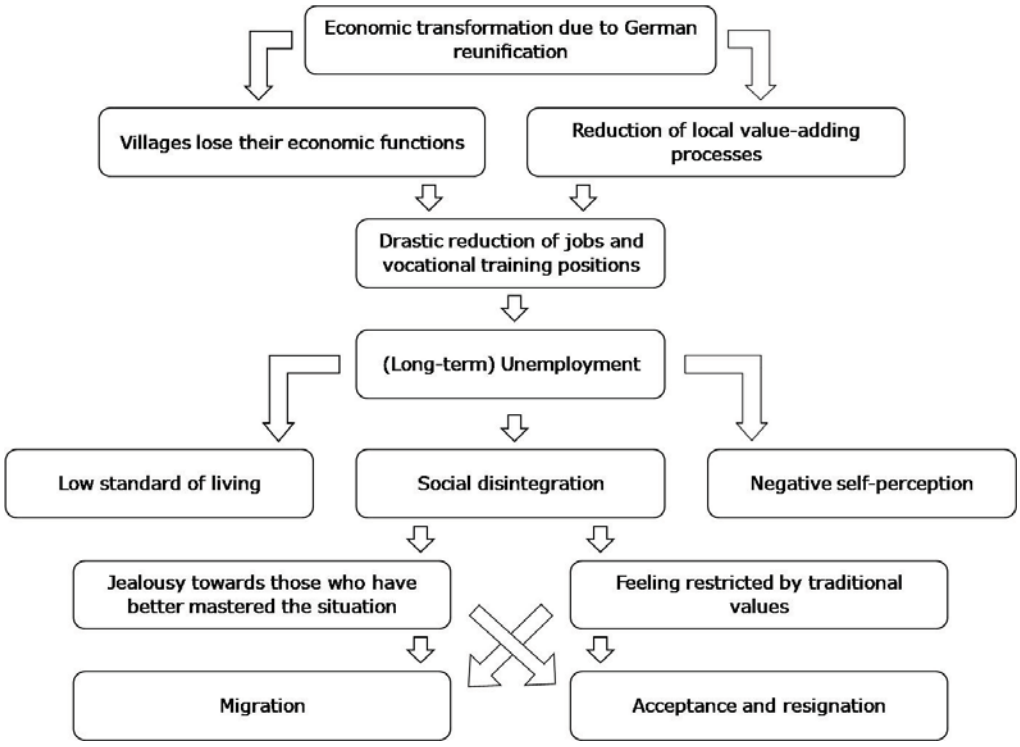
To conclude, a larger part of the inhabitants had no wish to migrate; a smaller part is not able to migrate and has to tolerate the current living conditions. It became evident that the interviewees are very tenacious and are prepared to suffer the disadvantages of remaining in the area. This is all the more remarkable, because more than half of the persons surveyed expected a distinct change for the worse in overall living conditions in the future.

3 Processes and factors responsible for regressive settlement development

The following analysis summarizes the factors which initiate processes of decline and regressive settlement development. The determining factors are very complex and closely interrelated. However, on the basis of the study three main process chains can be distinguished: an economic-social process chain, a brain drain process chain and a process chain that reduces the quality of life.

1) The economic-social process chain (Figure 14): This process chain has its starting point in the reunification of Germany in 1989 and the resultant

Figure 14
The economic-social process chain

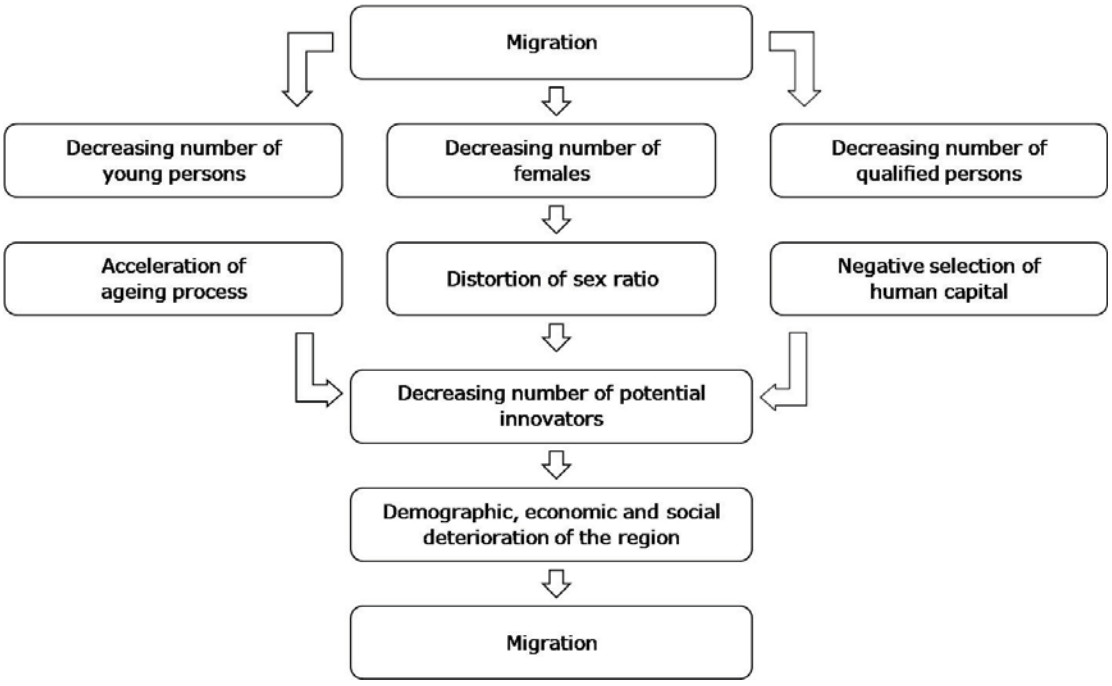


Source: author's illustration

transformation process. During transition many of the very important rural settlements lost their economic functions, while regional value-adding processes were reduced in favour of supra-regional ones. This has meant a drastic reduction of jobs and vocational training positions and has resulted in a high rate of unemployment. In the villages, traditional values like neighbourly help or civic engagement have suffered, while jealousy has arisen towards those who have managed the situation more successfully. Those who did not – often described as the "losers of reunification" – have to experience a low standard of living, combined with social disintegration and a negative self perception. They have either to accept the deteriorating situation or to migrate.

2) The brain drain process chain (Figure 15): Out-migration reduces the number of young, female, and highly qualified persons in the villages. This causes an acceleration in population ageing, an imbalance in the sex ratio and negative selection of human capital. The number of potential and actual innovators dwindles away and – for lack of immigration – the region is getting weaker and weaker in demographic, economic and social terms. In turn, this deterioration reinvigorates migration.

Figure 15
The brain drain process chain



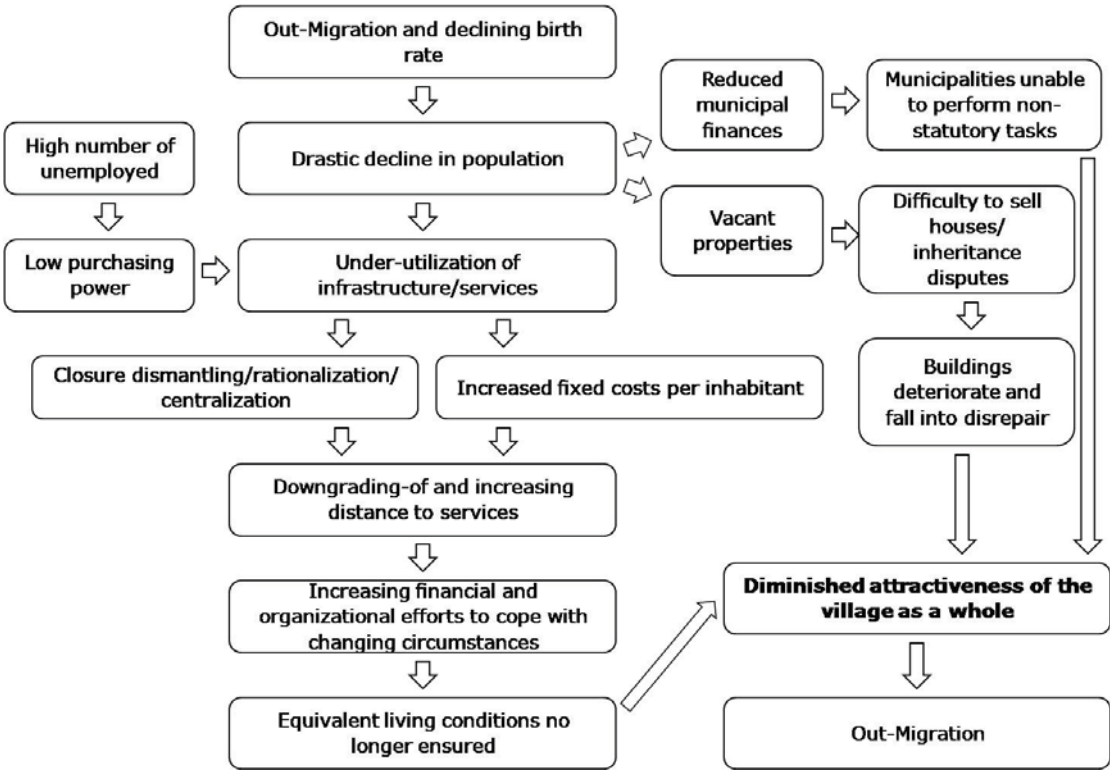
Source: author's illustration

3) The process chain that reduces the quality of life (Figure 16): The basic causes in this process chain are out-migration and decreasing birth rates, which result in a drastic decline in population. This regression has negative consequences for municipal finances. Fundless or even indebted communities are not able to perform non-statutory tasks, which makes these communities even less attractive.

The decline in population also has consequences for the real estate sector. Properties become vacant, and often it is not possible to sell them at an adequate price. If the buildings are vacant for a long time, they are likely to fall into disrepair. This has negative effects on the appearance of the village and contributes to a reduced quality of life.

In addition, the decline in population causes an under-utilization of infrastructure and services. There is a clear link to the economic-social process chain, because unemployed people with a low household income only have limited purchasing power and demand for infrastructure and services. In the case of the "pipeline-bound" technical infrastructure the fixed costs per inhabitant increase considerably. When infrastructure and services are under-used they tend to be rationalized, closed down or dismantled. As a consequence, the distance from the villages to certain services increases. This necessitates rising financial and organizational efforts by the villagers to cope with changes. Finally, the so-called "equivalent living conditions", as prescribed in article 72 of the German Basic Law, are no longer maintained due to financial factors. The attractiveness of villages as places to live is greatly reduced, and even more people are migrating elsewhere.

Figure 16
The process chain that reduces living quality



Source: author's illustration

It is important to bear in mind that there are many other factors contributing to regressive settlement development, but the three chains

described above play the most important role in West Pomerania and in other rural areas in Eastern Germany.

4 Results and conclusion

To sum up, the hypothesis presented at the beginning of the chapter will be reconsidered and the crucial question "Do we have to assume that deserted villages will occur in the near future?" will be answered.

What makes the problems in the research communities so intricate is the combination of demographic change and economic decline, as the interaction between these factors generates a downward spiral leading to continuous deterioration. The danger is the mixture of multiple factors, each one of which already being a serious problem in itself: low birth rates and the out-migration of young, active and qualified people add up to a serious decline in population. Essential rural structures degenerate; unsaleable properties are vacant, the maintenance of infrastructure and services is no longer financially viable, important functions are lost, and negative media headlines create a poor image of the region.

However, it must be pointed out that a large part of the present population is not willing or able to migrate, shows considerable inertia, and accepts the existing restrictions and disadvantages. Many buildings will remain in a fairly good condition in the near future, so that the visual deterioration process is limited to small "islands". However a critical stage of village desertion has to be expected, when the important cohorts of 50 years and older will have died in 30 to 40 years time or will have moved to homes for the elderly. With the migration and death of this "tenacious generation", the thinning of the settlement structure and the emergence of partially or totally abandoned villages is inevitable.

The situation can increasingly be summerized as follows: Rural settlements in West Pomerania are destabilized more and more and run the risk of being abandoned in approximately 30 to 40 years. This view is confirmed by the "Regional Planning Association Mecklenburg Lake District" (*Regional Planungsverband Mecklenburger Seenplatte*): "At the moment it cannot be safely claimed that dying villages exist. However, there are some villages that will rightly be described by this term in the near future as a result of the rapid ageing of their population".

This leads to the question whether the abandonment of the villages will be accepted in a passive way or whether the state will tackle this process in an active way. The German journal "Der Spiegel" reported that: "It is planned to depopulate whole villages in Brandenburg in order to save money and to install nature protection areas." There was even a debate on giving a bonus to people who move out of small villages. These measures are highly controversial, but one can assume that ways and means to actively regulate the process of settlement regression will be found in Germany.

The European landscape has already experienced several phases of colonization, stagnation and regression in its history. As DENECKE (1985) rightly stated, regressive development of settlements is a process that occurred again and again, and in many regions. A consolidated view of all the factors presented indicates that today we are again confronted with considerable population decline as a result of on-going demographic change and out-migration. The rural settlement system in Germany will not remain unaffected by this development. It is however uncertain and questionable whether the shrinkage and ageing processes in rural areas can be slowed down by state interventions.

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Rural Protests in Britain and the Enigmatic Significance of Globalization

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Abstract

One of the clearest impacts of globalization on rural societies has been in the restructuring of agriculture. As rural localities have been enrolled into a global food economy, farmers around the world have been confronted by unstable price regimes, increased competition, corporate pressure and the consequences of policy reform. Farmers have accordingly been at the forefront of anti-globalization protests in a number of countries from France to India and South Korea. Yet, in many developed nations, including Britain, the connection between rural protests and globalization remains enigmatic. Global factors are significant in many of the issues around which farm protesters have mobilized in Britain, yet globalization is rarely explicitly referred to in protests and there are few signs of solidarity with global farm networks. This paper explores this conundrum, drawing primarily on empirical research on British farm protests undertaken as part of a wider study of grassroots rural protest in Britain, and supplemented by evidence from other countries and from other forms of rural protest in Britain.

1 Introduction

There can be little dispute that globalization is the single most influential force in reshaping rural regions around the world today. The liberalization of global trade and capital movement, combined with the construction of global supply chains, transnational corporate concentration, and the exploitation of new technologies that permit the annihilation of space by time, have altered the dynamics of agricultural markets to the detriment of smaller farmers, and accelerated rural economic restructuring. Similarly, the globalization of mobility has enabled the growth of international tourism to rural areas, transnational counterurbanization, and the movement of migrant labour between rural regions; whilst a globalization of values, facilitated by the global media and global NGOs, is changing public attitudes to nature and the countryside and challenging embedded rural traditions.

In WOODS (2007), I proposed the concept of the "global countryside" as a hypothetical space representing the end-point of these processes, a space characterized by elongated commodity networks; corporate concentration organized on a transnational scale; the supply and employment of migrant labour; international tourism and sites of global amenity; high levels of non-national property investment; the transformation of the discursive construction and management of nature; a landscape inscribed with the marks of globalization; increasing social polarization; and new sites of political authority. There is nowhere in the world that fully exhibits these characteristics, but they are partially articulated in many localities. As such, we can identify an emergent global countryside that is

> a rural realm constituted by multiple, shifting, tangled and dynamic networks, connecting rural to rural and rural to urban, but with greater intensities of globalization processes and of global interconnections in some rural localities than in others, and thus with a differential distribution of power, opportunity and wealth across rural space (ibid.: 491).

Moreover, as the emergent global countryside is constantly under construction, it is equally always a contested space, with the transformative agendas of global actors competing with resistance by local rural protest groups and social movements:

> The transformations wrought by globalization on rural space frequently meet resistance from local actors and allied campaigners … Because globalization is seen to transform place, the contestation of globalization processes is inseparable from contests over place-meaning and identity which connect in turn in the global countryside with debates over the rural identity of a locality and the meaning of rurality. As such, the politics of the global countryside is intrinsically conjoined to the "politics of the rural" (ibid.: 494).

There are no shortage of examples of rural protests and social movements confronting globalization in both the global north and the global south. The

actions of French small farmers' leader, José Bové, and his colleagues from the Confédération Paysanne, in dismantling a McDonald's restaurant under construction in the town of Millau in August 1999, is perhaps the best known case in Europe. Bové's trial the following year, in which he called anti-globalization campaigners from around the world as witnesses, whilst thousands of supporters enjoyed a free festival outside the court, highlighted the impact of globalization on rural societies and catapulted Bové to hero status in the alter-globalization movement (WILLIAMS 2008; WOODS 2004).

Outside Europe, protests against trade deals that have liberalized agricultural markets in South Korea have attracted hundreds of thousands of demonstrators, joining a farmers' movement that gained a martyr when its leader, Lee Kyoung-Hae publicly committed suicide during the International Farmers' Day of Action at the World Trade Organization meeting in Cancún in 2003. Indian farmers' groups, such as the Karatanka State Farmers' Union and the Bharatiya Kisan Union have led campaigns against the predatory actions of transnational agri-food corporations; whilst rural social movements in Latin America, including the landless workers movement (MST) in Brazil, are increasingly framing their campaigns around globalization.

Many of these organizations are now linked in international networks including Peoples' Global Action (PGA) (ROUTLEDGE and CUMBERS 2009), and Vía Campesina, the transnational peasant-farmers' movement (DESMARAIS 2008). Vía Campesina has members in Europe and North America, including in Germany, France, Italy, Spain, Switzerland and Belgium, whilst the PGA organized an "inter-continental caravan" of Indian farmers through Europe (FEATHERSTONE 2003).

Yet, there is one place where globalization seems not to have penetrated the discourse of rural politics, in spite of the increased prominence of rural protests over the last decade – Britain. In this paper, I draw on recent research on grassroots rural protest and political activity in Britain – which was conducted with Jon ANDERSON, Steven GUILBERT and Suzie WATKIN, and funded by the Economic and Social Research Council – to consider the enigmatic significance of globalization to British rural protests.

2 Rural protests in Britain

2.1 The emergence of British rural protests

The decade since 1997 has witnessed a remarkable resurgence of rural protests in Britain, embodied most prominently in three large-scale rallies organized in London by the Countryside Alliance, but also embracing a large number of other demonstrations, marches, blockades and direct actions (WOODS 2005). The twin issues of defending hunting and supporting agriculture have been the primary drivers of this movement, but protests

have also been directed at a plethora of issues including new house-building, windfarm developments, supermarket openings, school and post office closures, hospital rationalizations, to name a few.

The emergence of these protests has been shaped by the British political context, and especially the election of a Labour government in 1997. The Countryside Alliance was established by pro-hunting supporters in anticipation that a Labour majority in parliament would provide sufficient votes to pass legislation banning the hunting of wild mammals with hounds (as they eventually did in 2004). By drawing connections between hunting and other rural issues, the Countryside Alliance helped to focus rural protests on the British government (WOODS ed. 2008). Yet, many of the issues that provoked protests are not unique to Britain. Blockades of fuel depots by farmers and hauliers in September 2000 were part of a Europe-wide wave of protests against fuel prices, whilst other protests by farmers over falling incomes and food imports are mirrored by similar demonstrations in France, Ireland, Poland, Australia and South Korea. Protests against windfarms, new supermarkets and school closures can be found in many countries, including Germany, Australia and the United States. Even hunting is not solely a British concern, with perceived legislative threats to hunting prompting defensive protests and campaign movements in Belgium, France and New Zealand.

Moreover, these are not merely coincidences, look closely and the skein of globalization processes can be identified. The frustration of farmers at their products being undercut by cheaper imports is tied to the neoliberal project of global free trade; challenges to hunting reflect the globalization of values which replaces locally-embedded understandings of nature with global discourses; and developments of windfarms and supermarkets often involve transnational corporations.

The connections are recognized by a few rural activists in Britain, such as the leader of the Small and Family Farmers Association, who has travelled to meet farmers in India and the United States with Vía Campesina, and has reported on the similarities that has observed between their concerns and campaigns and those of British farmers. However, he also acknowledges that most British farmers do not see things the same way:

> I sat down with farmers with two acres in India and they told me about their problems, you know, prices below the cost of production. You think, well, I could get Fred Bloggs from East Anglia and sit these two down … they will have absolutely everything in common. There's different sizes, you've got 2,000 acres and you've got 2 acres. But they see each other as the enemy. (Leader, Small and Family Farmers Alliance, interview)

Indeed, of all the activists and leaders in rural campaign groups that we interviewed for our research, only two or three at most made even a passing mention of globalization or recognized the similar challenges faced by rural communities in Britain and those elsewhere. Neither does

globalization feature in the publicity materials or rhetoric of rural campaigners.

How do we explain this strange absence? There are three factors that I suggest are relevant: the lack of extreme globalization impacts; the framing of rural protests; and the ideological position of the rural protesters.

2.2 Lack of extreme globalization impacts

Globalization works in many ways and the nature, scale and pace of the impact of globalization processes can vary significantly between localities. In some places the impact of globalization is direct and dramatic. In South Korea, for instance, entry to the World Trade Organization was accompanied by the lifting of restrictions on agricultural imports which resulted in farmers' incomes falling rapidly as the struggled to compete. Elsewhere, rural localities have been exposed to the raw effects of globalization when staple employers such as paper mills have been suddenly relocated by transnational corporations (EPP and WHITSON 2001). In still other localities, the clear effects of globalization have been felt with a rapid growth in numbers of international tourism, amenity migrants and/or migrant workers (e.g. WOODS forthcoming).

However, in many rural localities the influence of globalization is more subtle and indirect, and for the most part the British countryside falls into this category. There are very few communities in rural Britain where employment is dependent on a single industry that is hot-wired into the global economy, such as forestry or mining. Similarly, there are very few rural localities which have become dependent on international tourism, or which have experienced significant amenity in-migration from abroad. Indeed the most direct impacts of globalization processes on rural communities have perhaps been felt in parts of Scotland, in Donald Trump's attempts to build a golf resort on the Aberdeenshire coast, or in the purchase of large estates, complete with tenants, by overseas tycoons.

More generally, the workings of globalization processes in rural Britain are so entangled with national-scale economic and political structures and processes that their influence is disguised. British farmers, for example, have become used to competing with imports from elsewhere in Europe during the three decades since British entry to the then "Common Market", and at the same time are afforded a degree of protection against the full effects of global trade liberalization by the Common Agricultural Policy. As such, the vulnerability of British farmers to global economic trends and processes is not always evidence. Similarly, hunting has been a domestic political issue in Britain for over a hundred years, such that the contribution of the "globalization of values" to shaping public opinion in favour of a hunting ban – including amongst many rural residents – is not fully appreciated.

Thus, it has been national institutions that have tended to be the targets for rural protests in Britain, not the more amorphous and invidious forces of globalization.

2.3 The framing of rural protests

The absence of extreme globalization impacts in rural Britain has meant that globalization has not been evoked in the "framing" of rural protests, that is, the way in which rural protests are presented and made intelligible to participants and observers. Instead, rural protests in Britain have tended to be framed as being part of a rural versus urban struggle, a device that encourages solidarity between different rural campaigns whilst militating against the forging of alliances with urban environmental and anti-globalization activists.

The propagation of this discursive frame was the deliberation intention behind the formation of the Countryside Alliance in 1997. Although formed by three pro-hunting lobby groups, its founders had realized that hunting alone was not a large enough issue to attract sufficient numbers of participants to demonstrations to make an impact on the media and on policy-makers. As such, they set out to position the parliamentary threat to hunting as part of a wider perceived assault on rural life by urban society, as encapsulated in the "mission statement" for the Countryside Rally in June 1997:

> This initiative arose as a response to the frustration and concern felt by country people against the threats posed to the countryside and their jobs, by politicians and urban influence, through prejudice, ignorance and diminishing rural representation. (Countryside Rally Mission Statement 1997)

Participants used the Countryside Rally, and the later Countryside March (1998) and Liberty and Livelihood March (2002), to highlight a number of issues alongside hunting, ranging from pressures on farming to the closure of village post offices. Similarly, the Countryside Alliance as an organization has campaigned across this range of concerns. Furthermore, the discursive frame of a rural-urban conflict has also been applied both by activists and by media commentators to a plethora of other rural protests, including farmers' demonstrations, opposition to the closure of rural post offices, schools and other key services, and campaigns against new windfarms. For example, the leader of one anti-windfarm protest group described the distrust of urban politicians by rural residents and the sense of alienation felt by many rural people:

> There is a hell of a lot of distrust about the political decision making process, a lot of people are quite disturbed about that and a lot of people feel that government, central government particularly, has little understanding of rural communities. A lot of them display very little understanding about how rural communities are being changed.

> A lot of people think rural communities are just forgotten about. (Windfarm campaign leader, Devon)

In this way, the attention of rural protesters was diverted away from processes of globalization as the source of their situation, to the corruption of urban society, which was repeatedly and variously described as "ignorant", "ill-informed" and "misguided". This perspective was articulated, for example, by the Countryside Alliance president, Baroness Mallalieu, in her address to the crowd at the Countryside Rally:

> We cannot and will not stand by in silence and watch our countryside, our communities and way of life destroyed forever by misguided urban political correctness. (Baroness Mallalieu to the Countryside Rally 1997)

Additionally, rural protesters also drew on the well-established discourse that equates the countryside with true national identity, as counter-posed to the dilution of urban culture by foreign influences. As such, the defence of rural values and ways of life became represented as simultaneously a defence of British values and ways of life:

> I was not marching with sadists yesterday [at the Countryside March], but with tens of thousands of good, true British people… We are dealing with an aspect of the British character which is common to all classes. This is a phenomenon which has led our country to win wars. It is summed up in the phrase "Leave us alone." (Charles Moore in *The Daily Telegraph*, 2 March 1998)

> The people who are coming to London are the backbone of the nation. They are those who have always been ready to fight for their country when required. For them "country", in the sense of nation, is closely bound up with "country" in the sense of green fields. (Leader article in *The Daily Telegraph*, 28 February 1998, quoted in WOODS 2005: 116)

Accordingly, the waving of national flags and singing of patriotic songs were common features of the dramaturgy of the rural protests, including the London marches and farmers' demonstrations (ibid.). In making these references, the protesters are implicitly acknowledging that their concerns are subject to external influences and are part of a wider global transformation. Yet, the nationalistic framing does not allow for the consideration of solidarity with rural communities in other countries against the common challenge of neoliberal globalization, but rather promotes an isolationist protectionist politics in which foreign farmers, for example, are seen as rivals.

2.4 The ideological position of rural protesters

A further distinctive feature of British rural protests is their very conservative politics. Our survey of Countryside Alliance members found

that over half of the respondents were members of the Conservative Party, and that nearly half read the right-wing *Daily Telegraph* newspaper. An opinion poll taken at the 1998 Countryside March similarly recorded that 79 % of participants had voted Conservative in the 1997 general election, and only 7 % had voted Labour (ibid.). This contrasts both with the progressive politics of rural movements in global south, and with many rural protests elsewhere in Europe that have drawn participants far more broadly from across the political spectrum.

The conservative background of British rural protesters has made them naturally suspicious of the radical politics of the anti-globalization movement. Many individual activists in the anti-globalization movement hold positions on environmental protection, animal welfare and vegetarianism that are diametrically opposed to those of individuals in the rural movement. Similarly, the strong anti-capitalist rhetoric of parts of the anti-globalization movement is antagonistic to farmers who have been cultured to regard themselves as businesspeople. As such, the rural movement in Britain has been careful to keep a distance from the anti-globalization movement, for example contrasting the orderliness of the Countryside Alliance marches in London with the violence and damage to property experienced at the May Day anti-globalization protests in London in the 1990s and early 2000s (ibid.).

However, the British anti-globalization movement is a diverse front and includes many individual activists who are rural-based and/or rural born, and who represent an alternative vibrant strain of rural radicalism (HALFACREE 2006 and 2007). British anti-globalization activists have participated in international farmers' days of action at events including the G8 Summit in Rostock in 2007, and have done so to express solidarity with British farmers and rural communities, but without the presence of British farm and rural activists (MASON 2009). Similarly, members of The Land is Ours (TLIO) – a group with solidarity links to land rights movements in the global south and which has come into conflict with farmers over its support for land reform and "low-impact" developments in Britain – joined the Countryside Alliance's Liberty and Livelihood March to demonstrate their commitment to the defence of the British countryside.

Hence, there are areas of common cause between the rural protest movement in Britain and radical activists in the anti-globalization movement and the environmental movement. Yet, examples of actual co-operation are rare. Some more pragmatic individuals within rural campaign groups such as Farmers for Action recognize the expediency of working with radical activists when there is shared group, but at the same time remain dismissive of their erstwhile allies and their beliefs:

> We did pick up an awful lot of we termed bunny huggers [during the Foot and Mouth epidemic], but we took their money because they thought we were doing something right at the time. (Chair, Farmers for Action)

3 Conclusions: The phantom presence of globalization

Globalization has an enigmatic presence in the recent wave of rural protests in Britain. At a superficial level, globalization is most noteworthy for its almost complete absence from the discursive framing and rhetoric of the protests, yet digging beneath the surface it is clear that globalization processes have had an influence in creating many of the situations that have provoked rural protests. The liberalization of global agricultural trade has been a factor in the economic pressures faced by British farmers over the last decade, along with the increasing role of global corporations and the effects of exposure to distant events. At the same time, the debate over the future of hunting, which has generally been understood as a parochial British issue, has been implicitly influenced by the global circulation of environmental and animal welfare values and the lobbying of global NGOs.

That more has not been made of these underlying influences is down largely to the background of the rural protesters and the way in which the protests have been mobilized and framed. As the impact of globalization in the British countryside has tended to be indirect rather than direct, the threat to rural communities has been perceived to come from national institutions, and it is these institutions that have been the obvious targets for rural protesters. In particular, the device of a rural-urban divide has been heavily used to frame the protests and mobilize participants, keeping the conflicts within the national context. This framing has suited the political socialization and ideological roots of the rural protesters, founded in a conservative hegemony that was itself based on a discursive separation of the rural and the urban, with the latter associated with socialism and radical politics (WOODS 2005).

However, the phantom presence of globalization in British rural protests is not only in the underlying causes of rural discontent, but also in the assertion by rural protesters of local distinctiveness and a local sense of belonging. The re-assertion of the local is a corollary of globalization as local cultures, customs, traditions and products are rediscovered as anchors for identity in the transient and fluid globalizing countryside. This dynamic can be observed in the resurrection of local festivals and in initiatives to promote local food, but it is also present in campaigns that seek to defend local landscapes, local institutions or local cultural practices as being intrinsic to their local sense of belonging.

It is in this way that rural protests in Britain have contributed to the politics of negotiation and hybridization through globalization and transformed rural localities. Even if no direct reference is made to globalization, by asserting local distinctiveness and local or rural identity against perceived external threats, rural protests are engaging with sometimes insidious processes of globalization and helping to shape the outcomes. As such, whilst the rural protest movement in Britain has been careful to distance itself from the anti-globalization movement, its activities are nonetheless part of the politics of the emergent global countryside.

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Regional Currencies – An Instrument for Sustainable and Integrated Rural Development in a Globalized World?

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Abstract

In rural areas in Europe, more and more so-called "regional currencies" complement the Euro or national currencies. In Germany too, the number of regional currency initiatives that have already implemented regional currencies or plan to do so has increased considerably in the last few years. While in March 2006, 19 regional currencies had been put into circulation in German regions, by October 2007 their number had increased to 34.

In most cases, regional currencies are protected by a negative interest in order to speed up the circulation of the money and to increase the business volume of regional companies. The fees for circulation and for the re-exchange into the usual currency (e. g. the Euro) are utilized to cover administrative costs and support regional non-profit projects.

Regional currency initiatives see themselves as an alternative to the global economic system, which they consider as the main cause of many current social problems such as unemployment and social inequalities. They wish to stimulate regional economic cycles, to strengthen regional identity and social cohesion as well as to safeguard jobs.

Yet, can regional currencies really be instrumental in contributing to the development of rural areas in the context of globalization? This paper wants to briefly look into this question, based on information about regional currencies in Germany collected in three surveys from 2006 to 2008.

1 Introduction

The world-wide financial crisis was talked of every day in the media in the second half of 2008. The collapse of the global financial system was feared by many people. However, in parallel to this world-wide financial system – which most people do not identify with, but whose risks they are exposed to – more and more independent alternative systems have started to appear. These include a new trend that can be found in many, often rural, areas of Europe, as different new types of alternative currency systems are established. So-called "regional currencies" complement the national currencies or the Euro.

Alternative currency systems "are economic geographies designed to conform to social and material norms which are morally acceptable to their administrators and participants in the attempt to bring about what are considered to be "progressive" social and economic change" (LEE et al. 2004: 596). Different types of alternative currency systems are, for example, time dollars, LETS (Local Exchange Trading Systems), regional currencies or barters. In 1999, LIETAER (1999: 51) had already identified more than 1900 complementary currency systems world-wide. At that time no regional currencies existed in Germany, but an alternative system was in existence called *Tauschringe*, i.e. groups of people who exchange goods and services without using money. Regional currencies started to appear in Germany in 2001.

GELLERI (2005) identifies a spectrum along which the different basic types of alternative currencies can be ranged. The spectrum is based on a number of opposing notions: for instance, global vs. local; commercially vs. socially orientated; centralized money creation vs. decentralized money creation; material vs. immaterial coverage; closed vs. open monetary system; electronic vs. voucher system; closed club vs. open members association. These opposing notions illustrate very well the diametrically opposite concepts of the currencies embedded in the world-wide financial system and the regional currencies based on a local to regional dimension, emphasizing social in addition to economic aspects.

This article examines regional currencies as one type of alternative currency in Germany and poses questions like: What are regional currencies? Where in Germany can regional currencies be found? What is the historical development of regional currency initiatives in Germany? What are the necessary conditions in order to implement a successful regional currency? But the main question is: Can regional currencies be an instrument to contribute to the development of rural areas in the context of globalization? This paper presents the results of surveys carried out in 2006 and 2007, as well as a small additional survey in 2008, on the situation of regional currencies in Germany.

2 Regional currencies – an introduction

Regional currencies are complementary currencies to the national currency or the Euro. They differ from these nation- or Europe-wide currencies by being only valid in one region. They cannot be used outside the predefined area. This monetary regionalization decouples the regional from the global economy. The purchasing power is kept inside the region, a regional market is developed and this causes a boom for regional products and services. These currency systems "are local circuits of consumption, production and multilateral exchange facilitated by the provision, distribution and use of an independent local currency" (LEYSHON 2004: 466). The regional or even local currency systems force the participants "to confront concepts of monetarization, value construction, appropriation and calculation and to work through their material consequences within the context of their locality and beyond" (LEYSHON 2004: 467).

2.1 Historical overview

Early types of regional currencies were already known in the Middle Ages, for example, the *Brakteaten*; then they re-appeared during the 1920s and 1930s. The so-called *Wära* was accepted in towns such as Erfurt and Schwanenkirchen in Germany. In Schwanenkirchen, the employees of a local lignite mine were paid partially in *Wära* in 1929; this was the biggest experiment with the *Wära*, which was officially prohibited in 1931.

Another notable experiment of the time was that of Wörgl in Austria, where in the 1930s a successful version of a local currency was implemented and worked for nearly one year. The mayor of the town of Wörgl, Michael Unterguggenberger, and the local council decided in 1932 to implement an emergency aid programme to increase the circulation of money in the town and at the same time enhance the purchasing power and decrease the high unemployment rate. The value of the vouchers, called *Arbeits-bestätigungsscheine*, which were used as a local currency, lost one percent of their value each month. To compensate for this depreciation, people had to buy scrips. The proceeds of this purchase were distributed to people in need. During the years 1932 and 1933 the municipality of Wörgl initiated several employment programmes, paying with the local currency. As a result, the local economy increased and the unemployment rate decreased. In 1933, the Austrian Central Bank prohibited these vouchers as they were in conflict with the sovereignty of the state in currency matters (cf. LIETAER 1999; SIKORA and HOFFMANN 2001: 131-134). SIKORA and HOFFMANN (2005: 82) argue that the example of Wörgl disproves the viewpoint of Silvio GESELL, the theoretical economist and founder of the *Freiwirtschaft* (free economy), who sees interest rates as the main problem of the capitalist financial system and is often quoted in relation to the theoretical framework of regional currencies. SIKORA and HOFFMANN (2005: 82), however, point out that unique problems (or times) require unique solutions.

After decades without any regional currencies in Germany, a new one represented by the *Roland* in Bremen was implemented in 2001.

2.2 Modern regional currency systems

Regional currencies can be characterized by two different sets of formalization, i.e. the currency system and the communication system.

As far as the currency aspect is concerned, most of the new regional currencies are *Schwundgeld* (depreciative currency). They are limited in time, so have a negative interest. This enhances the circulation of the regional currencies and therefore increases the volume of business in the region. Circulation fees from the negative interest and costs of redemption are used for grants for social non-profit projects inside the region and also to cover the administration costs of the regional currency projects (e.g. printing costs, marketing, sometimes also staff costs).

RÖSL (2006: 8f.) categorizes depreciative regional currencies in Germany into three groups:

- *Markengeld* (stamp scrip),
- *Tabellengeld* (table money), and
- *Ablaufgeld* (expiry money).

Markengeld typically loses 2-3 % of its value every three months. Their regular period of circulation is three months with an extension option for a total of one year. At this point, if not sooner, a further 5 % of the nominal value becomes due when exchanging back into euro. As a rule, the notes, like the adhesive stamps, are financed against the sale of euro to the issuing body which either keeps them in safe custody or invests them in an overnight money account bearing interest. *Tabellengeld* and *Ablaufgeld* also lose their value by special forms of depreciation. With table money, the value depletion is printed directly on the note, so the exact value of the note is defined for each day, month or quarter. No additional stamps must be bought. Unlike this constantly depreciating currency, expiry money has a fixed expiry date in combination with a charge for exchanging or redeeming the note after expiring.

All three versions of regional currencies aim to increase the regional economic added value by enhancing the circulation of the regional currency and by discouraging saving or keeping "money in the pocket", as unspent money loses value.

The second characteristic of regional currencies is the communication system. Cooperation and closer links between companies and customers improve the regional market as well as the social capital in the region. By finding new regional economic linkages and relations (e.g. between a farmer and a local restaurant) new contacts and new lines of communication are established. Thus the social aspect holds a very important position in regional currency systems. The initiatives which

implement regional currencies are also a platform for communication between their members. Initiators can, for example, be student groups, business organizations, non-profit-organizations, local political elites or individuals or a combination of these.

2.3 Regional impact and regional development

Regional currency initiatives consider themselves as an alternative to the global economic system, which they think causes many current social problems like unemployment and social disparities. THORNE (1996) defines alternative currencies as an attempt at local re-embedding versus global dis-embedding, while LÖWER (2004: 29) describes them as "money of anti-globalizers" and FULLER/JONAS (2003: 56f) as "alternative-oppositional economic spaces … with distinctive social values and ideals". However, BODE (2005: 8) argues that alternative currency initiatives did not intend to reach a complete de-coupling of the region from national and global markets, instead their intention was to secure the region so that negative globalizing processes did not affect the overall regional economic basis. RÖSL (2006: 12) contends that a "system of this kind, which ultimately aims at regional insulation – if it exists for any length of time at all –impedes cross-regional trade without which a region cannot go on developing".

The initiatives follow a bottom-up-approach to strengthen the regional economy. LEE et al. (2004: 597) suggest that these alternative local economic systems show that "economic geographies are created by and for the people who make their livings through them". NORTH (2005: 225) argues that "localized attempts at developing alternatives are better at generating connections of solidarity and a network that has some depth such that capitalist practices can be more effectively resisted".

The aims of regional currencies include:

- to initiate and stimulate regional economic cycles,
- to strengthen regional identity and social cohesion,
- to safeguard jobs,
- to link different partners,
- to prevent or to diminish the outflow of capital from the region,
- to support charitable projects, and
- to strengthen participation (cf. BODE 2004: 84).

To implement a good regional currency system, the specific aims, visions and characteristics of the target group must be agreed upon in advance, but can be adjusted in case of changing circumstances. To attract potential members, the benefits for each individual willing to participate must be clear from an early stage. Moreover, the possible community supporting aspects should be made evident.

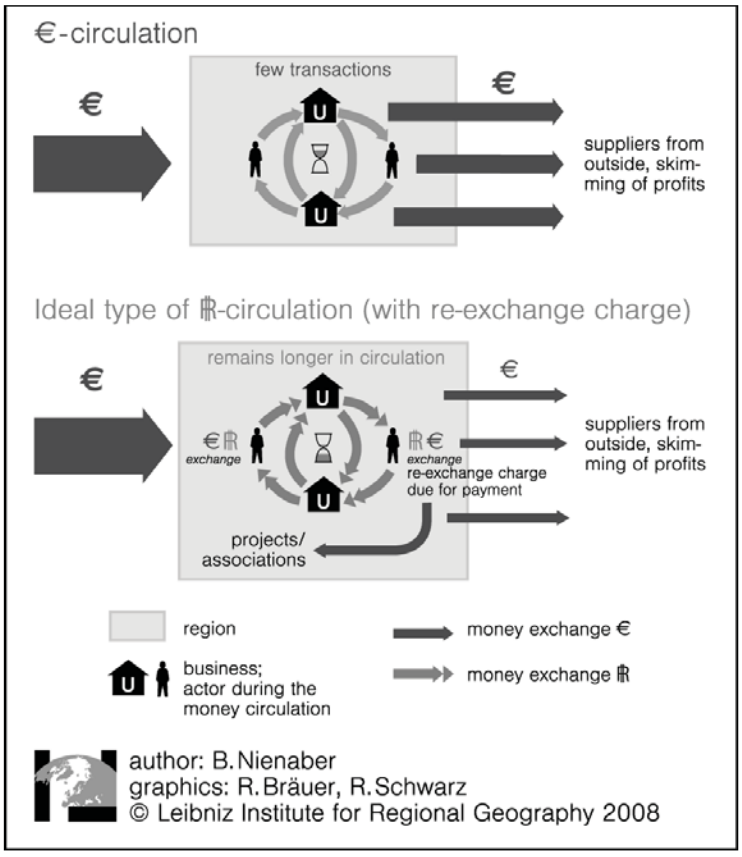
The first initiatives in Germany were mainly formed in peripheral rural areas where inhabitants felt disadvantaged in comparison with central urban

areas, and started to identify ways of helping themselves, based on their own strengths (ibid.: 111; KENNEDY and LIETAER 2004: 95).

KENNEDY and LIETAER (2004: 214) recognize that regional currencies present a way out of the so-called "monetary regional vicious circle". Economic decline leads to out-migration, then to decreasing private purchasing power, to decreasing purchasing power of local municipalities, to a loss of attractiveness of the region, to deteriorating infrastructure and services, to limited local control, to hardly any greenfield development, to a lack of qualified labour and thus to even more economic decline.

Regional currencies are considered by several authors as an instrument of regional development and therefore as a means to break the vicious circle. BODE (2004: 126) calls them an "innovative instrument of business development" and an "additional instrument of endogenous regional development" (my translation). She also describes the approach as "a monetary development strategy relying on endogenous potential" (BODE 2005: 4; my translation). Moreover, they have been praised as a "new approach to regional development" (MUSIL 2005: 183; my translation).

Figure 1
Intended stimulation of a regional economic cycle by a regional currency (ℝ)



Source: translated from SPRENGER 2006

However, depreciative regional currency systems have been criticized for their impact on regional development. They are sometimes even viewed as a disadvantage for structurally weak regions. RÖSL (2006: 15) argues that regions issuing this type of regional currency are often characterized by a low unemployment rate "where the "luxury" of *Schwundgeld* is evidently more readily affordable than in structurally weaker areas of the country." He also maintains that the costs for a regional currency are inevitably high and so it can be "quite conceivable that such costs will be borne gladly by some people if only on account of the fun of having paid for once in local currency" (ibid.: 16). So he concludes that regional currencies with negative interest will not have an important impact at the macroeconomic scale. This calls into question the success of regional currencies in terms of sustainable rural development.

3 Methods

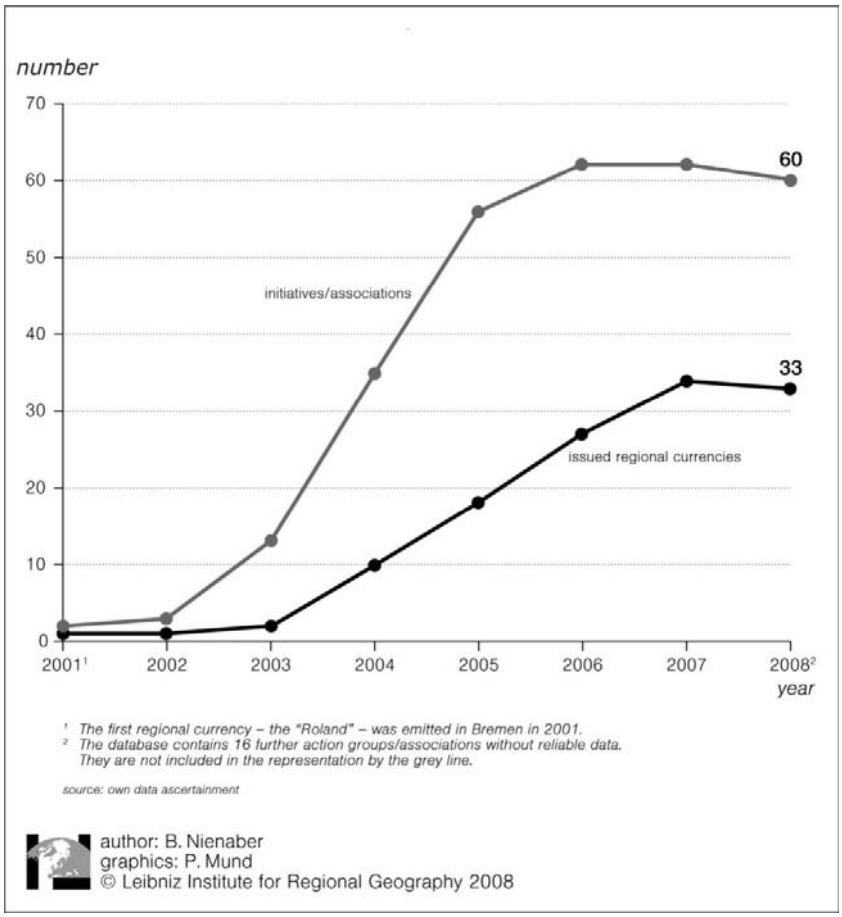
The surveys presented in this paper were conducted in 2006, 2007 as well as 2008, and used a number of different methods. First of all, an internet search was done in February and March 2006, in September and October 2007 – with a short up-date in April 2008 – in order to identify regional currency initiatives in Germany. To get more detailed information on regional currencies in Germany, telephone and email interviews with 61 regional currency initiatives and in-depth interviews with ten regional currency initiatives were carried out in 2006. The interviewed regional currency initiatives were very diverse. Some had existed for a long time as non-profit organizations and had added the regional currency to their profile, while others had explicitly been established with the intention to issue a regional currency. Some initiatives already had vouchers in circulation; others were just beginning to define their area and the way the regional currency was to be introduced.

Altogether 61 regional currency initiatives were analysed in 2006 and 75 in 2007. Of the latter, 58 had already been examined in 2006 while 17 were completely new. Three initiatives had dissolved or united with another initiative between 2006 and 2007.

4 Regional currencies in Germany – results from surveys

Regional currency initiatives have spread widely across Germany since the beginning of the *Roland* in Bremen in 2001. In March 2006, 19 regional currencies were issued in German regions, this increased to 33 by October 2007. In 2007, a further 40 initiatives were planning to issue a regional currency for their region. However, this development has somewhat slowed down as can be seen in Figure 2.

Figure 2
Initiatives and issues of regional currencies 2001 to 2008



Source: translated from NIENABER 2008

As the starting date of the initiatives was unknown to some of the interviewees, these figures consider only those initiatives where the interviewee was able and willing to communicate a date. The spread of regional currency initiatives and of regional currencies which are already in circulation has not been as fast as anticipated by members of the regional currency initiatives interviewed in 2006. At the time, 25 initiatives planned to issue their regional currency the following year. In 2007, however, only 14 more regional currencies existed than in the year before. So many initiatives had remained behind schedule in issuing a regional currency.

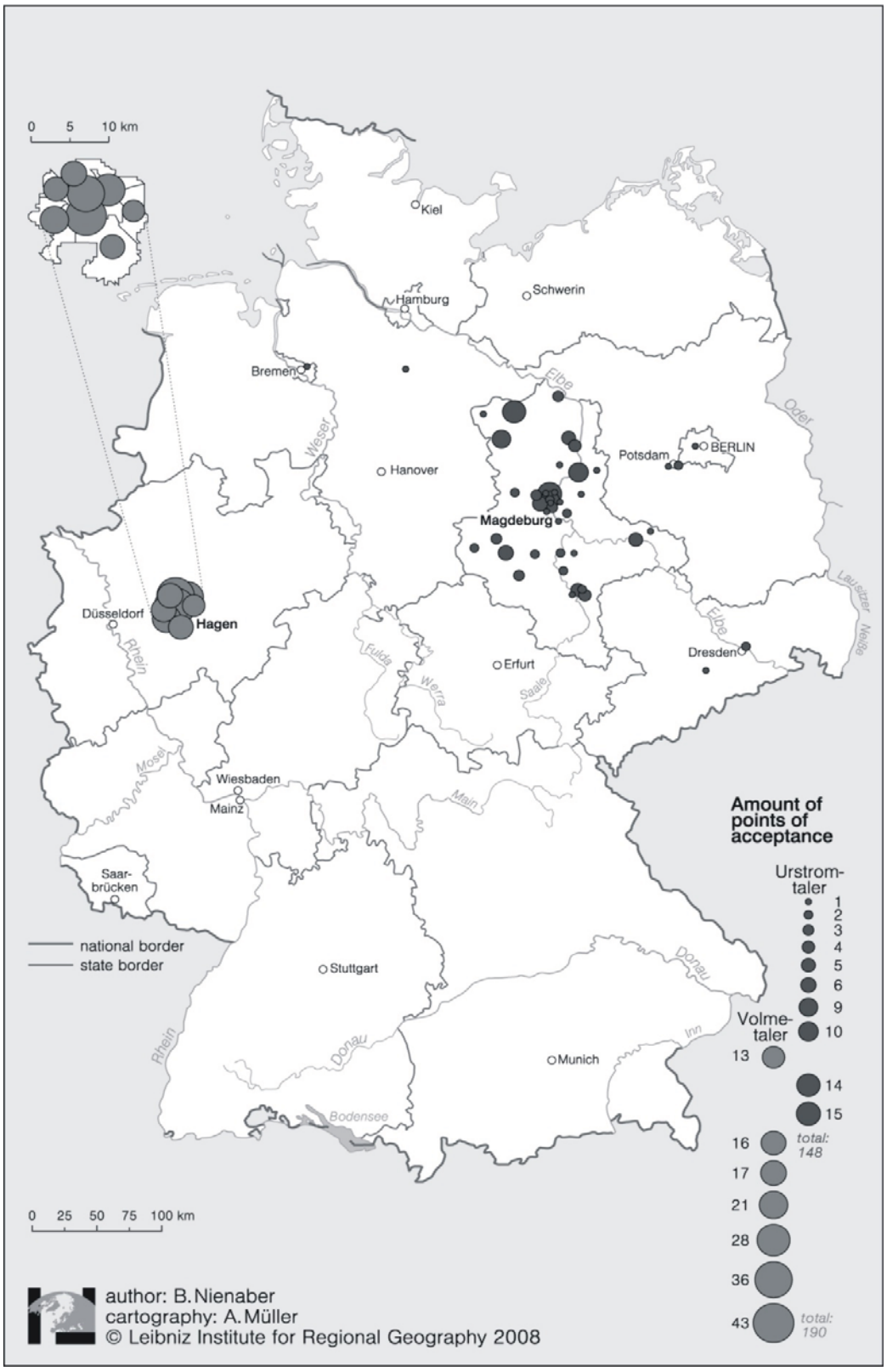
Regional currencies in Germany are very heterogeneous. The size of the area covered by a regional currency in terms of points of acceptance can vary from one municipality to one or more Federal States (*Bundesländer*) (cf. Figure 3). The regional currency initiatives have been launched by a variety of groups, including non-profit-organizations, students' projects, business associations, former LETS groups, business development agencies, municipal councils, local savings banks and/or individuals. In all cases the organization which realizes the project has to be trustworthy.

Often the name of the regional currency is an indication of the regional identity that it aims to strengthen – *Berliner* (Berlin), *Chiemgauer* (Chiemgau, a region in South-eastern Bavaria) – or it is a combination between the name of a region and a currency e.g. *Volmetaler* (River Volme + taler, a former German silver coin) or a word-play on counterfeit money e.g. *Havelblüte* (River Havel + dud).

Figure 4 shows the distribution of regional currencies in Germany as assessed by the 2008 survey: 26 regional currencies had a local to regional However, the map also shows that there are parts of Germany with clearly fewer regional currency initiatives than elsewhere (cf. NIENABER 2008; SPRENGER 2006). In Mecklenburg-Western Pomerania in North-Eastern Germany for example, only one regional currency initiative had been formed, which was still at a very early stage of formulating its concept. Moreover, North-Eastern Bavaria and large parts of Lower Saxony had no regional currency in circulation or planning.

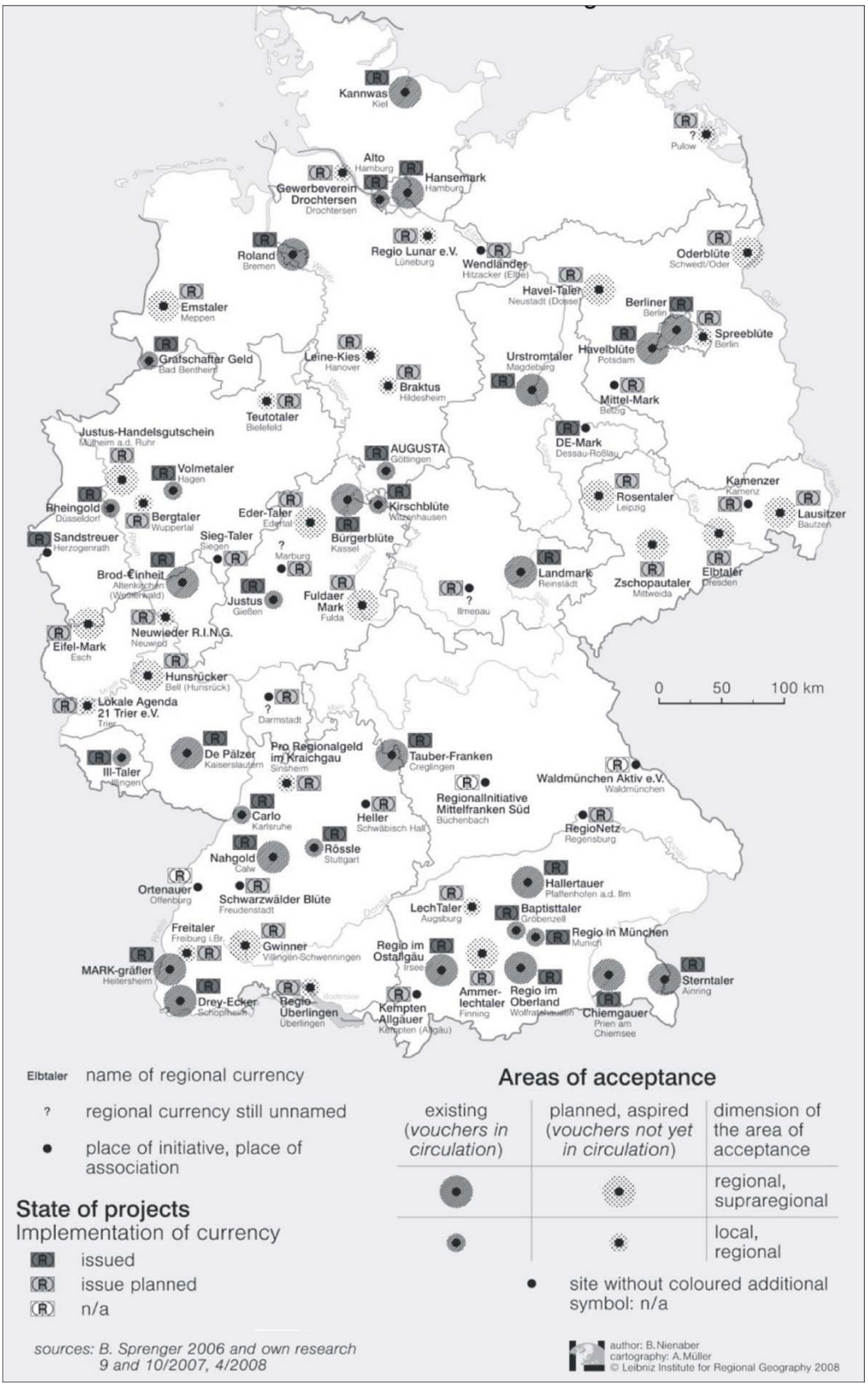
There is no clear correlation between regional currencies and unemployment rates or the gross value added: There are some regional currencies in East German regions with high unemployment rates and low gross value added, but currently, the most successful regional currencies (e.g. the *Chiemgauer*) are located in structurally strong regions with low unemployment and a high gross value added.

Figure 3
Points of acceptance of the *Volmetaler* and the *Urstromtaler* (as of March 2006, according to five-digit postcodes)



Source: translated from SPRENGER 2006

Figure 4
Regional currencies in Germany, 2008



Source: translated from NIENABER 2008

The interviews made it clear that regional currency agencies regulate regional currency systems differently, i.e. there are different guidelines for who can become a member and who can use the currency: In some regions every individual who wants to use a regional currency must be a member of the local regional currency initiative. In other regions only companies can become members, but customers can pay member companies with the regional currency. In still other regional initiatives, customers too can become members but this is not compulsory. And finally, in some cases both individuals and companies have to join the regional currency initiative.

The case when customers cannot be members of the initiative has to be viewed in a critical light. This membership system has an exclusive instead of an inclusive character, as people who are already at the margins of society are not easily integrated into such a system. The barrier is quite high which makes it more difficult for socially deprived persons to participate. In the meetings of regional currency initiatives which the author attended, a high proportion of academic or highly educated people took an active part. This confirms the statement of RÖSL (2006: 15) that regional currencies are a kind of "luxury" money.

After an initial boom, a phase of consolidation can now be recognized. Some regional currency initiatives have already merged or plan to merge to enlarge their areas and thereby increase the variety of products and services offered (e.g. *MARK-gräfler* and *Drey-Ecker* in the Black Forest). Other regional currency initiatives have already disappeared (e.g. *R€GIO* in Weimar). All initiatives have to achieve a critical mass in order to survive, so that merging with neighbouring initiatives is one possible option. The different processes, i.e. the introduction of new regional currencies as well the consolidation and amalgamation of existing regional currencies, are continuing and not yet completed. However, whether regional currencies will survive in Germany for a longer period of time remains to be seen.

5 Conclusions

Regional currencies can play an important role in a sustainable and integrated rural/regional development strategy. Yet, to achieve the aims of regional currencies that were identified in the introduction, several social, economic and ecological problems must be solved.

One social problem is that in many groups the leading persons are "lone fighters", who cannot stimulate co-operation as they are not able to work in a team. This seems to be one of the main reasons why regional currency initiatives fail. Other reasons for failure are exclusive rather than inclusive structures; this means that deprived people find it difficult to get involved. Only a regional currency initiative that inspires communication between participants has a chance to integrate people and foster inclusion. Such an initiative can help to overcome the anonymity of contemporary society, strengthen social cohesion, and encourage a formerly weak regional identity. Moreover, money that is spent on charitable projects can help

strengthen the regional community and in this way contribute towards a socially sustainable and integrated rural development.

An economic reason for a potential failure is that the system of regional currencies does not seem to work in structurally weak, non-diversified rural regions. So far, it can be said that, in order to implement a regional currency, a diversified economy is an advantage (cf. KENNEDY and LIETAER 2004: 95). If the economy in a region is not sufficiently diversified, parts of the economic cycle must take place outside the region, therefore there is an outflow of capital. Hence, a regional currency system is not always an economic incentive for an economically less developed region. But in regions with a diversified economy, this new regional financial system could contribute to an economically sustainable and integrated rural development by stimulating regional economic cycles, linking different partners and diminishing the outflow of capital from the region. However, it is still uncertain how many jobs could be saved or even created.

The environmental aspects cannot be evaluated on the basis of the research undertaken as they were not considered in the survey. They could be a focus of future research projects.

After discussing the problems and opportunities of regional currencies in general terms, the basic question of this paper needs to be answered: Can regional currencies be an instrument for a sustainable and integrated rural development in a globalized world? This survey has highlighted the following factors where regional currencies can have an impact on regional development:

- Regional currencies can have a high though indirect impact on regional development by strengthening regional identity in times of globalization.

- Regional currencies have a low or limited impact on the economy of certain regions as they work best in structurally affluent, well diversified regions where they can be seen as "luxury money". Moreover, the contribution to regional development is limited because of the practical problems of running alternative currency initiatives (for example "lone fighters" or exclusion of people).

- The ecological impact of regional currencies remains unknown as it was not analyzed in this study.

The development of regional currencies in Germany, and in other European countries, is a very dynamic process. So time will tell how regional currency initiatives will develop and whether they can be adopted in more remote regions as well.

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