Community resilience and agency within the rural assemblage

Márton Lendvay

This thesis is submitted in partial fulfilment for the degree of PhD

Department of Geography and Earth Sciences

Aberystwyth University

February 2018

Table of contents

Figures

Tables

Summary

Rural change and the ability of farming communities to respond and withstand change is a topic of ongoing concern in the current research agenda. 'Rural community resilience' is a concept that has become a core theme of academic, policy and lay discourses discussing dynamics of rural change, widely associated with community studies and allied to notions of social capital. This work reviews approaches to community relations developed within community studies and social capital scholarship, and suggests that the relational agency of the network ties might also be explored through the application of an assemblage approach. However, and unlike many previous approaches to community resilience that use the concept in a normative way and which understandably highlight agency of social relations, this research has been constructed in such a way that network ties established through day-to-day community practices are characterized both vital and far from passive. Developing this current line of thinking in rural studies, this project argues that more-than-social agency evoked by relations between human and non-human components of the rural assemblage is an important factor affecting community resilience. The empirical research feeds from two case studies and gathers evidence from two distinctive agricultural communities of Hungary and Wales, whilst also recognizing similarities in the context of globalization. It argues that rural community resilience lies in relations between the humans, the land and the agricultural commodities.

Acknowledgements

First and foremost, I would like to express my deepest gratitude to my supervisors Professor Michael Woods and Dr Jesse Heley of Aberystwyth University who guided me throughout the course of my work and encouraged me to develop a critical thinking during inspiring discussions. I would like to thank Mike for helping me make the strategic decisions required to carry out the work and for harnessing his enormous experience in rural research. I would like to thank Jesse for being my mentor, for the informal discussions and for encouraging me in times of despair.

I am also grateful for those scholars who shared their ideas with me at conferences and colleagues of those institutions that helped me publish findings of my work.

I would like to thank all those who contributed to this PhD by agreeing to take part in my research both in Wales and Hungary. My utmost thanks go to my interviewees and those who accepted my presence in the field. I would especially like to acknowledge the support of those farmers of Medgyesegyháza and the Cambrian Mountains who provided me with local knowledge and useful contacts.

This work could not have been completed without the help and support of my postgraduate colleagues. I am thankful for all the 'G1ers' and especially Sam, Justa, Katie, Dan and Rob for helping me feel at home in the United Kingdom. I would also like to thank the wider community of the Department of Geography and Earth Sciences and the staff of other departments who enabled my stay in Aberystwyth and fieldwork in Mid-Wales.

Finally, I would like to thank my family for the motivation and emotional support.

I. INTRODUCING THE RESEARCH

Scholarship on rurality has become increasingly concerned with how one can grasp the ongoing processes within communities and how these spaces and processes are subject to change. Conventionally, scholars have considered the countryside vulnerable, underdeveloped and exposed to external forces in comparison to urban regions and also rural regions have been regarded as lagging behind cities in such a way that they need to change to stay viable. At the same time, authors have always questioned whether development harms rural regions, and whether the traditional activities, essence and romanticised image of the countryside has been lost. Special attention has been given to the multiple factors driving change in rural communities, which therefore demand multi-faceted forms of resilience. As rural communities are connected nowadays into larger networks and they are open to the effects of decisions made from a distance. Woods (2005) described current processes of change as distinguished by pace and persistence and also by the totality and interconnectivity of change.

Two stories from Hungary and Wales show how such processes trickle down, become embodied experiences to farmers on a local level and threaten the function, structure and identity of European rural communities.

Mr. Tamás Oravecz, the chairman of the Watermelon Producers' Association stated that the extremely low wholesale prices generated by the Tesco cut-price sales campaigns put the future of the 11,000 Hungarian families whose members devoted their lives to watermelon production at stake. One third of the country's watermelon producing lands are found in Békés county where farmers produce the fruit on 2200 hectares. Public outrage in these communities was provoked when Tesco offered watermelon for a bargain price of €0.15 per kilo claiming that they were selling the surplus from an earlier wholesale purchase in their supermarkets. Watermelon producers gathered in front of the Tesco hypermarket in Budaörs to demonstrate against the retail chain's pricing policy, with some dumping and destroying fruit from their trucks. Mr. Oravecz told Békés

county news:

"Tesco, by decreasing its prices possibly saved a stock of watermelon worth about €1500, but at the same time it may have caused massive damages to the complete industry. Of course, the supermarket found the cheap watermelon to be a customer bait and a great marketing hook as if one enters the shop for watermelon, will purchase other wares as well. However, with this action it reduced the watermelon price on the wholesale market and depreciated Hungarian watermelon on the international market as well. On the long run such actions may trigger farmers giving up the unprofitable production, there won't be any Hungarian watermelon and we will have to rely on the imports" (Mikóczy 2016).

Meanwhile, 2000 kilometres to the west, in the farms of Wales farmers are worried that the modification of the direct payment scheme within Pillar I of the Common Agricultural Policy would split Wales's upland farms in two either side of the 400-metre contour line. The reform would create a ten-fold difference in payments between land above the 400 metre line, which would receive €20/ha, and that below, which would get €200/ha, meaning that 45% of Welsh moorland would be granted 89% of the funding supporting the moorland farmers, not taking into consideration land productivity. The Daily Post, the North Wales newspaper reported the reaction of a local farmer:

"'Cwm Y Geifr has always been a very productive holding, with above average entitlements, so we accepted we were likely to lose out,' he said. 'But to be told 75% of your land was worth 20 euros was a real kick in the teeth.' A Farming Connect consultation, arranged for upland farmers affected by the new 400m category, told the family what it already knew: that it would probably have to sell Blaen Cwm and the two sons would need to find part-time work" (Forgrave 2015).

In order to defend the interests of upland farmers against policies considered unfair, the farmers formed the group 'Fairness for the Uplands':

"For decades the uplands received more financial support than the lowlands due to the shorter growing season and higher associated production costs. It appears that our Government and other groups are trying to lower our payments even though the EU would prefer a flat rate. (…) Fairness for the Uplands (F4U) was formed in 2014 after the Welsh Government (WG) proposed to introduce a new Basic Payment Scheme (BPS) that would have discriminated against upland farmers. The group was formed and financially supported by farmers in Wales who felt under represented by the existing groups. In what was described as 'monumental' F4U overturned the WG legislation which did not comply with EU regulations" (fairnessfortheuplands.co.uk).

These are some of the most recent and well-documented stories from two otherwise very different rural communities located in the far corners of Europe that strive to survive in the face of shocks and abrupt changes. This thesis draws upon a range of perspectives from human geography in order to understand the resilience of these two case-study communities from Hungary and Wales.

This introductory chapter aims to give the reader an overview of the research background. It first of all lines up theories reviewed in the literature reviews and ultimately employed in the analysis. It then introduces the main questions the research targets and discusses the main objectives of the study. This is followed by a short description of the location of the study in order to set the scene and provide a context for the empirical sections. The introduction then explains the importance of and the rationale behind the study and demonstrates its authenticity and the contribution to rural geography. Finally, the introduction provides a thesis structure for the following chapters.

1.1. Research background

Rural change and the ability of farming communities to respond and withstand change is a topic widely analysed in the current research agendas from many aspects making it a seemingly new term used as a buzzword. Studying community change is not a recent development, however, as it has a long heritage and well-established literature. In a rural community context older community works discussed how a sense of community identity and the community structure establish community viability (Bell & Newby 1971). Later, social relations in rural communities were linked to the concept of social capital. By using this term commentaries have been made about the value of interdependencies (Bourdieu 1985), of support mechanisms, and the ability of the network connections (Granovetter 1973; 1985) in enabling community response (Flora et al. 2004).

More recently, the dynamics of current trends of rural change have often been linked to the notion of 'rural community resilience', a concept that has often been treated as introducing a new field of research focusing on crises, despite the fact that research targeting the struggles of rural communities applies similar to those ideas in use for decades. The application of resilience frameworks to rural change has also been associated with various aspects of society, many of which are tied to social capital, community initiatives, and various forms of governance. This thesis suggests that some of the fundamental bases of community studies and readings of social capital resonate well with ideas of resilience. The concept of resilience is introduced in more detail in Chapter Two and the literature on social capital is detailed in Chapter Three.

Focusing on dynamics of change, resilience is an ambiguous term as it contains traces of stability, resistance, an ability to withstand change and 'bounce back' and at the same time it means adaptability, an ability to transform and 'bounce forward' (DeVerteuil & Golubchikov 2016). When using the term 'resilient' writers have tied it to the ability to withstand change (Holling 1973), or to transformation (Pendall et al. 2010) and to certain expectations (e.g. Brown & Kulig 1996/97, Magis 2010, Skerratt 2013). Writers also denoted a qualitative value while they confined resilience to a very limited number of dimensions (resilience of what to what, see Carpenter et al. 2001 and Ludwig et al. 1997). This way, the concept of resilience has been treated in a way in which it often became imbued with normative assumptions and so became a politically charged term. Furthermore, without discrediting views exhibited previously, the existing conceptualisations of resilience often focus on planned actions of coping with (external) stressors (Darnhofer et al. 2010), as they deploy social capital as a tool to develop resilience (e.g. Amundsen 2012, Norris et al. 2008). These readings do not provide sufficient answers to how deliberate and policy-orientated actions may be intertwined with 'non-intentional' activities and natural processes embedded in daily rural life.

The research outlined within this thesis differs from previous works as it attempts to treat resilience as a concept primarily with an analytical value. By thinking in terms of resilience without a direct political imperative, we shall be able to understand why and how communities are able to bounce back and remain stable in certain ways but at the same time to transform in other directions. By doing so, we shall

also understand what are the features of and processes within communities that support the maintenance of function and identity, and what are those processes that support irreversible processes of change (the constant variable to which we compare whether transformation has happened is the function, structure and identity of the farming community and the farming culture most of all). Again, this research encourages the conveyance of more subjective analysis and critical discourse where resilience shall not primarily be regarded as a neo-liberal project. Instead, it suggests that resilience can be viewed much more as a system of processes and a phenomenon constantly reproduced by rural community members through unintentional, conflicting actions that often lack purposeful contribution to resilience and awareness of further consequences in community life. Whereas a number of writers (e.g. Skerratt 2013, Darnhofer et al. 2016), following reviewing the international literature, identified a spectrum of concepts and suggested overstepping conceptual gaps between reactive to proactive human agency or a structure-agency divide, the current research aims to make a step further. Here our aim is to think through how works on community studies, social capital and non-human agency can be tapped into by resilience thinking and how ideas that resonate with resilience thinking have been applied implicitly within the works of rural geographers before the concept became popular.

Unlike many previous approaches to community resilience, this research has been constructed in a way where network ties established during the daily community practices shall not only be considered as passive entities that embody community links and so build up the community. While this work reviews approaches to community relations developed within community studies and social capital scholarship, it suggests that the relational agency of the network ties should also be acknowledged. In order to answer the questions of this research discussed in the next section, assemblage theory is used as the analytical framework to investigate how relational network ties are established and how they have an agency that shapes resilience. According to the assemblage theory approach developed by Deleuze & Guattari (1988) and its interpretation by DeLanda (2006), components of the community assemblage are tied together by relations, which resonates both with ideas of resilience and social capital. Assemblage theory also offers an analytical view on how components may be

'unbuckled' from one assemblage and become constitutive parts of others, establishing new forms of rural assemblages. The analysis of the relations between humans and non-humans are supported by ideas borrowed from more-than-human, plant and animal geographies.

1.2. Rationale for conducting the research

The thesis in its current form is a product of a long intellectual journey following numerous transformations and repeated rationalizations of the project through a continuous iteration process and the comparison of academic literature and the real-life experiences captured by the empirical analysis. The research project stemmed from many years of interest in rural areas and issues such as competitiveness or sustainability. Starting in the 1970s but especially after the global economic crisis of 2008, the Anglophone countries have seen a boom in the application of the concept of resilience. The concept is not in use in Hungary, with no direct equivalent in either academic, policy, or lay discourses. From a developing interest in what might make rural communities in Eastern Europe more resilient it was originally proposed to investigate whether the socialist past and a special composition of social capital, namely, lower trust and willingness to cooperate and to take part in networks, may lead to lower resilience in Eastern Europe than elsewhere. This initial, rather naïve and positivist project plan for a comparative research has been reformulated numerous times. Although the excessively positive attitude of the literature on communities, social capital and community resilience – as will be explained more in detail later – to some extent justified such research, early on the unexpected findings suggested that a more critical view should be applied, especially concerning questions regarding inclusion, reciprocity and intentionality. Another turning point happened a year into the research at a conference, where during the questions following a presentation on the interests and struggles of different groups within one of the case-study communities, a member of the audience asked "who speaks for the watermelon?". After initial incomprehension of the question, a focus on the non-human components and their materiality was adopted and

turned out to be an interesting and important feature of a study on resilience and rural communities. This led to the abandonment of the positivist, policy-oriented approach of the research with a direct interest in the post-socialist conditions, and to the development of a more critical perspective on the dynamics of rural change by setting the study in a post-structural framework instead.

Looking at contemporary rural policies it is clear that one of the catchwords and buzzwords has been resilience in the past years (Brown 2014, Cretney 2014, Slater 2014). With the strengthening globalisation processes numerous reports have highlighted the hardship and irreversible transformation of rural communities and so resilience as a concept has gained popularity. This research provides a timely analysis of how the recent application of resilience theory can be brought together with the more traditional scholarship of community studies and social capital. The research therefore establishes a conceptual link between different fields of study; it revives earlier work and offers a path how they can be tapped into works with a direct focus on resilience.

Like so many works on community resilience, this project also acknowledges that aspects of social capital are important factors in determining the resilience of communities, although it urges a critical, more thorough view on social capital. As mentioned, the current work attempts to move beyond the overly positive accounts of social capital and think through both the origins and impacts of phenomena often labelled as social capital itself or some features of social capital in other cases. The rationale behind reaching back to some of the more theoretically driven works on social capital, and stepping forward with a focus on non-humans is that it answers some of the questions of agency: how are networks within communities established – or how are farming communities established at all – and how are the non-humans taking a role in shaping and reshaping the community. In this sense non-humans are ontologically not passive, secondary actors or actants; it is not purely the humans who aim to, and are able to reproduce or modify the non-humans surrounding them, but non-humans also establish and further shape the community members and the relations between people. Aspects often discussed both in works specifically focusing on community resilience and also in more critical, theoretically driven works may be explained and better utilized to understand how communities are able to change or respond to change. These aspects,

such as willingness to cooperate, sense of belonging, reciprocity etc. are treated as something 'good' and 'useful' to local population as a whole in many community resilience focused works. Thinking in terms of networks, identity, exclusion and inclusion and capacities – that are part of more critical thinking about social capital – are missing from these works or are treated as being formed by rational decisions of humans. In this work these properties of society or communities are strongly linked to how people are parts of networks or assemblages created through daily life that comprise both humans and non-humans. These properties will be what determine how communities operate, how they are fragmented, how they react to changes or – as we will see later – are the sources of transformation.

The rural communities are imagined here primarily as networks between human actors where various forms of social capital such as identity, leadership, inclusion and exclusion are visible. The network linkages and capacities of people are not equally distributed however. The location of people within the network and their abilities to take control of the system are highly influenced by the arrangement of relations they have with non-humans, these ties serve as anchors between humans and non-humans. Through these relations, non-humans take part in controlling some of these people; how people act and engage with other humans and how the whole network of humans itself is formed and is transforming and able to reshape depends on human and non-human relations.

Following the thread of thought from the previous paragraphs, another novelty of the study is that it questions how communities are made resilient in non-intentional ways: it offers a conceptual background to understanding how even those communities that have no awareness of their resilience or do not or cannot engage in community wide action are resilient in certain ways. This makes the findings of this research meaningful beyond the Western world and the Anglophone world in particular. The findings can be applied in settings where social capital has generally been described as low – and so resilience cannot be understood as an outcome of community engagement –, or where the bases of individual wealth and rights have not yet been recognised and protected in a democratic and peaceful environment.

The rationale for selecting rural communities in Hungary and Wales as study sites lies partially in the fact that they represent two markedly different settings within the same, larger European food production assemblage. By concluding some commonalities of these examples, the research findings have a potential to be transferred to other environments. Both of the study areas have been negatively affected by political policies, and by natural hazards in recent years, and so being able to maintain function and identity is of high importance to the communities. The study therefore aims to be beneficial to the local populations beyond policy-makers and the academic community.

The selected case studies were also fields that were accessible throughout the research. The site of the watermelon producing community of Medgyesegyháza is one that the researcher could easily engage with due to language proficiency and ability to establish personal connections easily, while the Cambrian Mountains in Wales is close to Aberystwyth University and thus the researcher could build on existing research connections and was easily acknowledged in the field.

1.3. Research question and objectives

The overarching aim of this thesis is to develop a more relational approach to rural community resilience by engaging assemblage theory to extend the scope of conventional analyses. Ideas discussed within early community studies and the social capital literature may offer some support to our understanding of how network ties establish communities, how ties carry qualitative properties, how identity formation happens, or how exclusion and the constantly ongoing internal struggles shape communities. This study aims to supplement the existing scholarship of rural sociology by exploring whether aspects of assemblage thinking could help to fill some of the gaps in resilience theory, especially the role of non-human agency in community resilience.

It is this background that serves as the basis of the following research the question:

What is the significance of relational agency in community resilience?

This research question may appear broad at first but it also allows 'subexploration' of individual concepts: it was tailored exactly to acknowledge the heterogeneity of social capital, agency, assemblage and resilience theories and approaches, some of which are used in this project as ways of addressing the overall question. This question does not directly refer to conducting a full assemblage analysis of the case studies, instead it calls forth exploring whether aspects of assemblage thinking could help to fill some of the gaps in resilience theory. In the question 'resilience' is treated not as condition or preferred state of being that can be achieved but a set of processes within which various forms of relational agency are triggered. These following subquestions support answering the main research question:

1) How has relationality within rural communities been addressed by rural geographers and sociologists, what are the strength and limitations of these relational approaches?

2) How do relationships within the community contribute to resilience and what are the limitations of looking at cooperation through readings of social capital?

3) How do the identities and subjectivities of humans emerge from their social relationships?

4) How do relations to the land contribute to the territorialisation of the communities?

5) How can the agency of non humans within community relations be captured?

The subquestions are referred to in individual chapters.

1.4. Research location

Whilst the literature on resilience has often treated communities as fixed entities making them clearly bounded subjects of research, from a constructivist perspective, this study follows Edensor who noted that

> "*the ways in which the materialities and meanings of rural space are reproduced, consolidated and contested, along with the identities of those who*

dwell and move within them, can also be considered by examining how rurality is staged so as to accommodate particular enactions. It is through the relationship between the array of characters playing out particular roles, and the spaces in which they perform, that ruralities are routinely produced" (Edensor 2006, 484).

At the same time, Rival, cited by Wilson (2013), also demanded that the academic community should "question resilience theorists for a lack of attention to power relations, politics, and culture" (Rival 2009, 296).

The agricultural communities this research is looking at are relatively difficult to define. The communities in question follow a particular type of farming in a particular geographical landscape. Although they may be defined as a group of farmers who are associated based on place, historically these communities would have been very strongly aligned with the territorial community of the people who live there. One of the changes of the past decades was that these two categories have been disassociated to some degree, as the farming and the residential population have become less aligned. While there is still a strong identification of place in the community, the farming population is more spread out in a larger area and the residential population of these areas is far more diverse with many people living in the area not directly involved in agriculture.

Nevertheless, as the farming communities are most often, at least to some extent, associated with certain geographical areas (and so they can be considered communities of place), they are linked to a level of common interest (and so may be considered communities of interest) and at the same time they are defined by a structure and culture of production (and so may also be regarded as communities of practice) that result in functional identity. Communities and their members are best defined by the networks they establish, with high importance here of the local food production chains. The communities are also defined to some extent by the symbols they share - the symbols are often non-human objects or language, but they can also be the special network ties building up the community itself. It is the presence of a local social capital therefore, that creates a community. This research finds it especially interesting to raise Rival's above question in the context of the previous point, in order to investigate how

communities are assembled and stabilised, as well as how they are able to change through the power relations produced within a community assemblage.

Following these principles, this research is based upon the empirical analysis of two rural communities of Europe. The watermelon producing community of Hungary is located in Békés county the South-eastern corner of Hungary. The community emerged out of the surrounding agricultural area the in the early 1980s as a large number of family farms in the nodal town of Medgyesegyháza and neighbouring villages began supplying both domestic and foreign markets on an industrial scale. The area gained an identity marked by the annual watermelon festival but a specific form of community structure also developed new social properties including the appearance of a large number of seasonal labour and a structure of a local supply chain. In recent years, partially because of the material properties of watermelon, the farmers have experienced economic hardship from year to year and community wide engagement was initiated in order to keep the watermelon culture viable.

The second case-study is located in Wales in the uplands of the Cambrian Mountains. This community is engaged with lamb rearing and is also comprised of family farms scattered around in the uplands and the adjacent valleys. In historical terms this is a farming community with a longer heritage than the Hungarian example – farmers trace back their ancestors up to seven generations on the same farm. The upland farming culture also attracted the appearance of local community practices that are tied to the specific land properties and the community is focused on a type of lamb with unique material properties, the Welsh mountain lamb. In recent years changing farming regulations began have arguably jeopardised the upland farming community by decreasing subsidies and drastically reducing the number of lambs. As in the Hungarian case, community action has also emerged to enable farmers maintain production.

1.5. Thesis structure

What follows within this thesis is a comprehensive literature review divided into two sections. Firstly, Chapter Two addresses a critical analysis of rural community

resilience discussing the origins of the concept, the approaches applied to various understandings, the fields of debates that emerged in the past years in both academic and policy domains and so does the review venture into identification of research gaps. The conclusion of this chapter is that resilience can be used as an analytical tool to understand how and why communities are able to withstand certain changes and transform in other ways. In this sense resilience is not a normatively charged term but the researcher needs to pin down what the structure, function and identity is that shall be maintained in order to define a level of stability.

Following this review of the literature concentrating on resilience, Chapter Three discusses how this knowledge can be related to how community relations have been addressed by rural geographers and sociologists and have been discussed within the wider context of community studies and scholarship in social capital. Beyond acknowledgement of the many approaches applied within these fields, this chapter thinks through the strength and limitations of these relational approaches and suggests that rural communities can be understood as constructed from networks that include human and non-human relations. Chapter Three aims to answer the first subquestion of the thesis.

Following these two chapters of literature reviews that serve as a justification for applying an assemblage approach to rural communities, Chapter Four establishes how assemblage theory and its interpretation of DeLanda may help us move beyond social capital and serve as a theoretical framework for empirical analysis, with special regards to the role of non-humans in relational agency.

Chapter Five introduces the case-studies in Hungary and Wales that are used in this thesis to test and illustrate the connections between concepts. The mixed methods data collection (semi-structured interviewing, participant observation, document analysis), ethical considerations and the data analysis and the interpretation methods applied are discussed in details.

Chapter Six is the first section discussing empirical data as it provides a background to the social processes, the pressures and community actions within the two case-studies as it reaches back to the concepts discussed in Chapter Three. This section shows how human relations may result in different forms of cooperation in practice.

This chapter argues that social cooperation as a form of relations is a key theme and, as the first of four empirical chapters, starts thinking through what social relations exist between the farmers within these communities, and how is cooperation exercised in ways which help to extend community resilience. The chapter concludes that applying a purely social capital approach has limitations as the multitude of community relations and their capacities cannot be fully unpacked. Chapter Six answers the second subquestion.

The following three empirical chapters gradually build up the rural community assemblages by discussing the roles and relations of humans, the agricultural land and the agricultural commodities as non-human actors that are considered as the main components of the assemblages. Progressing from Chapter Seven to Chapter Nine these empirical chapters on the components are constitutively embedded in the specific literature on family farms, on land use, on non-humans, animal and plant geographies. The three components, humans, land and the commodities are deconstructed[1] to the material and expressive roles that establish their relations and render them as parts of networks with emergent properties that trigger agency either stabilizing or fostering a reshaping of the assemblage. These three chapters form a sequence in which assemblage theory – as interpreted by DeLanda – is unfolded step-by-step.

First, Chapter Seven is a transition chapter that does not explicitly take a DeLandean approach yet. In extending the relations humans have in a community, as opposed to Chapter Six and a traditional social capital approach, this section builds on relational geography problematising the identity and subjectivities people in the communities have: humans as part of a rural assemblage are constrained by some of their physical peculiarities and so are forced into networks. Although this argument is extended in the following chapters in the direction of non-humans, this chapter on humans highlights that the community and social capital are still main reference points of this study. Chapter Seven answers the third subquestion.

---

[1] Although this research acknowledges and is aware of the fact that the Derridean school uses 'deconstruction' as a form of textual practice that aims to demonstrate the inherent insatiability of meanings. In this project, deconstruction does not aim to follow the Derridean approach. Throughout this thesis deconstruction refers to thinking through how complex phenomena can be understood as the results of interacting components.

In this tenor to go beyond humans, Chapter Eight starts bringing in a way of thinking inspired by assemblage approach and thinking about territorialisation and reterritorialisation in particular. Following the particulations of the land, this chapter recognises that land is a component of the assemblage and that land itself plays a role in assembling and territorially arranging humans and non-humans such as agricultural commodities. Chapter Eight answers the fourth subquestion.

This argument of human-land relations leads into a discussion even more explicitly framed around non-human agency of these other components within the community assemblages. Chapter Nine is the most assemblage-driven chapter as it deploys some ideas of plant and animal geographies to capture the agency of non-humans within community relations. This chapter argues that human community networks may be directly shaped by the humans and non-humans and so they play a key role in how rural communities – that have a social structure, function and identity – are formed, stabilized and are able to transform, become resilient. This progress through the conceptual framework of assemblage ending with the discussion of the role of more-than humans locates the 'more than social capital' qualities lying within assemblage theory. Chapter Nine answers the fifth subquestion of the thesis.

The final chapter, Chapter Ten concludes the findings and provides a synthesis with the lessons learnt. The conclusions chapter rethinks the connection between the different concepts applied within the thesis. It highlights the additionality and limitations of applying an assemblage approach – that includes aspects of relational agency of non-humans – compared to those applications of social capital that focus on social relations only.

II. THE EMERGENCE OF RURAL RESILIENCE

The aim of this research project is to rethink the recently developed research agenda of community resilience and think through how the concept can be better explained and be situated in human geography with special regards to existing work on community studies, social capital and relational approaches. This chapter introduces the problem we are interested in: this is the problem of resilience, how has communities' respond to change been considered in the literature until now and what can make a community resilient. The chapter addresses a critical analysis of rural community resilience discussing the origins of the concept of resilience, the approaches applied to various understandings, the fields of debates that emerged in the past years in both academic and policy domains and so does the review venture into identification of research gaps.

Over the course of this review the literature on resilience – and more specifically community resilience – is critically analysed and explained. The review begins with an in introduction to the concept of resilience and provides an explanation to why resilience is an important term and why there has been such a special interest in research on and application of resilience in recent years. The second part of this review critically analyses and compares different approaches (developed following Holling [1973] and Garmezy [1973]) to resilience that have emerged both in academic and more policy-oriented circles. An aim of this section is to highlight the differences in approaches and to elaborate some of the points that became subjects of vivid debates in the past years. Although not overtly discussed in much of the literature on resilience and community resilience in special, the questions of scales, normativity, and awareness and intentionality are fields that are debated and that manifest in what ways we think of resilience.

The third section of this literature review builds on these but it is more focused on the specific topic of this research, and discusses the interpretations of resilience as it is tied to (rural) communities. This section concludes that while 'rural community resilience' is a timely and interesting concept, it has not been used in a consistent way

and there are a number of gaps in the literature beyond those already a focus point of more critical works.

The final section concludes the main messages of the review and serves as the basis of the following chapter, Chapter Three, which elaborates how the other two core concepts, rural community and social capital can be understood and applied in the empirical research.

2.1. Situating resilience

Resilience thinking, understanding a system's capacity to absorb disturbances so as to maintain its original function, has become a feature of rural geography in the 21st Century. Crises have always hit rural regions and the post-2008 crisis is just one of a series of socioeconomic disruptions affecting places, spaces, and systems. This crisis, however, emerged simultaneously with other risks, coupling "a deep economic crisis with a perceived threat of an imminent ecological crisis, above all because of climate change" (Hudson 2010, 12). The intertwining of environmental and economic risks has strengthened interest in resilience as an object of research. This research agenda has embraced research on economic instability, environmental sensitivity and other potentially profound domains of transition (Scott 2013). Resilience has been considered much more than a property, a phenomenon, or a subject of research, but it became a tool of governance where costs are pushed off the state and onto private sector and communities. As White & O'Hare (2014, 947) put it, resilience is "a conveniently nebulous concept incorporating shifting notions of risk and responsibility bounded within a reconstituted governance framework" what, as they say, makes it "the perfect symbol of its time".

This 'nebulous' concept itself is a boundary object (Tierny 2015) – an idea or term that enables communication across disciplines and that can smooth the way for collaboration (Star & Griesemer 1989). Such boundary objects establish links between the scientific and policy domains (Cash et al. 2003) and their usefulness lies in the fact that they "allow people from different fields to work together without first having to

settle disagreements about exactly what a concept or idea means" (Tierney 2015, 5). However, the various subjects employing the concept and the public interest in the solutions offered by 'rural community resilience' generated a demand for translation between different fields of study and the public, toning down the academic jargon it was bound up in, making it suitable for mass public use. In turn, its growing popularity in the public sphere meant that its application generally became less scientifically rigorous and specific.

At the same time, one may question what the added value is of introducing a new concept. Does resilience really have a different meaning to resistance, vulnerability, stability and especially sustainability, which are all anticipatory properties, and are basically inherent characteristics or qualities of social systems that quantify the potential for harm, exposure to risk and sensitivity of system (Cutter et al. 2008)? The recent success of the notion of resilience is beyond doubt due to the emergence of a 'post-sustainability' discourse, which admits that the ideal of sustainability – which argues that sustainability can be achieved by a one-off fine-tuning of systems – has failed and shocks and stresses we cannot prepare for will always occur (Ludwig et al. 2007, Cote & Nightingale 2012). In this sense, resilience suggests that we can turn the situation to society's advantage through a series of small shocks: not destroying the complete system in question can help develop further resistance and resilience. This is clear if we look at the adage that "what doesn't kill you makes you stronger" already prominent within community resilience research (e.g. Gerrard et al. 2004). Conceptualising the difference between sustainability and resilience is not an easy one (Ludwig et al. 1997), and the distinction has not attracted sufficient academic attention until now. In his work on the dynamics of sustainability, Stirling (2008; 2014) regards durability, stability, resilience and robustness – as dependents of the temporality of change and the potency of action – as necessary but individually insufficient dynamic properties of sustainability. Therefore, we can identify resilience here as a component of sustainability.

Resilience is not tied to communities of the countryside and does not inherently have any rural or even geographical characteristics or qualities although it is implicitly relational. According to Scott (2013), within social science and public policy, a wave of

research has emerged since the turn of the Millennium that applies the concept of resilience to disaster planning (e.g. Norris et al. 2008, Manyena et al. 2011, Ross & Carter 2011), evolutionary economic geography (e.g. Hudson 2010), urban and regional studies (e.g. Gleeson 2008, Pike et al. 2010, Martin 2012), spatial planning (e.g. dos Santos & Partidario 2011, Davoudi 2012, Shaw 2012) and community studies (e.g. Magis 2010, Barr & Devine-Wright 2012, Skerratt 2013).

Within geography, specific interest has emerged in the study of the resilience of high-density population centres. Urban resilience embraces a wide array of studies including but not confined to combating the effects of climate change, natural disasters, terrorism and military operations, epidemics, and infrastructural disruptions. Because of the large population hit by any single event and the many aspects of city life including leadership and the political, economic and financial functions under threat, urban centres have often been considered especially vulnerable in comparison to rural areas. At the same time, it cannot be understated that exactly the same concentration of such infrastructures and services mean that there is disaster mitigation infrastructure that may trigger a response in times of need.

'Rural' resilience directly connects peoples, economies and the natural environment they rely on, live on and make their living off. Cheshire et al. (2015) found it important to highlight the distinctive characteristics of urban areas, and calls for a different approach to rural resilience that takes into account the effects of resource dependence, monocultural production, more general processes linked to dependence and exploitation, coupled with climate variability, processes linked to globalization such as industry closures, demographic changes such as depopulation and aging followed by service withdrawal, and more sudden disasters such as bushfires, floods, droughts or diseases. Citing Morrissey et al. (2007, 120) Cheshire et al. (2015) highlight that exposure to events related to extreme weather conditions and possible trickle down effects in agriculture following a single event are characteristic of rural areas to the extent that we may say that rural population faces natural disasters "on a more or less continuous basis". It is not clear, however, if such constant threats shaped rural communities in a way that they developed some form of immune system to respond to certain disturbances.

30

Although there is no single definition of resilience, one could consider it 'a system's capacity to absorb disturbances so as to maintain its original function' as put at the beginning of this section. This definition could be widely accepted as it is formulated in such a vague way that it could incorporate the many appearances of such a phenomenon. Without specifying the exact subject or the involved forces and without adding any judgment about the process, such a definition could be applied to the many fields mentioned above. It is not of interest here to list or compare definitions but what is more important is to think through what approaches there are to resilience and how even the small nuances between different understandings may influence how the concept of resilience has been applied. The following review aims to reveal the tensions within the literature focusing on resilience and its goal is to set up a discussion on why resilience is a problematic term, especially when it comes to rural communities. The next sections give an overview of approaches applied in academic circles heading from simple to more complex views on resilience.

2.2. Conflicting approaches to resilience

Thinking about rural change and persistence has a wide heritage and long history in fields such as community development (Adger 2000), community health (Almedom 2005) and studies of resource dependency and sustainability (Marsden 2003, Smith & Marsden 2004), which means that more recent studies of 'rural community resilience' draws upon two markedly different strands of inquiry. Being situated at the crossroads of various approaches, the complex concept created a hybrid of ecology and psychology (Lendvay 2013a).

When reading the literature, it may be unclear to the inexperienced reader when and where works on rural community resilience originally appeared. Although there were two approaches to community resilience that evolved simultaneously in the 1970s from the fields of ecology and child development psychology, authors do not often mention this, applying only one of the two significantly different approaches present in the literature, or forgetting about the offshoots in a simplified history of community

resilience. Social-ecological systems (SES) and community psychology are two coexistent ways of thinking about change in rural regions and have many implications for how community, change and resilience are viewed. The SES approach emphasises that resilience is a process involving actors and forces located on and linking multiple scales, while the approach of psychology emphasises that what shall be considered resilience is coping and a constant adjustment of a single subject to a level of functioning considered as normal. Acknowledgement of the social-ecological system approach is much higher, with the majority of works claiming that the origin of resilience thinking lies in ecology (often also in those cases where writers speak of 'social' resilience, e.g. Adger 2000, Cote & Nightingale 2012), and authors acknowledge Holling (1973) as the founder of the resilience concept. Even those works introducing and comparing both traditions prioritise the ecology-based approach that may seem more scientifically grounded and deal with the psychology approach founded by Garmezy (1973) only secondarily. Interestingly, some works even go as far as to argue that resilience is a concept developed from social-ecological-systems theory, but then apply the approach derived from psychology (e.g. Maguire & Cartwright 2008). Nevertheless, many works combine elements of the two traditions, and some even make deliberate attempts to integrate the two approaches (e.g. Adger 2000, Berkes & Ross 2013).

As argued earlier, works on resilience have traditionally applied very different approaches that may have certain similarities while being very different in other dimensions. This means it is very difficult to give a clear, well-structured description of the development and main features of these understandings. Although we can tell a linear history of the way that the concept evolved, some developments return to earlier ideas, and others can be best described as 'mixing and matching' certain properties.

The critique of how the literature has treated the origins of resilience only partially lies in this confusion. There are also many references to resilience that do not fit either of the two approaches but follow from the lay understanding of resilience we might call a single equilibrium engineering approach – that is the ability to 'bounce back' – and therefore the following discussion focuses in turn on each of these three approaches. Opposed to the many instances of discussing the ecological tradition of

resilience first and then introducing the approach derived from psychology (e.g. Cheshire at al. 2015, Skerratt 2013), it is more reasonable here to follow a thread of thought developed from the various debates surrounding the concept of resilience. For this reason, it has more logic to first include the single equilibrium engineering approach, then the psychological approach and finally introduce the SES approach in my discussion.

2.2.1. Single equilibrium engineering approach

The simplest understanding of resilience applies an engineering or single equilibrium perspective when resilience is defined as the ability of a system to maintain its preceding equilibrium state after a disturbance (Holling 1973; 1996). Resilience here is measured by both its resistance to disturbances and the speed by which the system is able to return to equilibrium (Davoudi 2012, Scott 2013). It is described as an 'engineering' perspective because of the interest of engineers in the ability of materials to withstand pressure without breaking or changing shape – resilience – but this definition has been extended to natural disasters such as floods or earthquakes, or social upheaval, such as wars, terrorist threats, disease outbreaks and economic crises (Barr & Devine-Wright 2012). The faster the system is able to 'bounce back', the more resilient it is considered to be (Cheshire et al. 2015). The notion of a bounce-back to a steady-state – as Scott (2013) points out – has also been applied in economic and financial terms. The UK's 'quantitative easing' programme, for example, was designed to deal with shocks to the financial system through a short-term policy response with the aim of rapidly returning the system to the perceived 'normal' or pre-shock state. Pike et al. (2010) apply the equilibrium approach within the regional studies literature when they discuss the abilities of an economy to return to previous levels of growth, rate of output and/or employment levels after an exogenous shock.

The single equilibrium approach does not support a reflexive learning mechanism with feedback loops and reform and transformation is postponed following the crisis. The main concern with the equilibrium approach is whether the so-called

'normal system' is a favourable option at all (Davidson 2010) or perhaps exactly these conditions are the cause of risks (e.g. the global financial system; socio-spatial inequities and vulnerability to disaster [Scott 2013]). As Davoudi & Porter ask in their study of the volatility in housing markets:

> "Why would we want to return to 'normal' when what has come to be normalised (over-inflated housing markets, predatory lending practices, gross wealth disparities) is so absolutely dysfunctional?" (Davoudi & Porter 2012, 332).

From these criticisms emerge new questions of 'bouncing forward', reaching new equilibria and the normative dimension of resilience, which are dealt within the following sections.

2.2.2. Single equilibrium evolutionary approach

In contrast to equilibrium resilience, the concept of evolutionary resilience is based on the idea that the notion of equilibrium makes little sense because systems can much more be characterised by change, fluctuation, discontinuity and complexity than by stability (Berkes & Folke 1998). The drivers of change may not only be confined to external factors, but they may also be produced by internal pressures and spark slow-burn processes instead of abrupt shocks. Both Scott (2013) and Cheshire et al. (2015) quote Davoudi who – drawing on these concerns – conceives of resilience as "the ability of complex Socio-ecological Systems to change, adapt, and crucially transform in response to stresses and strains" (Davoudi 2012, 302).

This concept of evolutionary resilience is very well grounded in approaches derived from community psychology (Garmezy 1973, Kaplan 1999) that focus on the adaptive capacities of individuals and groups, and not only their ability to recover after a disaster (as with 'bounce-back' or 'return to normal' resilience) or their ability to follow a single development pathway ('evolutionary' or 'bounce-forward' resilience) (Scott 2013). Established in the 1970s (see Werner et al. 1971, Garmezy 1973; 1985, Rutter 1979) the origins of this approach lie within the field of epidemiology and child development with the application of social (psychology, sociology, education, gerontology) and natural (biochemistry, genetics, neurology) sciences. Resilience here

is considered as the accommodation to changing trajectories with the need for learning and growing through adversity (Masten & Obradovic 2008).

'Psycho-social' resilience theories were based on the experiences of the work of child-development specialists who found that the development of – what they coined – resilient functioning among high-risk individuals at an early stage is more prudent than treatment strategies designed to repair disorders (Luthar et al. 2000). Two pivotal concepts are subsumed within the term. Adversity – often referred to as risk – embraces the negative life events associated with adjustment difficulties that may derive from multiple sources such as violence in the neighbourhood, inconsistent or harsh parental discipline, poor impulse control or intelligence (Luthar & Cicchetti 2000). Positive adaptation, on the contrary, encompasses behaviorally manifested social competencies and matching state-salient tasks that are central in certain periods of the development but will remain key competences throughout the individual's lifetime and serve as the building blocks of future capabilities (Cicchetti 1993). The studies around the 'traumatised child' therefore were focused on the individual, the surrounding community they are located in and relations between the two that manifest themselves as the response and recovery mechanisms maintaining health and wellbeing in adverse situations (Ungar et al. 2008, Zautra et al. 2010). Later the emphasis of the field shifted from single events to more general processes and adaptability instead of adaptation (Rutter 1990).

Permanent adaptability became the centre of interest incorporating the adaptive capacities from a so-called salutogenic approach, a paradigm focusing on strengths and abilities instead of the weaknesses and disturbances (Antonovsky 1979)[2] . Those authors following this principle early on (e.g. Antonovsky 1996, Cohler 1991, Rhoads 1994) called for de-emphasizing the practice of viewing human development in a linear fashion while only concentrating on those individuals who exhibit problematic

---

[2] The term *salutogenesis* (from the Latin *salus* = health and the Greek *genesis* = origin) was coined by medical sociologist Antonovsky (1979) and describes an approach focusing on resources and capacity to create health rather than the classic factors such as risks, ill health, and disease. The key elements in the salutogenic development are, firstly, the orientation towards problem solving and, secondly, the capacity to use the resources available.

behaviours and instead believed research and practice should focus on strategies of coping with adverse conditions throughout the lifespan (Brown & Kulig 1996/97).

The constant adaptation approach is related to 'rural community resilience' in two ways. Firstly, following the thread of thought developed on the relationship between the individual and its changing environment, a strand of studies emerged by "rescaling psychological resilience from the body to the place-based setting of the community" (Welsh 2013, 3) including a strand of works based on Iscoe's (1974) discussion on "psychological communities". Therefore, by 'upscaling', the community complements or even takes over the role of the 'child'. Referring to English & Hicks (1992), Brown & Kulig (1996/97, 32) mention a *system-intransition paradigm* that explains evolutionary changes in the community system: "over time when stress is felt, interaction occurs between the internal and external environment through the *system's permeable border*". This can mean emerging interaction between different sub-groups within a wider population and a very strong connection is assumed between resilience and social capital, the glue that holds societies together.

Second, beyond psychology – and especially work on child-development, where resilience is considered as the accommodation to changing trajectories with the need for learning and growing through adversity (Masten & Obradovic 2008) – there is growing work on resilience where change is understood as something constantly present. Marsden describes ongoing restructuring within rurality as characterized by deeply embedded pressures and slow burn processes, when he writes:

> *"Increasing flows of goods and services, people and knowledge are challenging the traditional notions of rural embeddedness and continuity. For instance, increased residential, tourist and labour migration provide new opportunities and threats to rural social structures. Rural development, for instance, needs to be understood as a process that takes account of the mobile assets in and across rural space as well as its fixities. In addition, the logic of monopolising and centralising processes, economies of scale and critical mass still seem to damage the economies of rural communities, so that many rural areas face severe questions over their social viability and sustainability, despite the uneven growth of information and communication technologies." (Marsden 2009, 118).*

The vast majority of literature published recently considers stress as permanent, but the processes involved in these models are often not as visible and easily describable as

hurricanes, economic crises or even rising migration flows or fluctuations in employment. Rather, they are intangible, much less transparent, more blurred and complex. In this context, one cannot meet the request to quantify resilience made by Carpenter et al. (2001), but must understand resilience as a metaphor and preparation for meeting unexpected, never before experienced events.

2.2.3. Multiple equilibria ecological approach

The third distinctive approach to resilience, based on the *ecological* concept of resilience, was developed by biologists and is applied primarily in the field of social-ecological systems (SES). Indeed, until this very day the main practitioners of the approach – the Stockholm school – are primarily ecologists. This resilience concept includes some features of the previous two approaches, but it introduces peculiarities that have broader implications for its applicability. This approach recognises that resilience means meandering between different stages of equilibrium or alternative stability domains instead of returning to or following one single 'state of attraction'.

The SES approach is based on the idea that instead of focusing on only one subject, our object of reference is a complex system comprised of many interrelated components operating on different scales. This approach defines resilience as a measure of the magnitude of change a system can undergo and still retain the same controls on structure and function or remain in the same domain of attraction (Carpenter et al. 2001). This definition implies that the system possesses multiple equilibria where a change in the configuration or stability of equilibria leads to the phenomenon of bifurcation (Ludwig et al. 1997). According to the SES model, modifications on a lower 'faster' scale can lead to changes in the functioning of a higher 'slower' scale, and thus transform the whole system – this is the basis of panarchy and the four-phase adaptive cycle metaphor (where four phases are exploitation (r), conservation (K), release (Ω), and reorganization (α)) that are key heuristics of this approach (Gunderson & Holling 2002).

In his reaction to common mistakes appearing in adaptive systems analysis, Walker highlights:

- *"A system cannot be understood or managed at one scale, they are inherently multiscale and their dynamics are dominated by cross-scale interactions.*
- *Attempt to make a system very resilient in one way, at one scale, can lead to it becoming less resilient in other ways at other scales.*
- *Resilience is not about not changing. Trying to keep a system in one particular state, or protecting it from disturbance in an effort to prevent change, lowers its resilience. (…)*
- *Resilience is neither good nor bad. There are many examples of very resilient undesirable system states (dictatorships, salinized landscapes).(…)"(Walker 2012, 29).*

As visible, some of these properties of the SES based approach to resilience (e.g. many ways in which systems are considered resilient or the rejection of regarding resilience as an inherently good attribute) are opposite to those discussed earlier in the case of the other two approaches and these differences are detailed in the following sections. There are writers, however, who attempted to combine such different views on resilience. Neil Adger is perhaps the leading scholar to have applied the approach developed within ecology to social systems (Adger 2000; 2003; 2006). Adger initially analysed the dependence of communities on ecosystems and later included external social, political or environmental stresses and disturbances that groups or communities adapt to. He identified social resilience as an analogy of how societies work and does so by revealing the relationship between the two phenomena of social and ecological resilience (Scott 2013). Local communities therefore have also been described as embedded in nested hierarchies of scales, with policy corridors[3] representing the scalar interconnections between the community and the regional, national and global levels (Wilson 2013).

Current work in the fields of institutional economics, macroeconomics and political science also concentrate on analysing multiple equilibria systems, especially when focusing on regions that are stuck at a sub-optimal level of operation. This scholarship has adopted the terminology of evolutionary economic geography, focusing on the phenomenon of path-dependence that is caused by so-called lock-in effects, where outcomes from a single moment in the past have had a crucial impact on the

---

[3] According to Martens & Rotmans (2002) policy corridors are macro-scalar exogenous processes and pathways that shape human decision-making at multiple scales that influence environmental and societal transitions (i.e. structural political and policy-making related factors).

future: history matters (Martin & Sunley 2006, MacKinnon & Derickson 2012). Hassink suggests that this lock-in generally results from institutional tissues, which

> *"consist both of organizations ('formal structures with an explicit purpose', such as political administrations at all spatial levels, trade unions, large enterprises and business support agencies), and 'things that pattern behaviour'"* *(Hassink 2005, 523).*

Interestingly, ideas of the multiple equilibria approaches appeared in community psychology literature as some suggest that not only the single-equilibrium concept but also the multiple equilibria approaches to resilience may acknowledge human agency in responding to disturbances. As Pendall et al. (2010, 74) described this system of feedback loops as:

> *"Communities often perceive that they grow stronger from stressful experiences with adjustments to 'new normal' level stemming from single acute shocks, multiple blows over a short time, or chronic adversity."*

Pendall et al. also describe how the adaptive cycle model of Gunderson & Holling (2002) introduced earlier in this section may apply well to the study of regions (also see Fig. 1.):

> *"Starting with the exploitation phase, envision a region emerging from a period of ferment with a newly elected government, major leadership transition or emerging economic base. In this environment of high resilience, the region experiences new partnerships, alignments and agreements emerging from competition for ideas and power. Partnerships and arrangements that withstand the flux mature over time, accumulating resources, deepening legal and social arrangements, codifying rules and solidifying practices favouring the ascendant establishment. The region's greater rigidity, however, leaves it vulnerable to external or internal disruption, that is, less resilient. […] The region is vulnerable to a shock, such as the emergence of a charismatic opposition leader, the loss of an important local employer or a radical new way of doing things in government, corporate or civic life. Release comes when a triggering event - such as a natural disaster, transformative election, corruption scandal or economic crisis - ushers in political, social or economic instability. The old guard is turned out. In this highly uncertain time of rapid change and reorganization, actors and institutions jockey for position to determine winners, losers and the nature of new regimes and relationships. Resilience is high amidst uncertainty, positioning the region for a new adaptive cycle of exploitation, conservation, release and reorganization."* *Pendall et al. (2010, 77).*
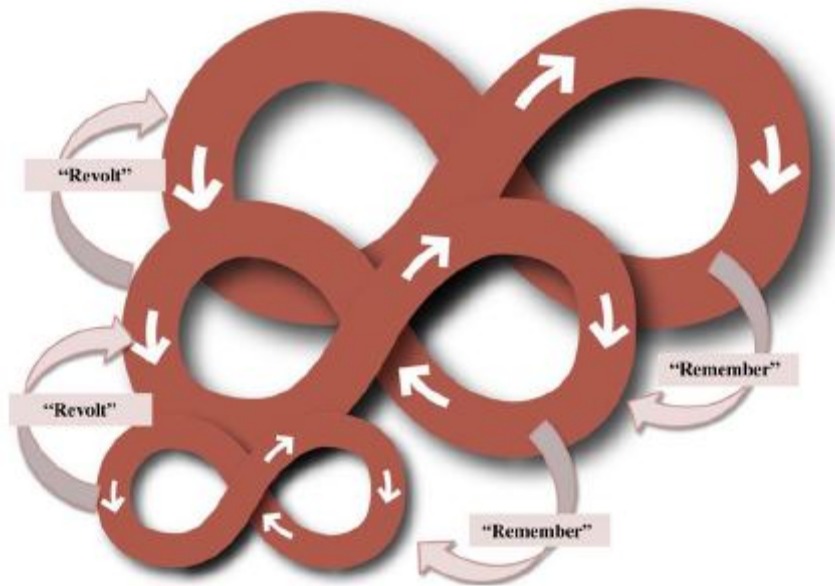
Figure 1
The interpretation of panarchy as cycles connected by feedback loops on different scales
by Pendall and colleagues (Pendall et al. 2010, 79).

In reality, however, it is very difficult to put to work the adaptive cycles approach in the social realm. Such models may be relatively easily applied to single real life events, but their analytical usefulness is limited to descriptive accounts, especially as it is very difficult to quantify more complex social events – the adaptive cycle, however, should be based on scientifically justifiable linkages between parameters of components within the ecological assemblage. What is also of concern in this example is the relation between the term 'resilience' and 'resilient' whereby it is not clear if they could be used interchangeably or the first would capture the whole process of transformation on a system scale and the latter would mean only a property of one element of the system, as Walker (2012) claimed. The way Pendall et al. (2010) use the concept is also problematic insofar as it treats resilience as an ability to change in 'good' ways only, but this judgment remains arbitrary and no information is given about the extent of the transformation the complete system should be able to absorb before completely modifying its structure.

2.3. Fields of debate derived from the different approaches

2.3.1. The scalar nature of systems

One of the debates about how the resilience of various geographical subjects shapes is placed around the question of the possible scalar nature of such subjects and the processes shaping them. Opposed to the engineering and evolutionary approaches to resilience described in the earlier sections – that consider the wellbeing of single subjects such as a material or a person – the systems within the focus of the SES approach are more complex. With higher complexity the higher the probability that within the system given processes only operate with specific periodicities and at particular levels, and such properties of systems may be described and modelled by placing components on scales. This approach within resilience literature originally appeared in that on ecology, but lately, a large number of attempts have been made to apply it to the analysis of human systems. Despite natural scientists having long understood the role of scales, social scientists have worked with less rigour and referred to a greater variety of definitions, operating within less well-defined hierarchical systems of analysis (Norton 1998). Their task is more difficult because unlike physical systems, social systems transform the rules of their environment and intentionally invent new forms of operation (Garmestani et al. 2009).

Thinking in terms of scales is a traditional way of thinking about relations in geography. Different approaches to scale highlight "social and environmental diversities" (Gregory et al. 2009, 664) or use it as a methodological framework (Gibson et al. 2000, Cash et al. 2006) but recognition of the social construction of scales leads to an even more intangible perception. Here the scale-making process is constituted by spatially and temporally uneven activities and processes (Swyngedouw, 1997) that are in a recursive relationship with the scales they produce and from which they simultaneously stem. This relationship has been described as:

> *"one aspect of the sociospatial dialectic: the idea that social processes and space – and hence scales – mutually intersect, constitute, and rebound upon one another in an inseparable chain of determinations" (Gregory et al. 2009, 665).*

Uneven development is a key driver in the production of scale in human society (e.g. evolving social classes), spatial inequalities in economic development can also be linked to the shaping of large economic systems through producing scales. According to Garmestani et al. discontinuous patterns have been identified in international economic data and

> *"cross-country growth exhibits behaviour that is best characterised through convergence clubs, in which the economy of the country is auto-correlated with the economies of other countries with similar growth" (Garmestani et al. 2009, 6).*

This results in a scale of multiple steady (or multiple equilibria we may say – see the previous section) states, and such processes can be observed on other spatial levels with different attributes (e.g. Gotts [2007] on global systems, Garmestani et al. [2009] on regions and cities).

Thinking in terms of scales as it was linked to fixed, geographically defined areas placed on a local-global hierarchy has been contested from the beginning of the relational turn (e.g. Massey 1994; 1995), and has been rejected by many writers who think in terms of flat ontology for example. Paasi (2004, 540) speaks of places as being "fluid and contested, positioned in complex ways in power geometries and experienced in different ways by different people" where scale is hard to conceptualise and make use of. Marston et al. (2005) go further in their paper and discuss the benefits of interchanging the conceptualisation of space from one based on scale to another one based on flat ontology. Referring to works on actor-networks, Deleuzean or DeLandaean approaches, Marston et al. (2005) claim that these are much more able to capture emergent spatial relations and the myriad socio-territorial configurations we encounter (a more detailed discussion about such relational approaches is provided in Chapter Four).

Nevertheless, thinking in terms of scales is a popular approach to spatial relations often applied in works on resilience. Wilson (2012b, 2) writes of the need for scholars to "factor-in multiple scales of resilience", from individual and household resilience through to resilience on a global level. Wilson posits that resilience pathways are expressed directly at the local level, and indirectly at higher levels; further, that the

local level acts as a mediator of external, larger-scale processes or actions, (such as globalisation) with tangible effects experienced 'on the ground'. The most common interpretation of scale-based human systems, however, remains that of the community resilience approach according to Masten & Obradovic (2008). Here, scales are built up of levels that are agglomerations of agents with relatively similar size, functions, and power. These levels become separate entities as they have their own decision-making power, and as they have 'a life of their own' they become scales at the same time.

In this hierarchical model, human-community relations are treated as an emergent phenomena. Brown & Kulig hint at the power of scales when they say "people in communities are resilient together not merely in similar ways" (Brown & Kulig 1996/97, 43). Families, for example, that are considered resilient are not necessarily an amalgamation of resilient individuals, as members are related to each other and their relationships change. In other words, they are dynamic (Martin-Breen & Anderies 2011). The implication of this is that scales can be produced and reproduced by altering the behaviour of the agents involved – this also means when we link scales to community resilience a normative language may be applied.

In political terms, nation-states are among the most important agents of a regional system, since, depending on their strength, states are designers of future pathways throughout the system by influencing all other scales. This is especially important when, according to Pike et al. (2010, 66), "the nation state continues to shape and control the levels of autonomy, scope and resources available for subnational institutions" in order to force its strategies on the other scales of operation. In extreme situations, this may even mean the transference of rights for decision making to a lower level in order to devolve responsibility for resilience. Some studies show, however, that resilience is intensified when participatory, deliberative multi-layered and accountable institutions govern resources (Cote & Nightingale 2011).

The scalar nature of systems' resilience therefore, stems from the relations between the components that build up the system. Systems that are built up of various actors and components – and such are rural communities and processes ongoing within them – may easily be imagined within scalar structures. In this thesis communities are regarded as complex systems constructed from components, however, in the empirical

analysis assemblage theory, a post-structural framework is applied that does not structure the elements of the assemblage in scalar systems. What this framework allows instead (see more in details in Chapter Four on the theoretical framework of this thesis), is a stronger focus on the relations, interconnectedness and often 'surprising' or 'unexpected' interaction between components of all kinds.

It is also evident that the debate around equilibria and the scalar nature of systems is strongly linked to the question of normativity, as seen in Walker and colleagues' final comment above. If a system is regarded as having only one equilibrium state, it is this equilibrium position that is most often deemed normal and it is assumed that any dislocation will sooner or later result in a return to the equilibrium state. Normative questions (discussed in more detail in the next sections), however, remain more complicated if multiple stable attractors drive the system, as it has to be decided which way of functioning shall considered more benign at a given time and place. It is generally either the 'current' equilibrium state of the system – if one is to follow a proactive strategy – or the last state that was considered as a good or normal one when a responsive strategy to resilience is applied. This, however leads to the next set of applications of the concept of resilience, governance, that is introduced later within this chapter.

Although the current discussion on the origins of resilience as a field of academic research may seem to be located far from the topic rural community resilience at first, it is important to clarify the origins of these inconsistencies as they will constantly reappear in the literature specifically focusing on community resilience in some form (as discussed in the second half of the current chapter). These differences in approaches sparked debates surrounding resilience in general and the resilience of rural communities that are analysed in the next sections and they are resolved to some extent towards the end of this chapter. Those tensions that remain unresolved are treated as sources of research gaps and have a high impact on how the empirical analysis of this project was constructed: this research does not explicitly think about resilience as structured in terms of scales.

2.3.2. Analytical views or normative assumptions

In the earlier sections questions of normativity have appeared already (Ludwig et al. 2007, Walker 2012) and the current section discusses why this is an important issue, how it has been considered by the literature and what consequences the question has on how community resilience has been and can be discussed from a normative point of view. When speaking about resilience, it has to be ascertained (Lendvay 2013b) how the concept is understood normatively (Brand & Jax 2007, Cote & Nightingale 2012). In short, this means whether being resilient – having ability to move towards or return to a former status – is good at all (and for whom) and whether stability and persistence or the ability to transform and adapt are the desired pathways. This is important as resilience can be analysed from a neutral, outsider's point of view, although most works dealing with issues of resilience include prejudgments about how things should operate. DeVerteuil & Golubchikov (2016, 144) described this demand for taking into questions of normativity and perhaps using it as an analytical tool as:

> *"Put bluntly, there is nothing inherently negative or positive about resilience, as it is entirely contingent on who is wielding it, and for what political purposes (Cretney 2014). Recognizing the value in resilience as an analytical tool, we offer insights into the possible entries through which the metaphor of resilience can be 'redeemed' from neo-liberalized connotation."*

This quote from DeVerteuil & Golubchikov highlights the arbitrary nature of considering certain pathways as good or bad and hints at another field of debates that emerges from this question: resilience has been often treated as a tool to govern communities and societies – as will be discussed later in this chapter. Ludwig et al. at the same time, caution that in any case, also when resilience is used in an analytical, descriptive and value-free way, even the most rigorous natural scientist will have to come to a decision about what system stability shall mean:

> *"To decide whether a system is stable or not, we must first specify what we mean by a change in configuration or loss of integrity" Ludwig et al. (1997, 2).*

In their example Ludwig et al. (1997) describe a raft floating on the river: by placing certain weighs on exact points of the raft in many cases the raft will be considered resilient and may move out of balance but will return to a steady, floating state.

However, at some point the raft may flip over due to the weigh and will no longer turn back by itself. As Ludwig et al. put this dilemma:

> *"If we don't care whether the raft flips over when weighted, then there is no problem of sudden loss of stability for the floating raft. We must also specify the types and quantities of disturbances that may affect the system." (ibid, 2)*

An interesting example of this inconsistency in the academic world about whether resilience should denote ability for stability or ability for transformation (as well), comes from how resilience has been illustrated in academic circles. The flyer of the 'Constructing Resilience' conference in Berlin of 2013 – focusing on sociology, political sciences, geography and planning – depicted a West Indian Ocean coelacanth fish that is a species well known to biologists as it has changed neither regarding its genotype nor phenotype in the past 300 million years. It is unusual to illustrate the essence of resilience by something that has not shown any trace of adaptation in the past. Staying at the example of zoology, on the other extreme Darwinian evolution and transformation of species is a good example of constant adaptation to changing circumstances in the short term. However, it is not the best example to resilience either in the sense that species have quickly disappeared over geological time due to complete transformation.

Therefore, it is clear that when talking about resilience, an unambiguous definition has to be given about what system stability is, and by what amount and direction of change shall the system or subject of analysis still be considered resilient. This often does not happen and works that are more recent seem to oversimplify the concept by ignoring the highly normative implications of the notion of resilience. Hopkins, (2008) for example, considers resilience itself as 'a desired state', which is a complete misunderstanding of the basic concept. Reflecting on such abuses to the idea of resilience, Joseph (2013, 51) even asserts that "although we can broadly agree on what resilience is, the conclusion must be that it does not mean very much".

By way of contrast to the descriptive or analytical applications applied by biologists, understandings of resilience applied in most social sciences, disaster management and even lay discourses on resilience, are prescriptive, always hinting at normative expectations, and there is a tendency to treat resilience as only having

meaning when it is tied to qualitative evaluation of outcomes (Skerratt 2013). Although they are extreme examples cited within literature on resilience (Ruhl 2011), it is worth pointing out that dictatorships, the legal system that supported American slavery, or regions with long-standing low economic performance due to 'lock-in effects' can be very difficult to change no matter how undesirable they might be.

If the concept of resilience is used in a rather normative sense and is "tied to the normative judgements relating to particular outcome" (Kaplan 1999, 31) the question emerges: what makes a certain state desirable? Understanding the normativity of resilience as a social construct influenced by moral and ethical ideologies can be the answer to this question. According to Ungar (2004, 342), a

> *"constructionist approach to resilience reflects a postmodern interpretation of the construct and defines resilience as the outcome from negotiations between the system and its environments".*

Cultural embeddedness is, therefore, a critical factor in defining what is conceived as resilience, and culture is a component requiring further exploration in the context of expected community processes around resilience. The negative examples of resilient systems mentioned before therefore remain extreme and disadvantageous only from the very popularly-endorsed beliefs predominant in 21st Century Western thought: that research should always remain objective and free of the researcher's normative judgments.

The examples mentioned in the previous paragraphs are simplistic and are surrounded by a particular historical consensus on what we regard as good or bad. Considering normative judgements is more difficult however when one is speaking about the resilience of highly complex social systems – rural communities for instance – that are built up of a large number of agents with different backgrounds, cultures, and access to resources. In such an instance one should keep in mind for whom resilience is promoted (Pike et al. 2010). Collective decision-making, built upon the reconciliation of the interests of employers, unions and public authorities etc. may apparently lead to different pathways from those of less democratic but more efficient decision-making, due to the exclusion of groups with less lobbying power. In theory, society-wide learning processes such as those connected to new social policies may still promote

resilience on a larger – national – scale even if they are regarded as unsuccessful and mistaken on a lower scale (Berkes 2004). Lebel et al. (2006) suggest that building resilience requires the inclusion of marginalised groups that are involved in the management of the system, thus promoting social justice and providing accountability on various scales, even if all responses may have negative externalities and impact on the livelihoods of some.

These normative issues may be especially prominent when top-down action is taken following disasters and in such cases, higher level goals should be overruled by ethical obligations (Cox 2012). Strong community cohesion, in general, solidifies the basis of the resilience building process (Shortall 2004); thus strengthening reciprocity, solidarity and fellowship should start with recognition of shared values, supporting community life and inclusion (Pike et al. 2010). The necessity for such difficult decisions that take into account immediately urgent priorities and long-term sustainability will remain unless resilience has been handled sufficiently (Martin-Breen & Anderies 2011).

2.3.3. Awareness and intentionality

Until now this discussion has been mainly about resilience as it is considered as a visible property of certain subjects, a process where we follow events, a concept that is revealed in some ways to community members, planners, researchers etc. Disaster readiness (Norris 2008), tackling anticipated disruptions (Adey & Anderson 2011), climate change mitigation and the 'strengthening' of resilience, are all a part of an *intentional* process of *coping* where *deliberate* actions are taken. However, the ability to resist change and maintain function and identity are also coded attributes of all systems. Communities are 'resilient', stabilising themselves and adapting 'naturally', that is to say without any deliberate, intentional or planned actions taken. These properties of resilience may lie in a structure, a state of mind, a behaviour pattern that all exist before a shock would hit the community – and such properties may even maintain system stability without anyone noticing. For example, rural community resilience may therefore not purely be interested in crises, shocks, disturbances and other drivers of

48

change present at a farm scale (Darnhofer et al. 2010), but much more on the ways in which community functions and operates, as well as how resilience is domesticated and embedded in everyday life. Once an agreement has been made about the limits resilience of any subject is tied to – what properties are to be maintained – and it has been decided what are the desirable pathways of change, resilience can be placed within the frameworks of policies.

2.4. Community resilience

The previous sections discussed the understandings and negotiations of resilience as it has been applied first, to various subjects and second, to a 'predominantly human environment'. These subjects were individual humans, nature or economy to mention just a few; in the case of the 'predominantly human environment' resilience has been applied in a normative manner often on a small scale to groups of people that were able – and sometimes responsible – to carry out deliberate, planned actions for the benefit of their own wellbeing. The following paragraphs concentrate on a specific field of resilience studies: those that focus on communities. This section first discusses how community resilience has been defined and later introduces some explanations appearing in the literature as to what makes communities resilient.

Studies on resilience of communities are very diverse in their aims, conceptualizations, or the literature they seem to follow. Many often cross-reference each other however, and there seems an agreement on the relevance and definition of the concept of an individual concept, a branch of resilience studies: community resilience. One of the very attractive definitions or descriptions of community resilience is developed by Magis who writes:

> *"Community resilience is the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise. Members of resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future" (Magis 2010, 402).*

Magis's description of community resilience has become a starting point for many works on the topic (e.g. Skerratt 2013, Amundsen 2012, Steiner & Markantoni 2013). Her definition pins down a few key properties of community resilience with "an environment characterized by change", "collective capacity" and "developing new trajectories" being the most important. In other respects the concept remains broad, vague, and open, which means that it can accommodate other components and be applied to a range of different circumstances and environments. The source of such changes and whether there are processes that communities would be unable to respond to remains unclear. In addition, there seems to be a contradiction within this definition as communities are simultaneously granted the capacity to influence change and at the same time move to new trajectories. Neither does the definition hint at the source of knowledge and power that allows community members to do so. Thinking through what this may mean to communities in practice and how they would fulfil the requirement of 'resilience', the feeling may evoke that either this understanding of community resilience would apply to the democratically elected leadership of a municipality or the board of some kind of community interest company that has the knowledge, resources and legal rights to intervene and take action. Hardly could it be applied, however, to communities of the second or third world or communities characterised by internal conflicts. This does not mean that rural communities in the second and third world do not perform resilience, but that they do so subconsciously by natural life-instinct and with a less forward-thinking outlook.

Magis herself cannot be regarded as a theoretician in the area of community resilience, as she is much more of a field-oriented practitioner. Interestingly, her definition of community resilience quoted above was published in an article of Society & Natural Resources, a journal not oriented towards rural social issues. Nonetheless, Magis's definition is so well formulated and contains so much potential for the development of the concept that it has become the starting point for many discussions of resilience in contemporary academia.

The following sections reflect on the strengths and shortcomings of the popular approach to rural community resilience that follow similar understandings of the concept. A more detailed account is given of how 'collective capacity' has been

understood as social capital, a source of community agency through which resilience can be performed.

2.4.1. Community resilience in policy-oriented literature

The earlier sections introduced the main discourse on resilience whereby it is a concept imbued with normativity and has been viewed as process of coping that is highly influenced by intentional actions taken by people and where community members act deliberately following consideration of their situation. This approach may easily brought together with governance in general and be incorporated into policies. The following sections discuss how resilience thinking has been embedded within policies either focusing on communities or policies that aim to operate by considering agency and capacities implicitly present in communities as resources.

Resilience has been linked to external factors within work claiming that exogenous processes determine the development of communities. This was visible in case of the broader approach towards rurality in the 1970s that considered the countryside as technically, economically and culturally peripheral. Wilson (2013, 308), for example, shows how policy corridors have been considered as "the sum total of cumulative policy actions at macro-scalar levels that influence decisions at community level 'on the ground'" as either malign or benign to the community and its resilience. Referring to Martens & Rotmans (2002) he adds that such policy corridors can be interpreted "as macro-scalar 'exogenous' processes and pathways that shape human decision-making at multiple scales that influence environmental and societal transitions" (Wilson 2013, 299). Structural political and policy-making factors could either be a solution or part of the problem facing community resilience. Wilson (2013, referring to Johnston [1996]) also identifies the state as centred around the national policy corridors even in contemporary global social organization and so he claims that policies continue to be tied to the nation states that emerge as a "key structural boundary within which political, social and economic decisions are taken that, in turn, 'trickle down' to community level" (Wilson 2013, 308).

A more nuanced approach has been proposed by Lowe et al. (1995) who regard exogenous models as "dependent, distorted, destructive and dictated" (cited by Cheshire et al. 2015, 17) and suggested an approach that shifted from universal models to mobilising locally available resources by the local community members. Therefore, more recent strands of community resilience research and practice have focused on local empowerment. Cheshire et al. (2015) highlight that networks, trust, reciprocity, willingness to cooperate, and the awareness and existence of coping strategies that foster adaptability are all endogenous features of communities that have become increasingly valued in the past decade. As opposed to the earlier narrative that tended to envisage resilience on a national scale and was built on statistics and indicators at this level, the focus of resilience building has undergone downscaling whereby local territories and local communities have become the site of intervention. Coaffee has described this rescaling process as one where "resilience is coming home and is nesting in the local area… to create a new, more community-driven, social contract between citizens and the state" (Coaffee 2013, 246). The resilience of rural communities has often been discussed in the context of the countryside's vulnerability to global processes and pressures, Cheshire et al. (2015) claim however that resilience building has been more sustainable when embedded in local, daily practices and supports preparedness beyond emergency situations.

This implies a downward rescaling, opening a discourse "that responsibilises risk away from the state and on to individuals and institutions" (Welsh 2013, 15). According to Joseph, the concept is genuinely suitable for neoliberal forms of governance and "despite its claims to be about the operation of systems, is, in practice, closer to a form of governance that emphasises individual responsibility" (Joseph 2013, 38).

As early as 1987, Bulmer had suggested that:

> *"in significant respects, 'community care' policies rest upon fallacious common-sense assumptions (…) As a result there is a vacuum at the heart of care policy which is likely to lead to ineffective or deteriorating provision of services, to the extent that care is transferred to 'the community'". Bulmer (1987, ix)*

This neoliberal attitude has appeared more recently in governmental plans, and the U.S. Homeland Security Council (2007, 32) for instance calls for "high-level organization and efficiency among multiple actors". According to Walker & Cooper (2011), the Council's documents treats the catastrophic event (natural, social or economic) as the systemic limit to public policy and state management and it is no longer the sign of occasional failures to predict, prevent, and manage crisis. Walker & Cooper suggest that the Homeland Security discourses demonstrate a search for:

> *"a "culture" of resilience (…) the culture of preparedness envisaged by the Department of Homeland Security sees no end point to emergency (…) What is resilience, after all, if not the acceptance of disequilibrium itself as a principle of organization?" (Walker & Cooper 2011, 154).*

The UK Government has followed a similar path. Its earlier governing party's agenda states "our reform agenda will empower communities to come together to address local issues. We will achieve this by giving new powers and rights to neighbourhood groups" (The Conservative Party 2010, 5). The 'Big Society' plan (Cabinet Office 2010) has been developed following this manifesto and in its framework on community resilience the Cabinet Office asserted its "commitment to reduce the barriers which prevent people from being able to help themselves and to become more resilient to shocks" and stated that

> *"communities (…) will have to look after themselves and each (…). Communities will also need to work together, and with service providers, to determine how they recover" (Cabinet Office 2011, 3).*

Similarly, Cheshire et al. (2015) give account of the Council of Australian Governments' National Strategy for Disaster Resilience (2011) that posited that:

> *"Fundamental to the concept of disaster resilience is that individuals and communities should be more self-reliant and prepared to take responsibility for the risks they live with … a resilient community will understand and have the ability to use local networks and resources to support actions required during an emergency and to support recovery efforts" (COAG 2011, 10).*

It follows the same thread by stating:

> *"There is a need for a new focus on shared responsibility; one where political leaders, governments, business and community leaders, and the notfor-profit sector all adopt increased or improved emergency management and advisory*

roles, and contribute to achieving integrated and coordinated disaster resilience. In turn, communities, individuals and households need to take greater responsibility for their own safety and act on information, advice and other cues provided before, during and after a disaster" (COAG National Strategy for Disaster Resilience 2011, 3).

This literature review concentrates on the trains of thought and arguments developed and presented in the academic literature on aspects and approaches to resilience. While similar examples about how resilience appears in policy and management documents in the communities of the case-studies could be cited, with reference to the discussions of the current sections, these examples are analysed in the first empirical chapter, Chapter Six.

It is a later section within this chapter that aims to introduce and analyse the discourse on transferring responsibility to communities and individuals through local empowerment (Skerratt 2013, Skerratt & Steiner 2013) in detail. Also, it is the following chapter, Chapter Three that is to provide a more thorough introduction into how the concept of community may be understood and made use of when thinking about resilience. It is worth however, to mention the possible 'roles' of the community as part of the current train of thought. When thinking about 'rural community resilience' a number of questions emerge pertaining to what we consider a 'rural community' to be, and what the function of a rural community is in making the countryside resilient. More precisely, the question is whether 'community' is: a) the subject of our enquiry and serves as synonym for a rural region, making it the site of certain events in say, an economic context (Pike et al. 2010); b) a metaphorical entity that shall be preserved in a changing environment; or c) whether it has more significance than this. Community has often been viewed in academic literature as an assemblage of interacting individuals (Bridger & Luloff 1999, Panelli & Welch 2005) engaging with one another through social networks that are key to personal well-being through acting as a social support system (Magurie & Cartwright 2008). In this context, community itself may help foster individual health and economic wellbeing so that the smallest entity of 'rural community resilience' is not the group but the individual that actually takes certain actions.

Resilience thinking has grown beyond the limits of academic and policy discourses, grabbing the attention of the public, especially local community and volunteer groups. A number of publicly available toolkits and guidelines (e.g. Colussi & Rowcliffe 2000, Hegney et al. 2008, Schwind 2009, Wilding 2011) have been published to support local communities and their inhabitants. As Tierny (2015) observed, resilience thinking has also attracted the attention of influential financial institutions and philanthropists. One such institution is the World Bank, whose Global Facility for Disaster Risk Reduction initiative calls for integrated climate change and disaster resilience approaches, building them into development programs worldwide. Tierny (2015) also highlights the Rockefeller Foundation's decision to create a managing director position that focuses specifically on resilience, something that is supported by Rockefeller President Judith Rodin's book (Rodin, 2014), which argues that resilience is vital for dealing with the consequences of urbanisation, globalisation, climate change and disasters.

2.4.2. Factors supporting community resilience

Works have often been engaged with exploring what factors support community resilience (e.g. Brown & Kulig 1996/97, Norris et al. 2008, Buikstra et al. 2010, Magis 2010, Ross et al. 2010, Amundsen 2012). Some of these factors identified in various studies were not or not only linked to natural or financial resources or personal abilities of individuals but instead to connections, and the properties of groups. Amundsen (2012) for example compares the findings of three publications discussing the factors important for community resilience and there are broad overlaps between the issues covered. Social networks, leadership, active agents, collective action, people-place connections, community networks, engagement among other components all clearly resonate with what we can classify as being strongly linked with the concept of social capital (a detailed account about social capital is part of the following chapter, Chapter Three) (Table 1.).

Factors important for community resilience		
(Buikstra et al. 2010)	(Magis 2010)	(Ross et al. 2010)
Social networks and support	Community resources (natural,	People–place connections
Positive outlook	human, cultural,	Knowledge, skills, and learning
Learning	financial, built, political, social	Community networks
Early experiences	capitals/resources)	Engaged governance
Environment and lifestyle	Development of community	Diverse and innovative economy
Infrastructure and support	resources	Community infrastructure
services	Engagement of community	
Sense of purpose	resources	
Diverse and innovative economy	Active agents	
Embracing differences	Collective and strategic action	
Beliefs	Equity	
Leadership	Impact	

Table 1

The factors important for community resilience (Amundsen 2012)

These policy-oriented works remain rather descriptive and think of resilience as a normative term, and do not provide a deeper understanding of the processes leading to the emergence of such factors. Although some of these writers speak about social capital explicitly, they do not clarify the direct link, the causal relationship between such properties of society or communities and their supposed outcome that is community resilience.

In practical terms and from a resilience point of view, Norris et al. (2008) are an exception as they have given a detailed description of how social capital may be understood and put to work when performing community resilience. Social capital has been viewed as a resource, or more properly as a set of resources (grouped under the three clusters of network structures and linkages; social support; community bonds, roots, and commitments) that can be deconstructed to community capitals. Although Norris et al. (2008) approach resilience purely as a post-disturbance response or disaster resilience, their description is comprehensive and gives practical information on how social capital may be imagined as a tangible addition to community resilience in other settings. The following section describes how social capital has been explicitly linked to

resilience but its definitions and use in community studies is discussed more in detail in the next chapter.

Norris et al. (2008) established a framework in which community resilience emerges from a set of networked adaptive capacities. They identify certain resources but also stress the dynamic attributes (robustness, redundancy, rapidity) of these resources as the foundations of resilience and they term the combination of these as "adaptive capacities". Four primary sets of networked resources have been identified by Norris et al. (2008) on the basis of their literature review: Economic Development, Social Capital, Information and Communication, and Community Competence that are neither orthogonal nor synonymous.

Their paper builds on the works of the well-known theorists of social capital, although seldom do they give direct reference to the literature described in the earlier sections. Their approach to social capital stems from Bourdieu and Lin who understand the concept as the aggregate of the actual or potential resources that are linked to possession of a durable network of relationships (Bourdieu 1985) and claim that individuals invest, access, and use resources embedded in social networks to gain returns (Lin 2001). At the same time, referring to Wellman & Frank (2001) and Kadushin (2004), they mark the major debate within social capital literature as whether social capital should be conceived as an individual, collective, or multi-level asset and the questions surrounding the roles of self-interest and status attainment and the extent to which social capital is created through investment by people actively aiming to increase 'their' social capital.

Norris et al.'s (2008) detailed account of the link between community resilience and social capital highlights three aspects: Network Structures and Linkages, Social Support and Community Bonds, Roots, and Commitments. First, they discuss the structural configuration of the network, asserting that the demand to involve new knowledge and resources in times of need is secured by accessing the required actors and agents following an approach to social capital that has also been discussed in detail by Burt (1992). Norris et al. (2008) find that within a resilient community overlapping networks are characterised by reciprocal links and frequent supportive interactions that lead to an ability to form new associations and cooperative decision-making processes.

To do so, – referring to Longstaff (2005) – Norris and colleagues claim the desired structure of the system is networked as opposed to hierarchical, where disaster response 'keystones', 'hubs' or 'superconnected' network nodes tie different networks to one another. Regarding network density, they find that overly centralised and dense networks carry an excessive level of complexity and uncertainty, adding that with higher density the efficiency and resilience of hubs decreases. Longstaff explored the tendency of individuals, groups, and organisations to form tightly connected groups to resist danger. The phenomena of 'tight couplings' occur when the change in one component takes the lead in response and hinders other agents' attempts to take action. According to Longstaff, these configurations will not always be malicious, but tight coupling can result in premature solutions and increase danger as there is too little redundancy in connective functions, which might mean that when the hub is compromised the entire system is vulnerable to complete collapse.

On the contrary, a more beneficial structure is a 'loosely coupled' system that may be more successful at responding locally. Loosely coupled organizations may better take into consideration local needs, employing the right resources while they do not require the whole system to respond. Norris et al. (2008) cite Gillespie & Murty (1994) who established that two types of 'cracks' or structural failure are common in disaster mitigation services when resilience should be provided by a network of cooperating agents. Gillespie & Murty defined both 'isolates' and 'peripherals', organizations with essential services that do not interact with the rest of the network properly and so withhold services inaccessible to those located at other points of the network and organizations that are indirectly connected to the network as they are accessible via a series of links only, respectively.

Second, Norris et al. (2008) grouped social support under the umbrella of social capital. Social support here embraces all social interactions that provide "loving, caring, and readily available" (ibid, 138) assistance in times of need to individuals in the frame of a network of social relationships. Sources of social support form a pyramid pattern: the broadest foundation is the family, followed by friends, neighbours, and co-workers as other primary support groups, and by formal agencies and external actors beyond the individual's immediate circle. These may be the source of emotional, informational, and

tangible support. Further, they highlight two aspects of social support: the perception of existence and the influence of the support activities. Two types of social support have been identified earlier (Kaniasty & Norris 2004), namely 'received support' (actual receipt of help) and 'perceived support' (the belief that help would be available if needed). The two types of support cannot be completely divided from one another: whereas received support is a physical intervention correlating positively with the severity of exposure, it sustains a level of perceived support that in turn helps to improve mental health. It is desirable to keep a balance between receiving and providing support as constantly receiving can threaten self-esteem while providing support causes stress. Also, as Norris et al. (2008) point out, in times of need people experience 'emergent norms', one of the first sociological phenomena identified within disasters studies (Fritz & Williams 1957). 'Emergent norms' mean that community members tend to seek the help of others in similar positions to help make good collective decisions.

Third, Norris et al. (2008) discuss how social capital also encompasses relationships between individuals and their wider social environment. Three such social psychological dimensions of social capital have been identified by Norris et al. (2008) and these are a sense of community, place attachment, and citizen participation. In the first instance, Norris et al. (2008), referring to Perkins et al. (2002) regarded the sense of community as form of bonding with other members of one's group or locale through trust and belonging and the sharing of mutual concerns and values. Norris and colleagues also consider it a property of resilient communities as bonding manifests itself in a concern for common issues, a respect for others, and a sense of connection that needs tangible fulfilment. The second dimension of the relationship between the individual and their surrounding community is place attachment. Place attachment is an emotional connection that underlies citizens' commitment to a revitalisation and so becomes essential for community resilience with special regards to displacement and recovery after disasters. Norris et al. (2008) consider citizen participation as the third aspect of community, embodied in the formal group activities of community members in organisations such as religious congregations, school and resident associations, neighbourhood watches, and self-help groups (Perkins et al. 2002). Participation is not straightforward however and there has been academic research on citizen participation

asking: who participates and why; how do organizational characteristics influence participation; and what are the effects of participation on community conditions and the empowerment of participants? (Wandsmerman & Florin 2000). Answering these questions may serve as a framework for understanding how grass-roots participation operates in disaster readiness and recovery events. Maton & Salem (1995) find that participation in such activities are empowered by inspired, committed leadership and by opportunities for members to play meaningful roles. Norris et al. draw on the studies of Quarantelli (1989) who observed how citizen groups emerge in times of crisis, particularly around hazardous waste sites. The findings suggest that citizen groups have a small active core of leaders, usually those with the strongest attachments to place, and a larger number of more fluctuating supporters who can be mobilised at specific times, and an even larger number of so-called nominal members.

Although the framework of Norris et al. (2008) overtly focuses on disasters and the post-disaster recovery, it belongs to the very few works giving a detailed and practical account of how social capital and community resilience are embedded in a cause-effect relationship. As will be visible in the course of the thesis, some of these aspects of social capital will return, although often in a different forms than have been addressed in the existing literature.

A weakness of Norris et al.'s (2008) argument is a general property of the vast majority of theorizations of social capital clustered around the dilemma whether social capital is a source or an end-product. Shortall (2008) strongly criticizes the mixing of social capital and civic engagement and inclusion. She refers to Anderson & Bell (2003) who argue that social capital encourages the view that everything in social life of significance can be reduced to the rational and economic, a concern also highlighted by Kadushin (2004, 76) who asked whether "we talk about "investment" in our friends to whom we relate not because we might have to call upon them for resources but simply because we like to be with them?". This implies that civic engagement is a more political concept than it actually is: engagement is not motivated by the end goals of capital production or making a good democracy. It has been treated as evidence that participation in associational activities is a key ingredient to social heath, engagement, equity that even the World Bank, the European Union and many other development

programmes recognise, and it is also accepted as a general facilitator of rural development.

Shortall (2008) claims that confusing social capital with engagement and participation can be derived from Putnam's influential works (Putnam 1993a;b; 2000) where he "argues that dense networks of civic engagement produce a capacity for trust, reciprocity and co-operation ('social capital') which in turn leads to a healthy economy and a healthy democracy" (Shortall 2008, 451). Putnam identified measures of civic participation and social capital including associational activities, such as newspaper readership or voting behaviour, leading him to the conclusion that good government is a result of such norms and networks of civic engagement. Shortall (2008) claims Putnam and those following this train of thought are mistaken and confuse social capital, social inclusion and civic engagement: at times seeing social capital as the same thing as civic engagement; and at others, mixing up the relationship of cause and effect between them.

Interestingly, Norris et al. (2008) refer to the works of Brown & Kulig (1996/97) who conceptualise 'resiliency' in the context of communities and claim that needs to be grounded in a notion of human agency, understood in the sense of, again, the capacity for meaningful, intentional action:

> • *"Human agency implies both responsive and teleological orientations, thus, it is useful to conceptualize resiliency, personal and collective, in terms of both recovery and efficacy.*
> • *Individuals and collectives are resilient in a first sense insofar as they act in such a way as to recover from what they define as negative physical or social events.*
> • *Individuals and collectivities are resilient in a second sense insofar as they act to transform their physical and social environments to mitigate against such events in the future.*
> • *The distinction between individual and community resiliency is parallel to the distinction between individual and collective action, this being a relational notion distinct from merely the aggregation of individual resilience as well as from the structural endurance within communities.*
> • *While it is possible to conceptualize social structures as being resilient in a crude sense, it is not theoretically useful to do so.*
> • *Individual and collective resiliency is enabled as well as constrained by both physical conditions and social structures, the latter involving social networks local political economy, and practiced meaning systems.*
> • *Capacity building in the context of community development can be understood as the process of enhancing personal and collective resiliency through the critique and transformation of social structures." (Brown & Kulig 1996/97, 30).*

As was already visible in 1996, the idea of resilience has been transferred to a community scale by building on the psychological resilience literature (introduced earlier in this chapter on the approaches to resilience) and applying the ideas of proactive capacity building (although this is introduced in terms of a response to episodic events). Opposed to Norris et al. (2008) and drawing on Magis (2010), Skerratt (2013) speaks of proactive individual and community agency in times of constant change. She is among the few to explicitly speak of rural community resilience in the context of 'change as a norm' while she cites Harris et al. (2000) who claim "in human systems, change, not stasis, is a constant". Therefore Skerratt (2013) cites Sherrieb et al. (2010, 245), who building on Norris et al.'s (2008) model – explored earlier –state that "community resilience takes us beyond making plans for a disaster, to building strengths in a community that will facilitate the process of resilience when needed". A similar strand of thought is visible in the works of McIntosh et al. (2008) and Curtis (2010) with the latter emphasising the need for "longitudinal, rather than single snap-shot, research, to increase our understanding of 'resilience pathways'" (Curtis 2010, 99). Skerratt (2013) highlights Magis' (2010) reliance on the work of Davidson (2010) and Maguire & Cartwright (2008), as it incorporates proactive agency and moves away from a "deficit or vulnerabilities mode of analysis" (Magis 2010, 12), identifying individual and community agency instead.

The past sections explored a cluster of works on rural community resilience that has emerged in recent years applying similar approaches and coming to similar conclusions. The criticism that emerged towards the appearance of 'rural community resilience' in the literature is manifold. Skerratt identified an array of characteristics of the 'rural community resilience' concept following a critical and detailed analysis of the development of the literature. The six properties of resilience are that it shall be:

> *"1. the source of the outcome, rather than solely the outcome;*
> *2. contingent on deployment and management of individual, community and/or externally-networked stocks of resources and vulnerabilities;*
> *3. cumulatively built through repeated mechanisms and pathways over time or life-course;*
> *4. multi-scale: individual, community, and region;*
> *5. where change is constant not only episodic;*

6. not neutral but with often-implicit normative associations. (Skerratt 2013, 39)

This description is one of the most comprehensive available in the literature and offers a useful starting point upon which further discussion can be built, including criticism that this thesis shall reflect on both in the next paragraphs and the next theoretical and empirical chapters. This critique has a number of main points:

First, in agreement with Poortinga (2013), while 'dimensions' of social capital are essential, there is still little clarity about the role it plays in building and maintaining community resilience. Social capital is conceptually very vague and too broad – as will be discussed in the following chapter – for it to be useful as an analytic tool as it is not able to capture all aspects of the social environment, and so it often remains unclear how communities perform what is considered resilience in the literature. The especially wide gap remains the question of agency – how networks of a proactive agency are established and how they manifest themselves as part of an outcome.

Second, although accepting Skerratt's (2013) injunction not to underrate the normative aspect of community resilience, the literature is overly normative and oriented towards moving the discussion towards the expected outcomes of resilience.

Third, as shown in the following chapter, in many cases, different forms of 'resources', 'dimensions' or stocks of 'capital' are identified, and the interrelationships between these entities are blurred, with agency granted only to humans. The essentialist categories through which tangible and intangible entities are dealt with on the same ontological level, and there are no clear ways of accounting for the way that certain entities taking multiple roles, shifting between the categories or influencing others.

Fourth, drivers of change – either constant or episodic – are considered as external to the community and state intervention appears as benign support. Change, shocks, disasters and disturbances, however, are often caused by the community members themselves or through the practices they pursue – degradation as well as development can be endogenous. At the same time, community members struggling against the interests of the state and other powerful agencies are not accounted for in the literature.

Fifth, the view of communities in the literature is often not realistic and remains overly positive. The life-long embeddedness of people is often not respected, and it is expected that behaviour and habitus could be changed as a result of a resilience development toolkit. At the same time, these works do not take into consideration the struggles that are internal to communities or the fragmentation they face. Even if people share the same identity, place, and fate, they pursue different economic interests, rationales and aims, something which has to be taken into consideration when analysing how communities operate.

Finally, the existing analytical frameworks do not indicate how the resilience of a community – and whether it has been considered to be resilient by people – could be successfully understood or measured.

The next chapters (Chapter Three and Four) reflect on these criticisms as they introduce ways in which community and social capital can be unpacked and develop a more relational epistemological framework that may embrace very different approaches and contexts for thinking about community resilience. The aim is to provide a framework whereby one is able to conceptualise and grasp the meaning of resilience in various rural contexts, and may understand the genealogy of agency that may absorb transformation and enable adaptation, and have more understanding of the relationship between social networks and the resilience of a community.

2.5. Conclusions

This chapter aimed to provide a critical introduction to the concept of resilience and how it has been used in the field of rural communities. While the analysis found that the concept is timely and relevant and also that it may attract interesting research within the fields of human geography and rural sociology, it is also problematic in many ways. The different academic and policy oriented literatures and the lay discourses have different origins and offer a very varied array of understandings and approaches to the concept making the term confusing. Current works on resilience discussed in the field of geography feed from two strands of works developed from the 1970s that have very

different origins: one derived from ecology and another developed by psychologists. Although both approaches can be applied to rural communities, attention shall be paid to how they are used and what shortcomings distinctive findings will contain: the ecology-based social-ecological systems (SES) approach takes into consideration natural processes and the complexity of nature, but it is the psychology-based approach will be able to elaborate human desires, values and demands of community members. Independently from these question of approaches and origins, 'resilience' has been heavily debated and critiqued in the past years and the questions of its normative, neo-liberal, proactive or scalar nature have been scrutinised especially where resilience was regarded as a policy goal. This analysis accepted these critiques and found that some of these problematic points can be overcome by applying an approach and a framework concentrating on relations between components of the rural community. Instead of focusing on these questions widely discussed in the existing literature, the current project raised new questions: whether resilience can be considered as produced non-intentionally, what power dynamics are present within communities, how can pressures transforming communities be of external and also of internal origin and whether these questions can be tackled beyond the framework and set of tools of community studies and social capital.

This research project suggests that resilience is a concept that can be applied to any subject – resilience is everywhere. Be it a product of engineers as simple as a pencil (that can be broken by force of a hand), a person expected to go through emotional development, an ecological system such as a savannah, or a community of farmers living in the countryside, everything is able to transform to a certain extent before complete restructuring – and in many cases transformation is considered a goal. What is more, it does not matter if something is changing or not (is in a position of equilibrium or on an evolutionary course, perhaps moving between different states of equilibria), there are two questions relevant to resilience that can be raised at any time: what deliberate and non-intentional forces determine the exact pathway and how the course of development or stability is perceived by people. Thus, in all cases where discussion is made about decline, progress or change or where power struggles are in question, tacitly, resilience is also in discussion.

Resilience has often been treated as an ability to cope with a single shock and especially as a response to a disruption that happened in the past. This project aims to go further and extend this narrow view: beyond asking questions such as "how do communities respond to a single force of change?", "what makes a community resilient?" or "resilience of what to what?" this research aims to map out the many forces and properties of a rural community that determine how it is able to maintain function and identity. Nevertheless, following the suggestion of Ludwig et al. (1997), when speaking about resilience a decision had to be made about what we mean by the system's stability or the change in its configuration. Derived from the popular definition of resilience also applied in this project, community functioning and identity are in focus and in particular, it is the currently existing farming community in a specified area that is considered a constant variable (as discussed in details in Chapter Three). The 'community' as such, therefore, includes the production of a specific type of product and the properties of the system in question include the specific social system and practices developed by the agricultural production. It is very important to remember that this decision is made by the researcher, it is 'arbitrary' and does not in all cases match the interests of community members, the society or ecological sustainability. Although it is an overall aim of farmers and other community members to sustain and maintain the current agricultural production, in many cases financial interests of farmers, for example, can easily overwrite the demand to maintain historically established structures and cultures, in other cases it might be the interests of environmental sustainability that may clash with demands of a rural community. Needless to say, beyond these more general rationales and mindsets there are also many opposing interests coexisting within the smallest communities: from different aspects the same processes (of change) are considered malign or benign. As will be discussed in the empirical chapters, in certain occasions even the exact community members can consider the same processes once good later bad depending on the exact circumstances. Resilience, therefore, is not considered a (policy) goal in this research, and it is not an aim to establish how communities respond to change. Instead, it is the existence of the current agricultural practice that is taken as the basis and to which transformation and community change – including the internal structure of the community etc. – is compared.

'Community resilience' is also a special and especially interesting subject within those works focusing on resilience, as it incorporates the complexity of (social-)ecological systems, yet, it is imbued with the desires of the humans involved. This project acknowledges the benefits of following an SES-based approaches and to some extent, one may even say it applies an SES approach given its focus on human-nature connections and its analytical nature – as opposed to applying a prescriptive, normative way of thinking. However, in the following empirical chapters this work focuses on intangible properties of rural communities such as human-non-human relations, power, agency, discourses, and values that are not inherently a focus point of the SES that was originally built on scholarship of natural sciences and scientifically proven evidence.

The explanations in the literature about what makes communities resilient and what constitutes resilience include many factors that have been labelled as part of the concept of 'social capital'. Social capital here includes elements both structure and agency: individual actions and structural properties of society have been mixed within the concept of social capital as they simultaneously lead to communities 'becoming resilient' and even more to 'perform resilience' in different ways. Using social capital in an uncritical way however leads to a weak explanatory power and so a better understanding is needed regarding what the source of certain aspects of social capital are, and how these support stability and adaptability of communities. Norris et al. (2008) have shown that resilience is linked to social capital, but this thesis is seeking to develop this connection further. Looking at social capital and resilience as relational, may help overcome some of the inconsistencies lying within of the concepts.

III. RURAL COMMUNITY AND SOCIAL CAPITAL

The main aim of this thesis is to think through how the recently developed research agenda of community resilience can be linked to traditional work human geography and rural sociology by focusing on relations. The previous chapter introduced the concept of resilience and discussed why it is a timely, yet, often problematic concept that is surrounded by many debates. As shown, resilience is a concept that is especially arguable when applied to communities; questions such as resilience for whom, who is responsible for resilience, what makes a community resilient, or what is to be preserved while adapting to changing circumstances, are questions that shall be negotiated to maintain or add an analytical value to the concept. It is difficult to take all these questions into consideration, as a view on the resilience of communities will contain properties of both psychological and ecological (SES) approaches.

Community resilience has often been linked to expected outcomes as has been applied as a tool or a form of neoliberal governance. When doing so, writers have often regarded resilience as something deliberately produced, and cited types and components of social capital as contributors of resilience, as discussed in the previous chapter. Researchers also claimed certain social forms and properties of rural communities shall be considered main factors or dimensions in determining in what ways or to what extent communities are resilient. This has been done in a rather narrow sense, however: works have been overly positive using only those aspects of social capital that were regarded useful to the actual argument and neglected those properties of communities that are embedded in daily life and determine what resilience means to communities in an unintentional way, as discussed in details in the previous chapter.

The aim of this chapter is to elaborate some of the questions that emerged in the previous sections and prepare the theoretical foundations of the study. By resolving some of these questions about community and social capital, and highlight those that cannot be answered by applying existing approaches, this chapter is to establish a solid background for the development of the theoretical approach – assemblage theory of

Chapter Four – applied later in this thesis in the empirical analysis (Chapter Seven, Eight and Nine). As argued in the following sections, the community studies developed from the 70s and 80s is very much talking about long standing connections between people and in an indirect way about social capital. It is also arguable that community studies have always been relational in the sense that they are concerned with the social relations and therefore this chapter aims is to examine and discuss that context by examining this development of work on rural communities in geography of the past decades. The issues discussed in this literature imply how far networks can be stretched before they break, before the community becomes completely fragmented or takes another form. Such ideas discussed in community studies and social capital literature, clearly echo in more recent works published within the research agenda of 'resilience' as all these three approaches are concerned with social relations. Extending our scope and thinking beyond the social relations, by using relational approaches we may also understand how the more than social relations emerge and this can lead us into an assemblage theory approach. As this thesis argues, a useful way of thinking about how certain ties have been reformulated, how they are surviving and holding on or changing, is by applying ideas of assemblage.

Firstly, this chapter is to line up various approaches to communities, and especially, to think through how communities may be considered as outcomes of interactions within networks and what this means to how their resilience shall be conceptualised. Secondly, following the thread of thought regarding social relations of the earlier section, a brief introduction is given on how rural farming communities are structured with special regards to the commodity chain developed on local agricultural production. Thirdly, this chapter offers a critical discussion on a concept closely tied to this issue: social capital. This analysis aims to introduce the ways in which social networks and ties within a community have been categorised, evaluated, and were regarded as sources of agency. Finally, while concluding findings of the discussions of the chapter, a call is made for an analytical framework that is able to grasp those social processes that are beyond the scope of social capital.

3.1. Rural communities

3.1.1. History of rural studies

The current research itself presents findings of a research that is about rural communities. To locate the current project in the stream of community studies that was developed in the past decades the various strands and trajectories of community studies has to be acknowledged. The concept of community has been a key subject of rural sociology and geography for many decades starting with works that were influenced by structural-functionalist perspectives and have been engaged with ethnographies of community life. The early community studies were replaced by research seeking structures, systems and networks in the 1970s. Later, with the cultural turn the tradition of ethnographic research in individual communities was rediscovered but has taken new forms, as discussed further below. In spite of the debates and variations within the field, Blackshaw claims that community studies remains unique as it has an ability

> *"to act as an important barometer of key changes in the ways modern life is experienced, telling us a great deal about how social networks operate in a modern setting and the ways in which these are underpinned by values that are both shared and often come into conflict, maintaining their tradition of informing us about the richness and complexity of humanity in the process."* *(Blackshaw 2010, 66)*

As such, community studies enable us to elucidate the "complexity of the huge and opaque tissue of inter-human connections" (ibid).

The first community studies were completed following World War Two, in the 1950s and 1960s, with researchers immersing themselves in local social life through in-depth ethnographies of individual communities. The majority of these works were built on raw data collected in the communities and were focusing on family and kinship networks, local work patterns, religious practices, voluntary networks, political attachment. They provide thoroughly elaborated accounts of lay people's lives, particularly in working class and farming communities. A particular influence in developing this school came from University College of Wales, Aberystwyth where geographers and sociologists were pioneers of the approach, and thus, many of the community studies were conducted in Wales (e.g. Rees 1950, Davies & Rees 1962).

These were not developed as planned parts of a systematic survey with uniform questionnaires and predetermined lines of inquiry but researchers chose their own path of investigation were individual studies conducted in villages or market towns considered to be of a 'manageable size'. Nevertheless works followed similar headings, including characteristic chapters such as "Physical framework", "The course of the year", "Chapel, Church and Sabbath" or "Historical appraisal" (Davies & Rees 1962, vi). Beyond the similar fields of inquiry these works were often tacitly positioned within the idea of a rural-urban continuance and think through where do exact communities fit on the trajectory of rural-urban continuance. They also engaged with issues about how the communities in question were changing, especially how they were losing their rural identity due to the pressures of modernization, industrialization and urbanization. Rex & Moore (1967, 213) summarise this era as following a retrospective "loss of community" narrative and aspirations for reviving a "myth of the golden past".

This old tradition of community studies was a body of firmly empirical studies of rather descriptive nature. The methodology adopted in these studies has been described as "impressionistic" (Crow & Allan 1994, 14) and the data collection process used lacked systematic procedure. As the studies were mainly empirically driven, they led to findings that could not be generalised. They were shaped by, if anything, some of the traditional sociological theories, as studies were tacitly framed around a tradition of functionalist anthropology popular at the time. Most influential of this school of thought were Emile Durkheim, Ferdinand Tönnies and members of the Chicago school such as Louis Wirth. These writers provided the concepts community studies were framed around, firstly, Durkheim's works 'The division of labour in society' (Durkheim 1997) and 'The rules of sociological method' (Durkheim 1982), secondly, Tönnies's (1940) study about *gemeinschaft* and *gesellschaft* concentrating on social facts and thirdly, works for Marx for whom community was a form of social texture which precedes capitalist production (Marx 1973, see Adler 2015) These however did not provide theoretical framework that could underpin empirical findings and the concept of community remained insufficiently operationalised, ethnographic observations did not match the society as a whole (Crow & Allan 1994). Allan & Phillipson (2008) also find that being imbued with ideology, the concept of 'community' was analytically useless,

and that the significance of community as a locality has inevitably decreased with wide scale transformations of the 20th century.

From the 1970s such empirical research became rare following the emerging critique of the theoretical and methodical assumptions underlying such studies and writers have been seeking deeper theorization, and for a decade there have been very few empirical studies on people's daily lives. As Pahl (2005, 626) put it: "the zeitgeist of the late 1960s … was turning away from traditional and outmoded notions of 'community'". Beyond the criticism on the traditional community studies' focus on localities, Crow & Allan (1994) highlight feminist critique that appeared and included discussions on, gender roles, unemployment romanticism, mutual aid groups that lead to the 'loss of community'. From a methodological point of view there emerged a demand for developing analytical frameworks and the use of more structured interview or questionnaire data that was considered representative of the community. Research of this period often targeted collection of data about different relationships and the exchanges, and their analysis resulted in the descriptive presentation of network properties and the characteristics of those engaged in specific activities (Allan & Phillipson 2008).

The point of departure for the strong critique and further development of community studies into political economy direction of Bell & Newby (1971, 53) was also that social networks were becoming "less locality-bound and less close-knit" and so for them location did not anymore matter as much as other structures. Instead of locality, they suggest is the broader set of political approaches such as social classes that shall be given more attention. Bell & Newby (1971) cast down with the views that consider community as either local administrative unit, non-work relations, sense of belonging or a 'folk society', and by citing a number of writers they offer an array of new ways community can be approached. Bell and Newby (1971) came to the conclusion that 'community studies' should not refer to subject but a method (Blackshaw 2010).

In this work of Bell & Newby refer to early examples of how researchers have been thinking of communities in broader frameworks. This review includes the work of

Barnes, founder of the social network analytical tool, who described the social network as:

> "the image I have is of a set of points some of which are joined by lines. The points of the image are people, or sometimes groups, and the lines indicate which people interact with each other" (Barnes 1954, 43).

Warren (1963) also wrote about structural and functional relations defining extra-community systems as 'vertical' orientation of communities into larger society including aspects such as labour division, differentiation of interests or urbansation and suburbanization. Pahl (1966) also claimed that ways of life and social patterns are related to social structure instead of geography, as Bell and Newby (1971, 52) highlight, "non overlapping contiua" exist in complex social relationships and concentrating on single processes is misleading. In her work Stacey (1969) offers a surrogate to community by introducing the so-called local social system, claiming it is theoretically possible to list systematically the social institutions which might be present in a locality with all their interconnections (Bell & Newby 1971). In Stacey's (1969) work 'community' is treated as a system, and there are already hints about how community change – and resilience of a relational system – might be understood under such lens, among the peculiarities of the local social system are the existence of: "(iii) circumstances under which an existing system might be modified or destroyed; (iv) certain interrelations between systems and parts" (Bell & Newby 1971, 49).

Bell & Newby's conclusion was that the social structure will vary from locality to locality and from individual to individual, and so Pahl's (1966) ideas of non-place communities' or Bott's (1957) thesis on social change 'from community to network' shall be treated with criticism. This change in thinking led later to the development of Wellman's (1979) or Granovetter's (1973, 1983) network perspective on 'personal communities'. Similarly, in Wilkinson's works, community is understood as a "process of interaction through time, with constantly changing elements and structure" (Wilkinson 1970, 317), which means that a community cannot exist without interaction and communication between its members (Silk 1999). The key constituent of a social field is a fragile system of actors' behavioural roles based on associations that change through time. These roles are relational, interdependent, and the behavioural

interactions determine the emergent, dynamic and boundless qualities and build up holistic characteristics through regular behavioural patterns. This approach has endured and has been applied also in some of the recent works that served the basis for discussing community resilience. Basing her definition on such human interactions, Rose (1997) understands community as a constantly performed process: instead of a product it is much more a collection of contradictions rather than a singular agreed notion and should be perceived as "a series of voices rather than a unified, substantive object" (Panelli & Welch 2005, 1593).

From the 1990s onwards there was a revival of interest in empirical studies of community life and localities with more critical view. From the start of this period writers have started rereading, re-evaluating and rediscovering some of the traditional community studies work. This was due to globalisation emerging as a leading field of research that was represented by works of Castells (1997), Massey (1994) for instance. Savage et al. (2005, 3) claim that these writers "did not emphasise the erosion of place but rather focused on new forms of connection and mobility, and their potential to re-work social relationships and to re-construct localism". The role of locality as a physical place has became downgraded and 'community' has become less place-dependent. Instead, it has been treated as a symbolic, imagined or virtual construct that shall earn individual and in-depth analysis (Blackshaw 2010). Most recent trends in community studies includes four interrelated and overlapping themes: connection, difference, boundaries and development, as identified by Crow & Mah (2011).

An early and well known example of taking individual communities and looking them in details from this new era was Michael Bell's (Bell 1994) work in Childerley. Later on the reinvention of the rural community studies of the 21st Century included works of Rapport (1993), Taylor (2006) and Goodwin-Hawkins (2015) but this reintroduction happened partially with a focus on rural Wales once again as some of this work was done within the Rural Welsh Observatory (Moles 2009). Currently the Newtown case-study of Global-rural project (Woods 2016) of Aberystwyth University reappraises the traditional type of community studies in the sense that it is approaching a local community by focusing on it in depth. Although this project has the foundations of its methodology in rural sociology, the study has different conceptual readings as it is

theoretically and conceptually framed in broader ideas of political economy, relational approaches, social constructivist views of rural space and performativity.

The broader relational turn in human geography had its imprint on methodology of community studies as well and relational approaches have been applied to communities of various nature since. Replacing quantitative network analysis with relational approaches offered new analytical tools to researchers, Sheehan & Vadjunec (2012) for instance applied Actor-Network Theory to understand the construction of attachment in rural communities. The wide applicability and the origins of ANT, however quickly made it a tool in the intersections of community studies and science and technology studies (e.g. Jones 2004, Rivera & Cox 2016), community studies and management studies (e.g. Fox 2000) as well with special regards to all kinds of Communities of Practice – and especially communities dispersed in space. Although not directly focusing on rural communities, the relational thinking applied to commodity chains and food networks has been able to grasp the fluidity or 'liquid' nature of farming communities (Blackshaw 2010). Works within agri-food studies (Cook et al. 2004, Jackson et al. 2006; 2009, Jackson 2010) have offered novel ways of viewing how human connections are constructed by the commodity chain and how commodities moving along the network relate to humans in different ways in space and time (as detailed in the following section).

In terms of the literature specifically on rural community resilience, there is a wide array of different understandings of 'community' as the object of the studies – in the vast majority of such works community remains 'unconceptualised' and community is attached to a locality such as a municipality. Some studies that do elaborate the concept of community, reach back to theoretical approaches derived from abstract philosophical debates about the nature of community (e.g. Nancy 1991, Donovan 2002). Other works are more comprehensible, and whilst talking about community in an abstract way, they remain relatively tangible as they draw on the works of Wilkinson (1973) to establish human interactions, identities and imaginaries as the cornerstone of community. The most widespread and most practical and lay understandings of works on rural community resilience recognise localities and place-specific perimeters of territorial units and their population as the markers of communities (e.g. Amundsen

2012, Skerratt 2013). A special 'minimalist' (Liepins 2004) group of studies on rural resilience does not denominate and define groups of people affected by drivers of change as communities but only tacitly regard them as such. Other works draw upon communities of interaction in a more explicit way. Wilson (2013), for example, based his work on Cutter et al. (2008, 599) who regard communities as a "totality of social system interactions within a defined geographic space such as a neighbourhood, census tract, city, or county" as affective units of belonging and identity that in turn are the source of a network of relations, although he also admits that there are many different communities within such spaces, embedded within complex networks of power and with often highly divergent aims related to resilience.

As detailed in Chaper Five on research methods, this project is interested in empirical studies of individual case-studies. In the course of this study semi-structured interviews conducted with community members was the primary data collection method and this was supplemented by other ethnographic methods such as participant observation. The main interest of the research, however, was on relations within the community, more specifically, forms and capacities of network ties within the community – although no full network analysis or quantitative analysis has been completed. The current research therefore broadly fits in to the third, most recent trend of community studies.

3.1.2. Defining the rural farming communities

The following paragraphs describe how firstly the physical location, secondly the social system, the structure and the relations, and thirdly, the identity may define the farming communities that are subject of this thesis. This section is to explain those normative judgments that were described in a theoretical manner in Chapter Two regarding the stability of systems: what function and identity of a rural farming community shall mean. In short, communities can be defined as "groups of people who have something in common" (Crow & Maclean 2006, 353). According to Willmott's (1986) distinction, this commonality may be about a geographical place, an interest and an attachment; following Flora et al.'s (2004) categorisation a location, a social system

and an identity, three dimensions in both cases, that in reality, most often appear simultaneously. Whatever the main dimensions defining the exact community in question are, the conceptualisation has to find interconnections between identity, space and place and has to take into account both material and cultural dimensions, also physical and social spaces, relations and processes of the community, while reflecting on whether the community has a local territorial basis or it is dispersed in space perhaps it is merely an imagined community (Liepins 2000, Phillips 1998).

As mentioned in the earlier section, location and the role of 'place' has not been of major concern in more recent accounts of communities. The current research also seeks to come to generalised conclusions about community resilience and therefore the exact location of the communities scrutinized is not of importance (principles of the case study selection are described more in details in Chapter Five). However, the case-studies are most often referred to by location (Medgyesegyháza municipality and the Cambrian Mountains) as the communities are materially attached to and constructed upon these exact geographical areas (as described in details in Chapter Eight). Agricultural communities are most often pinned down to certain geographical areas; farming is, at least to some extent, connected to fix places. Communities in this study are established by people, knowledge, land, soil and the commodities coming together. Some of these components may be displaced but the rural farming communities will heavily rely on pieces of land and a geographical location with special natural peculiarities. It is possible that the same people continue the usual agricultural production process in a new location due to factors such as climate change or soil depletion. In such a case, although the community structure or identity could remain as earlier, a part of the constituent material of the community would fade away and the community would fall apart.

In terms of social system, structure and relations the farming community is also a unique one. According to Bauman (2008, 121) communities nowadays resemble "social networks" that are not sustained by pre-existing structures nor by any pre-defined rules that oblige members to follow principles of interaction of clearly specified nature (Blackshaw 2010). Viewed from a distance, the farming community can be considered a community of practice that according to Lave & Wenger (1991) implies a

group of people involved in a shared practice – in this case, producing certain agricultural commodities. Practices here are defined as a set of relations and processes which are performed, contested and "include the range of formal and informal ways" people conduct their economic, social and political life (Liepins 2000, 31). As discussed in details in Chapter Eight and Chapter Nine, the communities in question in this thesis are based on the practice of the production of one dominant agricultural product, watermelon and sheep. These are far from the only commodities produced in the region, however. The practice of producing these exact plants and animals is a source of identity at the same time – the importance of which is elaborated later within this section.

Secondly, In terms of structure and relations, when taking a closer look, it is visible that the community is comprised of different actors that may be divided in many ways, also into social classes (day labourers, subsistence farmers, landowners, traders, etc.). A similarity between these people is their direct connection with the commodities and their common interest in producing and forwarding the products to the markets. From such a network approach the community does not have clear cut borders and various factors for inclusion and exclusion are responsible for the embeddedness and localisation of the local food systems (Hinrichs 2000; 2003, Hinrichs & Charles 2012). Nevertheless, from a rather naïve understanding whoever comes into physical connection with the watermelon or the Welsh mountain lamb – from seed suppliers to traders and from vets to shearers, respectively – may be considered a member of the community. Naturally, those family members etc. reliant on the income generated by the farming production are also regarded as members of the community.

As mentioned, besides the 'commonality', the community members are divided from one another: while they interact, a constant struggle goes on between labourers, farmers and traders; despite the fact that they are working for the same goal, their personal interests clash on a regular basis but in different locations and with different intensity (as detailed in Chapter Six and Chapter Nine). In this sense, the follow-the-thing approach (Cook et al. 2004) and the agri-food network approach (Jackson et al. 2006; 2009, Jackson 2010) are helpful in unfolding the relationalities of food, space and place by acknowledging the "multiplicity of discrete sites along food networks, from

production to consumption to places in-between", as Goodman put it (Goodman 2016, 258). The basis of this agri-food network approach is to consider the community as part of a commodity chain in the era of globalisation whereby the connection between producers and consumers is dynamic. In this view the properties of the system are equally powerful as the contextualized human agency (Arce & Marsden 1993) as "actors shape and are shaped by the political, cultural and social environment" and "non-human intermediaries as well as human relationships within commodity chains" (Jackson 2006, 132). Jackson (2010) claims that such network ties between community members are established on the blend of business and ethics: "reciprocity and regard, trust and obligation, among other ethical and moral concerns, permeate business transactions" and thus "economic relations cannot be divorced from moral notions of 'fellow-feeling' or mutual sympathy" (Jackson 2010, 149) influenced by "moral and ethical sentiments, norms and behaviours" (ibid, 150). Some of these structural dynamics of society and the "operation of specific relations of power" (ibid, 161) are determined by specific materialities of commoditiy production. Fine (1994) demonstrated the significance of food's organic properties within farming while (Murdoch 1994) cautioned not to oversimplify the separation of the biological and the social. A more detailed account on actors, agency and community groups and the multitude of the community networks– both in theory and practice – are provided in the following chapters (Chapter Four and Chapter Six).

Beyond such more general political-economical terms of community organization that determine when, where and which people come together, more practical and more visible property of the farming communities discussed in this project is the role and dominance of family farms (see Chapter Seven and Eight for more details). Family farms are also structured by the principles elaborated in the earlier paragraph but they are also an important factor of community organisation and source of local identity. Although recent pressures from food production concerns have tested the European system of rural communities based on family farms, this property of the community is considered as part of function and identity in this project, and therefore is a constant variable in resilience that is meant to be preserved.

A third way of thinking about rural farming communities would focus on identity and symbols of a community. It is at this point of this review that the influential work of Cohen (1985) is referred to in details: Cohen distinguishes communities in a way that is difficult to fit into the development of community studies reviewed in the earlier sections. In his work 'The symbolic construction of community', Cohen (1985) argues that the existence of communties is based on "imagery, boundary marking processes, customs, habits, rituals and the communication of these" (Blackshaw 2010, 6), that are more than descriptions, they are also essential to what community is. According to Cohen it is this boundary and a boundary making process that marks the 'beginning' and 'end' of a community – ideas that resonate with the discussion about social inclusion and exclusion (elaborated in the review of social capital in the following subchapter). In Cohen's understanding it is not taking into consideration any structural ties, flows, tangible connections that may be captured via network approach but through the shared symbols of community, the mental constructs are what provide people with the means to make meaning and attachment to communities. This symbolic construction is described by Cohen as:

> *"the community as experienced by its members does not consist in social structure or in the doing of social behaviour. It inheres, rather in the thinking about it. It is in this sense that we can speak of the community as a symbolic, rather than a structural, construct. In seeking to understand the phenomenon of community we have to regard its constituent social relations as repositories of meaning for its members, not a set of mechanical linkages." (Cohen 1985, 98)*

This approach – in Cohen's examples at least – usually assumes a high level of awareness that is treated as a necessary precondition for the valuing of symbols, culture and community. It is the recognition of difference in meanings, beliefs and other ways of doing things what will make people experience where the boundary of the community is.

Interestingly, Cohen (1985) refers to a number of examples to communities in his book, most of which concentrate on imaginations and processes around the symbols. However, some of the examples reach beyond the intangible nature of symbolic communities. Such exceptions include Paine's (1982) work on reindeer herding and Cohen's earlier (1979) work on crofting. Both cases are described in very similar to the

language of current community resilience and the symbolic nature of the community is pinned to the very material agricultural practices such as the migratory herding or the small scale agricultural production of the croft. In his discussion Cohen (1985, 109) also speaks of community being created "under threat"; it is an external stress – large industrial investments in the rural community – that is the source of "mobilizing collectivity", that results in the revival of a tradition and engagement within a looser, otherwise decaying community. Cohen in an earlier work described his train of thought as:

> *"So, to the question, 'why do communities respond assertively to encroachment upon their boundaries?', we can now speculate along the following lines. They do so because their members feel themselves to be under so severe a threat from some extrinsic source that if they do not speak out now they may be silenced for ever. Further, they do so because their members recognize their own voices within them, and because they feel the message of this vocal assemblage, though general, to be informed directly by their own experiences and mentalities"* Cohen (1979, 263).

This description follows the same agenda as many works on community resilience: a community shall recognize the problems and respond to an external threat in order to protect its function and identity. A novel point here is the 'emergent' nature of community where it is being created (or at least strengthened) due to the appearance of a threat itself. This thesis, however – as will be developed in the empirical chapters –, is to go even further and show how the process of 'performing resilience' may happen in other directions as well: perhaps community members do not recognize the actual identity they share, they associate the shared activities as merely economic, perhaps they recognize and share but do not cherish certain symbols. As will be discussed later, in many cases farming cultures do not represent more than a financially successful economic-agricultural activity to farmers, if community members are to maintain and protect the tradition, the 'symbolic' values of their community is not the final target for them. For the researcher, such aspects may be visible and of interest, however.

This point is also mentioned in the comment of Liepins (2000). According to Liepins approaches such as that of Cohen (1985) are problematic and risky as they, while focusing on meanings or symbolism of community, ignore or downplay the material practices and physical elements involved in creating of the meanings. The

overly focus on meanings and identity neglects power relations involved in establishment and use of the symbols. Liepins (2000) refers to Day, who cautioned:

> *"[t]reating community solely in terms of sets of social understandings or mental constructs risks detaching them from the actual social relationships among people in which their use is grounded". (Day 1998, 252).*

In case of farming communities the agricultural commodities produced by the community members may be considered the main symbols of the community, as, according to Jackson et al. (2009), farming communities are symbols of food supplying in more general sense. This is especially true when it comes to flagship products of a locality that make the community distinctive on a regional or national scale. Such commodities may be the source of community identity and pride (as seen in Chapter Nine) and community festivals may be based on the products. Following the thread of thought and linked to the role of commodities, for the outside viewers the communities are often defined by accounts shown in the media. It is rather peculiar and symbolic to the case-study communities that community members facing hardship get involved in pressure groups and various forms of community engagement which is often echoed in the media. This is not to say, that socio-economic shocks and local political upheaval would be part of local identity.

Thinking in terms of resilience, it is therefore partially the existence of certain agricultural products – such as the watermelon in Hungary or the Welsh mountain lamb in Wales – in a given locality that shall be treated as a constant variable: the community may be resilient insofar as transformation and adjustment to changing trends does not modify such community symbols. In case the watermelon or the lambs would be replaced by other products due to, for example, economic or environmental pressures – derived from the basic definition of resilience – the function and identity of the community would be lost.

3.2. Understandings of social capital

This thesis set out the aim to better understand what resilience means in the case of rural communities, and how it is performed partially by building on the scholarship

of social capital. Social capital is an important concept as both two fields of literature reviewed until now brings us here. Chapter Two reviewed the resilience literature and by the end of the chapter social capital has been regarded as a key factor of resilience as highlighted by the works of Norris et al. (2008), Skerratt (2013) or Cheshire et al. (2015). The trajectory in terms of the existing works on communities and especially the most recent strand of community studies also leads us to a concern for issues about networking. This way social capital emerges as a key concept which can help to link these two traditions, resilience and rural community studies. The second part of this chapter aims to go back and more thoroughly examine the origin of social capital and how it has been applied within the context of understanding communities.

In more practical terms, social capital is an important term in this research for two reasons. Firstly, aspects of social capital help us understand how communities can be defined and conceptualised, how social networks form, and therefore, how communities are established in practical terms, as discussed in the previous sections on communities. Secondly, social capital is a concept that incorporates different aspects that have been widely used in the literature to explain and discuss the capacities of individuals and social groups to act and to determine the pathways of change and development.

As shown in Chapter Two, the literature specifically talking about resilience has also widely accepted that not only actions of individual humans but the structure and properties of certain groups of people also affects what resilience means and how resilience is performed. There has been a growing recognition of the role that 'social capital' plays in holding communities together and either overtly or tacitly social capital has been used to explain why and how communities are able to capitalise on their structural properties and on their group dynamics to determine their futures. This growing literature has applied many different approaches to social capital. The large variety in definitions and conceptualisations used in the academic literature make it difficult to develop a single analytical framework that could clearly mark the ways in which social capital may help us to explain what resilience means and how it is performed.

The following sections are to introduce the literature on social capital, including definitions, approaches, main schools and uses of the concept, with special regards to Putnam's and Bourdieu's school and the approach focusing on networks, inclusion and exclusion, identity, the so-called 'dark side of social capital', and the role of non-humans in shaping social capital. The next paragraphs also aim to highlight the aspects of social capital that make it a concept very useful in explanations to community actions including community resilience. The conclusions of this literature review however discusses how thinking in terms of social capital may be mobilised towards non-humans and why the following empirical chapters aim to include theoretical approaches that are based on human and non-human relations.

3.2.1. Definitions and schools of social capital

Social capital is a term that has been defined and applied in many ways as, according to Portes (1998), it not only gained popularity in sociological theory but it is one of those concepts that became 'exported' to everyday language as well. Practically, the only common denominator between the various understandings of social capital is that the concept denotes some feature of society or any social relation that someone may capitalize on. At the same time it is a concept that can be applied to a diverse set of phenomena, including ethnicity and assimilation, religion, humour, tax compliance, the welfare state – as seen in a recent compilation (Svendsen & Svendsen 2009) – and not only economy, trust or networks in a narrow sense. Vergunst et al. (2009, 9) defined social capital as "a metaphor for the qualities of some relationships that allow other benefits to be secured through them" that, as Lee et al. put it: "form out of repeated social interactions between individuals and groups which are said to develop trust, social norms, and strengthen co-operation and reciprocity" (Lee et al. 2005, 270). Social capital is an aspect of social relationships therefore, that does not belong either to individuals or communities but through which both can be constituted. Svendsen (2006) speaks of social capital in more fixed, practical terms as he considers social capital as cooperative networks based on regular, personal contact and trust.

Holt (2008), following Portes & Landolt (1996), Foley & Edwards, (1999) and Amin (2005), claims that interconnected conceptual, methodological and

epistemological debates surround the dominant accounts of social capital, some of which question how social capital is generated and who benefits from it. Uphoff defined the main debates over social capital as whether it

> *"should be considered as a form of capital: whether it must be the result of some investment, (in other words, some foregone consumption); whether it must be purposefully created or can occur naturally; whether investments once created will endure or must be expected to depreciate; whether social capital should have benefits across multiple domains or will be activity specific" (Uphoff 1999, 216).*

A consensus has emerged that what distinguishes social capital from other forms of 'capital' is that it is a public good through which the actor or actors who generate the social capital may capture only a small part of its benefits, something which also leads to fragility and underinvestment in social capital. Uphoff (1999) has identified three main forms of social capital: trustworthiness of the social environment resulting in obligations and expectations; social structure that determines the information flow capability; and norms accompanied by sanctions. The source of social capital, its scale, how it is manifest, and how it can be measured are all subjects of heated debates.

A theory of social capital would accept the principle of rational and purposive action but it would at the same time account for the development of social organisation by reflecting on the conjunction of the rational principle with specific social contexts. Coleman (1986a; 1986b; 1999) identified researchers' and practitioners' interest and engagement in developing the concept of social capital lies in the fact that historically sociology and economics, two different, broad intellectual streams existed in the description and explanation of social action. A need to better understand social action encouraged scholars to bring components from both disciplines together so as to give a better explanation of social phenomena. According to Coleman, most sociologists view the socialised actor as someone subject to their environment: action is governed by social norms, rules and obligations (1999). The action here is context dependent, as it is shaped, constrained and redirected by the social context in which the individual is placed.

Economists, however, applied an opposite approach: they regarded the actor as a more independent, having personal goals, as wholly self-interested and free from

normative ties, and as having a principle of action. For an economist, the primary aim of action is to maximise utility. The pursuit of economic knowledge of human action has culminated in the development of neoclassical economic theory, as well as the growth of several varieties of political philosophy: utilitarianism, contractarianism, and some natural rights theories (Coleman 1999). Both sociological and economic forms of knowledge have faced criticism due to their shortcomings. Sociological thought has received criticism for taking agency away from the actor and locates no 'engine of action' as the actor was a cipher shaped purely by its environment without any purpose or direction. Wrong (1961), for example, spoke of an 'oversocialised' conception of man in modem sociology as early as 1961. The economists' view at the same time remained unrealistic as during abstraction the role of social networks, norms, trust were lost – that in empirical reality did shape society and economy.

Attempts were made to overcome this binary as early as the 1930s. Drawing on literature from Anthropology and Sociology as well as Economics, Ben-Porath (1930) published his work on exchange systems he coined 'F-connection' that recognised the role of families, friends, and firms in economic exchange. Later Williamson (1975; 1981) analysed how economic activity is organised within firms and markets, and became the founder of New Institutional Economics an economic perspective developing beyond earlier institutional economics and neoclassical economics by putting transaction costs and externalities in its focus. More recently, Svendsen & Svendsen (2009) have framed social capital research as a blending of economy primarily focusing on transaction costs, political science focusing on institutions and social studies focusing on the norms that regulate the behaviour of social groups. Svendsen & Svendsen 2009, referring to earlier works (Svendsen & Svendsen 2003, Svendsen 2006), suggest the 'new socio-economics' discipline that is the result of the recent social capital research shall be termed Bourdieuconomics, named after Bourdieu who has done some of the pioneer research on and the interconnectedness of invisible forms of capital.

Nevertheless, the introduction of the concept of social capital into the research agendas of various disciplines is far from able to solve all research problems. As Portes put this limited role of social capital:

"the set of processes encompassed by the concept are not new and have been studied under other labels in the past. Calling them social capital is, to a large extent, just a means of presenting them in a more appealing conceptual garb. Second, there is little ground to believe that social capital will provide a ready remedy for major social problems, as promised by its bolder proponents." (Portes 1998, 21).

Social capital however remains to be an attractive scope through which social phenomena can be viewed and so different schools and approaches may contain elements that can be of help in better understanding resilience of rural farming communities.

3.2.1.1. The school of Putnam

The most enduring and probably most widely acknowledged and most influential (Shucksmith 2000) use of the concept has been that of Robert Putnam (1993a, 1993b, 2000). Despite the debates surrounding his conceptualisation and the numerous critiques that have targeted Putnam's approach since its emergence – as shown in the following sections –, it is an approach that has rendered social capital quantifiable and thus easy to apply in various social settings. This also led to social capital being predominantly associated with Putnam's work when applied within policy discussions. The school of thought his work engendered regards social capital a property inherently owned by communities that operate as a common good. In his words, social capital can be defined as "the features of social organisation, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions" (1993a, 167). This makes social capital a term most often treated in a normative manner where the larger the 'amount' of social capital the better, but which carries the possibility of establishing the common good on a larger scale, where the individual asset may become a feature of communities and even a nation. In his famous work titled 'Bowling alone', Putnam (2000) established the bonding-bridging typology. Putnam defined bonding social capital as open networks that are "inward looking [networks that] tend to reinforce exclusive identities homogeneous groups" (ibid 22), and bridging social capital consists of "outward looking and encompass people across diverse social cleavages", although Putnam did not use these in a strictly

systematic way (Svendsen & Svendsen 2009). It is the bridging forms of social capital that Putnam (2000) considered as what eases contact and trust between strangers in a society, and what enables third party involvement (e.g. state, lawyers) unnecessary and thus lowers transaction costs (Svendsen 2006). A refinement and further development of Putnam's categorization comes from Woolcock who, beyond bridging, added a third type, linking social capital to the framework (Woolcock, 2001, Szreter & Woolcock, 2004). Linking here is:

> "the extent to which individuals build relationships with institutions and individuals who have relative power over them (e.g. to provide access to services, jobs or resources)" (Hawkins & Maurer 2009, 1780).

The idea that social capital is constructed primarily as a result of formal, and to some extent, informal social networks has become popular and been adopted even within the work of scholars – such as Li et al. (2003) or Mohan & Mohan (2002) – who are otherwise critical of Putnam's approach. As Holt (2008) and Fine (2001) highlighted, the focus on engagement within Putnam's writings means that he identifies individual actions as the reason for specific large-scale social and economic conditions. According to Holt, this rather neoliberal attitude

> "shifts the cause of inequality, hardship, socio-economic exclusion and poverty away from the operations of the political economy ultimately onto individuals' and groups' civic engagement" (Holt 2008, 229).

However, as described by Svendsen, this is what means that in Putnam's approach

> "macro level performance, including institutional performance, ought to be described, analyzed, and explained in its very genesis, that is, in concrete processes of social capital building highlighted in case studies within specific time/space contexts" (Svendsen 2006, 57).

Putnam considers generalized trust as the primarily component of social capital and applies the concept in macro level studies concerned with the relation between different 'levels of trust' and voluntary network cooperation and a society's political and economic performance (Svendsen 2006). Putnam therefore concentrates on how trust is built via individual actions visible in micro level (fieldwork) studies. At the same time, as mentioned earlier, quantitative measurements can also be placed into this framework.

Highlighting the practical aspect of his understanding of the concept, Putnam (2000, 228) asserts that: "an impressive and growing body of research suggests that civic connections help make us healthy, wealthy and wise". This explains why his account of social capital has been equated to membership of formal and informal civic organisations where especially informal social relationships are able to signify generalised norms of trust, trustworthiness and reciprocity (Holt 2008). Measured by newspaper readership, associational membership etc. Putnam has a strong belief that there is a cause-effect relationship between the activities of individuals and intangible infrastructure, since these do not measure its consequences but are regarded as the source of a common good.

The school of Putnam appears so often in the development and resilience literature for various reasons. One attractiveness of Putnam's approach and the reason for its popularity also within the 'community resilience' literature is that 'positive' associations of 'social capital' may easily be brought together with 'positive' imaginations of resilient communities. Accepting such an approach implies that trust and interconnectedness facilitate collective action and also putting human agency into action, as mentioned for example by Shucksmith (2000), or may be considered to make a community more resilient in times of change and crisis, as discussed by Cheshire et al. (2015). Another reason for Putnam's approach being applied so often is that it treats spaces less as constructed but much more as static, pre-existing, and 'given' (Holt 2008). This means that its essential components can be turned into variables and indicators that are easily linked with spatial territories – such as communities of place – and so can be incorporated into statistical surveys. Measures not specifically designed to quantify social capital have been applied in long term large scale analyses in UK settings such as the General Household Survey (GHS) or the national censuses of the Office for National Statistics but also the European Social Survey (ESS) on a transnational scale (Holt 2008). Although comparable in its nature, the overall approach does not fit the complex conceptualizations of space and spatiality and the relational approach to space applied in recent years by social scientists such as Massey (2005).

3.2.1.2. The school of Bourdieu

The following sections provide a more detailed account of the work of another influential scholar on social capital, Pierre Bourdieu. Bourdieu (1977; 1980; 1984; 1985) adopts a structural understanding of society, where the individual and their struggles for resources are tied together with social capital; the concept of social capital is a part of a larger theory on class divisions (Lee et al. 2005). Holt (2008) identified three key aspects of Bourdieu's account. First of all, Bourdieu stressed the interrelationship between social capital and other forms of capitals: human, cultural, symbolic, and economic. Second, he emphasised the ways in which the social is one key form of capital that may serve to "(re)produce socio-economic differentiation and intergenerational (dis)advantage, rather than operating as a 'general social good'" (ibid, 228). Third, Bourdieu gives nuanced and embodied account of agency via the concepts of practice and habitus, although not fully developed in relation to social capital.

Bourdieu defined the concept of social capital as:

"the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectively owned capital, a 'credential' which entitles them to credit, in the various senses of the word." (Bourdieu 1985, 249-250).

It shall be clear by now that Bourdieu regards social capital less as a common good – as opposed to Putnam's approach – but a 'property' of individuals that people may reinvest in different ways. The process of capital investment – according to Bourdieu – happens as:

"the network of relationships is the product of investment strategies, individual or collective, consciously or unconsciously aimed at establishing or reproducing social relationships that are directly usable in the short or long term i.e. at transforming contingent relations … into relationships that are at once necessary and elective, implying durable obligations selectively felt (feelings of gratitude, respect, friendship) or institutionally guaranteed (rights)."(ibid, 250-51).

At the same time, Bourdieu regards cultural and social capital as concealed forms of intergenerational capital accumulation. As Holt (2008) notes, it is unlikely that all

members of different social networks would have the same opportunities to access the capital resources held by all other members. According to his account, social capital production can be measured and an individual's social capital can be defined as:

> *"The volume of the social capital possessed by a given agent ... depends on the size of the network of connections he [sic] can effectively mobilize and on the volume of the capital (economic, cultural or symbolic) possessed in his [sic] own right by each of those to whom he [sic] is connected" (Bourdieu 1985, 250).*

Bourdieu developed a concept strongly associated with his capital framework: habitus embraces the beyond conscious, habitual, embodied and nonreflexive elements of practice thus providing a more detailed understanding of agency within social capital (Holt 2008). Bourdieu (1984) defines habitus as the embodied materialisation of individuals' capitals, or 'internalized capital' and as Holt (2008, 228) put it, it "provides an insight into the embodied and pre-reflexive, albeit always sociospatially contextualized, nature of practice". In more practical terms, by introducing habitus, Bourdieu aimed to highlight that agents are only partially knowledgeable as they are also influenced by the subconscious and embodied motivations when taking part in social activity. This means consciousness and awareness of social relationships are not a condition of social networks to count as capital (Holt 2008; Morrow 1999). In extending the notion of habitus to human geography – and thus to our understanding of community resilience – Holt follows Massey (1994) in identifying that

> *"capitals are not simply inculcated in a vacuum; rather individuals' capital accumulation occurs within specific spatial moments – themselves not neutral and pre-existing, but becoming though everyday performances and within broader 'power geometries'" (Holt 2008, 239).*

Although not aiming to ease down either conceptualizations, a major difference between the schools of Putnam and Bourdieu is that in the former case the main beneficiary of social capital – as a collective good – is society and economy on a larger scale while in the latter case it is the individual. This is a striking difference if we think of how, on the on hand, Putnam treats social capital as a component that 'lubricates' civic life (Putnam 1993), on the other hand for Bourdieu competition between groups and their members is a necessary for the allocation of resources, such as social capital

(Lee et al. 2005). This poses the researcher focusing on small groups, such as communities, in front of a dilemma. This thesis does not follow Bourdieu's work directly, but it acknowledges that social capital, while generated on a group level, will be perceived in different ways on an individual scale and personal habitus is a factor that differentiates community members' behaviors. Bourdieu's approach is also interesting in the sense that it gives an opportunity to the transformation of one kind capital into the other and so there is a larger level of fluidity, interconnectedness and interrelationship between different spheres of (social) life, such as between humans and non-humans.

3.2.1.3. Social capital in the community capitals framework

A popular approach applied within community development and resilience studies is one somewhat similar to Bourdieu's lines of thought as it places social capital as one among various forms of capital. As seen earlier, Bourdieu (1984; 1986) understood social capital as one of four key categories of capital alongside economic, cultural (embodied, objectified or institutional) and symbolic capitals. Serageldin (1996) identified three standard forms of capital in economic analysis along with physical (human-made), natural, and human and social capital. Most recently the Community Capitals Framework (CCF) developed by Flora et al. (2004) was designed to help conceptualise how community initiatives develop from a systems perspective. The framework assumes the existence of types of capital that can be assets and stocks or investments and flows and that the interaction between these capitals will have diverse impacts depending on their relationship with other capitals.

According to the framework of Flora et al. (2004), cultural capital, a less tangible type of capital refers to how people 'know the world' and the way they act within it by following traditions and their language. Cultural capital is based on values and so lays down "what voices are heard and listened to, which voices have influence in what areas, and how creativity, innovation, and influence emerge and are nurtured" (Emery & Flora 2006, 21). It determines the extent and success of collaboration between different groups such as ethnicities or generations.

Human capital operates on a lower, personal scale and reflects the skills, abilities and bodies of knowledge that are required to access resources and information, to increase people's understanding, to take over good practices, and to further enhance capabilities. Human capital is highly dependent on education and health and addresses the leadership's management qualities and abilities to shape the future of a group via proactivity, inclusion, and participation.

Social capital is understood as the 'glue' built up of connections among people and organisations and that acts as a catalyst to enable things to happen. Flora et al. (2004) apply the subdivision suggested by Granovetter (1973; 1985) and highlight the role of bonding and bridging capital, referring to redundant ties that build community cohesion and loose ties that connecting organisations and communities, respectively (Narayan 1999). The framework also acknowledges the role of trust, norms of reciprocity, network structure and cooperation, among other factors.

Political capital is devoted a separate category although strongly related to both cultural, human and social capital. According to Flora et al. (2004) it refers to the relations with those in power, organizations, connection to resources and power brokers, but – referring to Aigner et al. (2001) – they claim it also reflects the ability of community members to 'have their own voice' and engage in actions that maintain personal and community wellbeing.

Financial capital is distinctive as it has the capacity to be turned into other types of capital relatively easily. It refers to those financial resources that are available for community capacity-building investments, including business support and the development of civic and social entrepreneurship and providing the funds for future community development through the accumulation of wealth.

Finally, Flora et al. (2004) distinguish built capital, a type of capital that comprises all hard infrastructures and housing that is constructed by humans to support the cultivation other types of capital by enabling flows and generating materials, information etc.

A number of works discussing community resilience follows the community capital approach (e.g. ABS 2002, Cocklin & Alston 2003, Burnside 2007, McIntosh et al. 2008). In many cases, the roles and possible connections between capitals are more

blurred. While applying a similar approach, in her discussion on community resources, Magis (2010) highlights the role of what she coined community capitals besides other forms of capital such as natural or infrastructural capital. She describes community capital as resources invested in community endeavours, defining it as

"communities' ways of knowing the world, their values, and their assumptions about how things fit together. It is represented by symbols in language, art, and customs" (Magis 2010, 406).

Referring to Flora et al. (2004) Magis (2010) adds that it is this cultural capital that forms perceptions of life events and that is able to mobilise social rules and allows for the accumulation and consolidation of power within a community. Natural capital is considered as the assets abiding in a certain geographical location and embraces conditions existing independently form humans including position and situation, climate, biodiversity, scenery, amenities. These, in turn, serve the basis for people-place connections and cultural capital.

While easily applicable to real life examples, there are several disadvantages of this approach. First, this perspective on communities takes a rather Marxist perspective by creating a snapshot of the community that takes into account only those resources that could be valued as entities communities can possibly capitalise on. Tangible and intangible infrastructures must be taken here into consideration only insofar as they can be harnessed and put to work in order to create profit for the dominant class. From a resilience point of view, entities acknowledged here as part of 'capitals' are worth taking into consideration as long as they might be made part of a response-network or utilised as resources to maintain financial flexibility for social groups.

Second, these are essentialist categories, meaning that entities can only take one place at a time, and it is not clear how capital might be transferred between categories. The book of Flora et al. (2004) for example treat social and natural capital within different chapters under different conceptual headings, this thesis, however, argues that the borderline between humans and non-humans is blurred when thinking of their capacities. In addition, it is the stock or the amount of capital that counts here, not the relations, and abilities of various units to impact the system and other entities. Although this approach shows some similarities to Bourdieu's works discussed earlier, it is

different in that Bourdieu embedded social capital as part of the struggles individuals take part in for access to other resources, including education, esteem or financial reward (Cheshire et al. 2015). Third, the allocation of 'power' is predestined. Power belongs to those people – elites most often – who are in charge of handling financial resources or in the role of decision-making and are in the possession of knowledge. It is very difficult to grant any power here to relations residing in social capital or to the non-human capitals such as natural or built capital.

3.2.1.4. A network approach

The schools and thoughts discussed in the previous sections did, at least to some extent, consider social capital as ability to access recourses network via social ties or network – especially Putnam's school that includes bonding and bridging ties. There is, however, an approach to social capital that is distinctive from those discussed above in the sense that it is even more focused on network configuration and is less in engaged with thinking about trust on a macro level or cultural and habitual properties of individual. This network approach, that considers the social network properties and the position of individuals within the network as a set of resources (either for the individual or for the community on a larger scale) can, therefore be treated as a separate approach worth discussing in details. Caulkins (2009) for example discusses how network properties such as proximity, transitivity, frequency, scope, impermeability or specialization, asymmetry, entitlement and accountability may serve as the resource (at least some) community members can capitalize on. What is more, this approach that developed with the quantitative revolution from the 1970s resonates with the quantitative or structural approach to communities discussed in the previous sections

A network approach can be applied to various scales of, and different phenomena within the society. Although there have even been attempts to consider the global society in terms of networks (Castells 1996), the network approach to social capital is ideal to 'intermediate' level of networks (Lee et al. 2005). More specifically, it is easily applicable to many rural communities as it offers a way to map out a social network structures built up of relatively tangible, inter-human connections on a rather low, sub-regional scale. At the same time focusing on networks is not concerned with

qualitative properties of individuals in details. Although the Putnam's works introduced earlier also contain discussions about social ties, some of the most influential scholars of this approach were Granovetter (1973; 1983), who categorised human network ties by their strength and function, or Burt (1992), who analysed 'structural holes' and the nodal actors linking broader, separate structures. Fukuyama (1995; 1996) and Woolcock (1998) also agree that social capital inheres in the structure of human nature and lead to certain economic outcomes (Falk & Kilpatrick 2000). The network approach to social capital does not necessarily mean a full quantitative network analysis, however. Works including discussions on inclusion and exclusion (e.g. Shucksmith 2000, Svendsen 2006), embeddedness (e.g. Atterton 2007), identity (e.g. Lee et al. 2005), or local development in general (e.g. Lehto & Oska 2009, Vergunst et al. 2009) are all built on the premises, at least to some extent, that actors located on different points of the social network will have different access to resources and the development of the community will be dependent on how the network structure looks like. As all conceptualizations of social networks are based on the premises that social ties of various natures are what build up society, the following sections describe how some of the most influential scholars categorized network ties.

In their work, Lee et al. (2005), when speaking of social capital, think in terms of networks as they consider the mechanisms by which individual humans capture or even contain benefits of development as a way of exploring the processual character of development. Lee et al. (2005, 271) define networks of social relationships as "flows of information, resources, and identities that are implicated in the production of rural development specifically, and 'communities' more generally". The social networks therefore are built up of ties that are based either on relationships or on processes between actors. It is the uneven nature of these that will lead to the networks – and therefore social capital on a community level – being experienced by actors taking different roles as positive or negative.

One of the most well-known characterizations of network ties comes from Granovetter (1973), who argued that ties may be either strong or weak. Strong ties are those relations that are based on common knowledge and understanding about each other and the manner in which they should interact and usually these links carry high

level of trust. These include connections within the family, kinship and that of close friends. Weak ties on the other hand are of lower frequency, of larger distance and of lower level of trust, and usually between actors who are less well-known to each other (Atterton 2007). It is the structure and the daily reproduction of the ties that maps out groups and communities which individuals will be part of in different extents. As Granovetter (1985, 487) put it:

> *Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations.*

This also means that ties may have different meanings in different contexts and the ties between people may also change categories with time. This makes the researcher face problems when operationalising and applying Granovetter's theory to real life examples.

In her paper, Atterton (2007) introduced three kinds of typologies of based on the work of Mitchell (1973) who defined three network types: exchange, communication and social networks. Here, in case of the first two categories the unit of analysis is the firm: 'exchange' refers to networks of business environments manifested in commercial transactions and trading relations, while 'communication' includes the non-trading, consulting and advisory links between firms and individuals. The unit of analysis for the third network type is the individual and the 'social' network is comprised of a family, friends and acquaintances – these are both embodied people and the cultural values and references that carry the meanings attached to them. According to Atterton (2007) these two basic dimensions of organizations and individuals interact with each other, and even those network elements that have not been planned as specific development actions may make valuable contributions to either social or economic life, as discussed by Lee et al. (2005).

In agricultural community settings, it is a question which aspects of social capital have the most importance. Besides historical legacies and institutional background, it is a question of what role kinship, reciprocity, labour issues play in encouraging people to participate in collective action such as common initiatives and

cooperatives (as investigated in the Hungarian literature by Kelemen & Megyesi 2007, Bodorkós & Kelemen 2007). Lee et al. (2005) suggest that instead of distinguishing between 'vertical' (agro-food commodity chains) and 'horizontal' (learning and education) networks, it is 'social' networks shall be analysed in order to investigate the impacts of associational practices amongst rural people. Atterton (2007) claims that these social networks in rural areas remain to be small, dense, and homogenous what implies they are also exclusionary. Atterton (2007) also argues these networks are more likely to be based on kinship and neighbourhood than loose friendships while they are multiplex what means multiple roles are played by individual participants and the informal networks in rural areas overlap with professional and personal or social ties.

3.2.2. Related concepts and phenomena

Social capital is a concept that cannot be made perfectly independent from the perspective and the scope of the research; properties of the society will be considered positive or negative, good or bad depending on the expectations of the researcher or the individual community members in question. Derived from the network approach and the focus on the configuration of the network structure it is evident that in certain cases strong or bonding, in other cases weak or bridging ties are more preferable and become considered as more resourceful. The uneven nature of networks and access to resources resonates with the works about communities (e.g. Shucksmith 2000, Bell & Newby 1971) that acknowledge that many communities – especially communities of place – are not homogenous but contain many different communities of interest. In development agendas where the development of communities is in question, development will implicitly mean a dilemma how and whose capacities to act shall be developed by certain interventions, how does the community relate to the individuals with different abilities (Shucksmith 2000).

Closely related to the question of uneven capacities are the issues of the insiders and outsiders (Svendsen 2006), inclusion and exclusion (Shucksmith 2000), but also community identity may be derived from this argument (Lee et al. 2005). These topics all stem from the same origin as the question introduced earlier in this chapter regarding

community and its boundary: where are individuals placed within a network and what resources are they able to access. Once again, the question is about positionality, in some cases closed networks are preferable as they are able to help those within (e.g. Portes 1998, Lee et al. 2005). Lee et al. (2005) suggest that a strong sense of identity can also be understood as an aspect of social capital but even as an intangible property of communities as identity will stem from concrete social relationships. In other cases the closed networks are considered harmful (e.g. Putnam 2000, Svendsen 2006). The inward looking networks may lead to formation of excessive bonding social capital that involves exclusion strategies has been termed 'dark side of social capital'. Rothstein (2005) also calls this phenomenon as the 'social trap' whereby individuals and groups are unable to cooperate due to mutual distrust.

3.2.3. The tangible sources of social capital

Without aiming for a comprehensive review of the literature we may already have an idea about the heterogeneity of approaches surrounding the term. Nevertheless, following Brough et al. (2006) it is vital to explore the dynamic nature and the texture of social capital, instead of measuring its volume or identifying its components. This thesis also aims to follow Holt (2008) and DeFilippis (2001) in their call for a better understanding of how social networks add to the reproduction of unequal relations of capital in a socio-economic sense and power in more general terms.

While Lee et al. (2005) argue that a focus on networks of social relationships is helpful in understanding the dynamics of and relationships between aspects of social capital and local development, the authors claim that during the past 20 years social capital has been used to capture the 'intangibles', or non-economic aspects of society. The current research finds it important to find those 'tangibles' that actually lead to the development of network ties and that serve as a medium for generating or transferring power. Speaking of community resilience in this thesis it is evident that social capital has a dual role: it is a way to understand how communities are established and become independent entities but it also helps us understand how certain capacities are generated – both to further stabilize the community or to transform it. This research suggests

social capital is a concept of high value to thinking about resilience, but it is important to know more about how network ties are established, why certain people interact with each other and how these interactions happen and are able to create, reproduce and modify a community in a very material, tangible sense. There is a need to broaden our view of network ties and supplement the generally accepted concept of social capital – that is about human relations – with taking into consideration relations between people and non-human entities. It is the non-human dimensions of society and social capital that this thesis is to build on in order to answer the research questions. While acknowledging the sound and thorough conceptualizations of the approaches of Bourdieu or Putnam, this project argues that trust and habitus for example shall not be considered as originating within a purely human sphere, but such properties of people or the communities are to a large extent shaped by everyday practices, such as farming. This research asks how human relations emerge and become shaped by the capacities that the land, plants and animals have as they are part of a rural assemblage. Therefore, in the following chapters this thesis aims to build an argument that thinks through how resilience as a community's ability to perform stability and change may be built on such a solid theoretical background that includes the aspect of the role non-human components may play in shaping communities and society.

3.3. Conclusions

This project aims to explore how the concept of social capital can be extended by relational approaches to understand what resilience means to rural communities. Chapter Two demonstrated the emergence of resilience and why social capital has been regarded as a factor of resilience. The first part of Chapter Three placed the current work in the broader context of earlier work on communities as it revisited earlier rural community studies. This section has shown how rural community studies, a field implicitly engaged with social relations and networks, may be brought together with the concept of social capital. The second part of the chapter concentrated on the concept of 'social capital' and how it has been used as a tool to understand various social relations

and phenomena. In discussing community and social capital, a focus was put in both cases on why these are important concepts in this study and how they are to be applied throughout the following chapters that deal with rural farming communities.

The sections within this chapter firstly discussed how community studies developed and how community has been a subject of works on resilience. This section introduced the concept of 'community' and rural, agricultural or farming community that is the actual object of this study. The communities were defined as a set of network links that are based on certain practices between people, the land and the commodities, and these connections marked out the lines of both a geographical location and a certain identity. Social capital was found useful for two reasons, as it gives an explanation to the existence, the structure and the stabilisation of the community as an individual entity, and at the same time, the concept also embraces those capacities that are able to change these structures.

The review and critique of the resilience and community resilience literature of Chapter Two concluded that the majority of the literature regarded resilience as a normative concept and thinking in terms of how communities carry out deliberate actions in order to cope with external pressures has been dominant. It was the concept of social capital that embraced various factors of resilience and that was able to grasp how both structural, such as network properties and the individual actions of actors explain together how communities may have capacities to mobilise agency in certain directions. Chapter Three suggested that aspects of social capital discussed in the literature are useful to better understand community relations and properties of networks, but social capital in itself does not explain why these relations emerge and how they transfer agency. Based on this critique, in the following chapter this project proposes moving towards establishing of a relational theoretical approach particularly the assemblage approach. Community resilience, community studies and social capital all have been concerned with social relations but moving to an assemblage approach would allow us to engage with a theoretical framework that is concerned with more than social relations. In thinking through the contribution of more-than-human agency we may understand how community network linkages are established and how social relationships are anchored to and are transformed by relationships between humans and

non-humans. Applying relational approaches may help us understand how network ties are established and how communities and social ties are reproduced by daily practices. This leads to an understanding of resilience where resilience is not a result of deliberate coping strategies that aim to alleviate external shocks and pressures but where resilience is performed via non-intentional actions. Therefore, Chapter Four discusses how assemblage approach offers a framework that is concerned with more than social relations.

IV. MOVING BEYOND SOCIAL CAPITAL TO THE RELATIONAL APPROCH OF ASSEMBLAGE

This thesis set out to better understand what resilience means in the case of rural communities, and to examine how it is performed, by building on social capital scholarship and relational approaches. The critical review of the literature in Chapter Two and Chapter Three unfolded the multitude, the fuzziness and the blending of resilience approaches and at the same time clearly illuminated a number of research gaps and identified directives that serve as a guidance for answering the main research questions of this thesis. The main points of criticism on the literature discussed earlier are converging around the issues of a structure-agency binary. The structure-agency binary culminates firstly, in the obscureness regarding the identification of the actors that serve as the source of power in stabilising or fostering the reshaping of the rural communities. Secondly, the structure-agency binary appears as the spark that lit the debate of whether resilience is the outcome of normative, purposeful actions or it is an embedded property lying in non-intentional affairs within the rural community. Thirdly, the role of structure and agency lead to an uncertainty concerning the sources of power and the responsibility of putting this power into work.

It is also clear that there was no single analytical framework applied within the resilience literature that could be successfully deployed in different social, political, ecological environments and that could provide a methodology suitable in the case of the different kinds of rural communities we may encounter. It is very common that resilience studies result in findings describing dimensions and components that show a high level of eventuality and 'throwntogetherness'(Massey 2005). Even those works that attempt to find or develop some kind of guiding principle or theoretical background supporting their empirical analyses remain short of establishing general principles.

The aim of this chapter is, therefore, to introduce a theoretical approach that may support answering the main questions of this thesis and be also suitable for explaining the experiences of different case studies. The theoretical background this research applies shall be simple enough to be able to embrace all the aspects of resilience but at

the same time capable of tying together all these affairs, including those related to social capital.

This chapter starts with a brief introduction to how the relational approach emerged as a possible way to understand resilience. Firstly, my aim is to elaborate the principles of relational geography and the main schools of thought. Referring to Latour (2005), Woods (2007), Woods & McDonagh (2011), Dwiartama & Rosin (2014), Cheshire et al. (2015) and Darnhofer et al. (2016) the following sections aim to show that a demand has evolved in the past years to dissolve the binary between foregrounding structures, materials, establishments and focusing on the agency of community members as individual actors and highlight the role of interactions, networks and social relations by applying a relational perspective.

Secondly, this chapter introduces one specific relational approach: the assemblage theory of Deleuze & Guattari (1988) – and its interpretation by Manuel DeLanda (2002; 2006; 2016). This part of the chapter is going to illustrate how assemblage theory is concerned with interacting parts and emergent wholes leading to flat ontologies that are "made exclusively of unique, singular individuals, differing in spatio-temporal scale but not in ontological status" (DeLanda 2002, 47). Elaborating his points in detail, the second half of the chapter introduces how the assemblages are built up of components that possess both physical and symbolic properties, and how entities are both materially assembled and become 'territorialised' and symbolically coded and how these assemblages bear emergent properties – that are subject to change. The works of Woods (2015; 2016) are used to illustrate how these assemblages may be imagined in rural settings.

Thirdly, in this chapter DeLanda's work is supplemented with introducing how agency may be conceptualised in the assemblage theory, an issue to which DeLanda did not devote especial attention to, but a field that can be handled as an organic part of his framework. Agency – and the way it helps us understand power – in this sense is going to be distributed, and reside in the relations between the components. This shall guide me towards answering one of the key research questions of this thesis: how is agency constructed within assemblages.

Fourthly, this chapter briefly compares assemblage theory and Actor-Network Theory (ANT) that gained much attention and has a high popularity in recent years. ANT, as described by Latour (2005), is a relational approach that draws on the idea of relationality, contingency and distributed agency of actors and the boundlessness and the ephemerality of actor-networks, and so it is similar to assemblage theory in many ways. Although ANT has already been applied to resilience in a context of rural agricultural production (Dwiartama & Rosin 2014), a number of paragraphs are devoted to show in what ways it differs from assemblage theory and justify why this project consider the latter one as the most appropriate methodological framework to answer my questions.

4.1. Relational perspectives

4.1.1. The cornerstones of relational geography

Several calls have been made to move beyond the essentialist perspectives that carry fundamental weakness in presenting places as fixed, bounded and overly structured. Places have been presented as having "denuded the significance of locality in emphasizing super-structures, and social constructivist approaches that prioritized the discursive to the neglect of the material" (Woods & McDonagh 2011, 155). As opposed to this approach, space has been described as dynamic and contingent (ibid) and as a "product of practices, trajectories, interrelations" (Massey 2004, 5) by those following a relational perspective. Massey (2005) refers to place as hybrid, always changing entanglements of social economic, cultural and political relations (Woods & McDonagh 2011) and considered this as the 'throwntogetherness of place'.

In Jones's (2009) discussion on socio-spatial relations and capitalism he has argued that relations

> "are deeply processual and practical outcomes of strategic initiatives undertaken by a wide range of forces produced neither through structural determinism nor through a spontaneous voluntarism, but through a mutually transformative evolution of inherited spatial structures and emergent spatial strategies within an actively differentiated, continually evolving grid of

institutions, territories and regulatory activities (Brenner 2003; Jessop et al. 2008)" (Jones 2009, 497).

His words resonate with Massey's account according to which "localities are 'made', but are sensitive to the longevity of social structures in many rural areas" (Massey 2005, 171). In this sense, socio-spatial relations do not emerge spontaneously without being shaped by interactions or become fully determined by structures

4.1.2. Calls for a relational approach within rural research and planning

In more practical terms, the potential capacities of relational approaches have met with the demands of rural research and planning. Cheshire et al. (2015) in their work on rural community resilience argue for a neo-endogenous form of rural development that dissolves the tensions between the exogenous approach of the 1970s and the endogenous model of rural development that emerged as a response to the overly technocratic approach of the earlier years. Referring to Lowe et al. (1995) and Shucksmith (2010), Cheshire et al. (2015) speak of a neoendogenous or networked development, that is based on regional processes including a mix of bottom-up and top-down forces and so incorporating elements of both approaches. As Cheshire et al. put it:

> *"Networked (i.e. neoendogenous) development thus advocates an emphasis on local capacity-building, but recognises in addition the essential role of the state and other external actors (...) The implications of these insights for community resilience theory and practice is evident and remind us that the resources for resilience cannot be expected to reside exclusively within the local area, and that local areas need to be integrated within wider networks and structures so that external resources can be readily deployed when they are absent or damaged in the local setting" (Cheshire et al. 2015, 18).*

At the same time, referring to Van der Ploeg and Marsden (2008), Woods & McDonagh remind us, that endogenous development has been portrayed as

"a web of inter-locking components and argue that different government policies and structural conditions influence the way in which these components interact, the relative significance that they have in driving development in a territory, and the outcomes that result" (Woods & McDonagh 2011, 160).

What this means to us is that calls have been made to rethink how the locality has a capacity that it may or may not be able to capitalise on by building and utilising the network linkages it has with other extra-local actors taking place at a variety of scales, such as institutions or even the state.

Woods (2016) has argued for investigating rural spaces in the context of place-based research in the framework of relational perspectives to unravel the "micro-processes and micro-politics through which place is reconstituted" by "treating human and non-human actants agonistically, and be sensitive to the historical legacies of past engagements with global processes and forces" Woods (2007, 503). Woods & McDonagh (2011) have been speaking of the rural globalization following this call when they understand the 'rural' "neither a bounded and definable territory nor as a purely imaginary space without material foundation". Woods and McDonagh consider it instead as relational and

> *"discursively constructed in relation to external referents such as the city or the nation, but also given material form through the hybridization and entwinement of different social, economic and cultural processes and relations to produce evocatively 'rural' articulations" (ibid, 155).*

Woods and McDonagh regard those entities, processes and phenomena that are considered as total units – such as the family farms – actually as products of "diverse economic relations and processes, social processes, labour relations, cultural conventions, landscape practices and family relations" that are in turn tied "into broader networks and structures" (ibid, 155).

The question on how we could dissolve the contradictory approaches of structure and agency by applying a relational approach has also appeared in works focusing on rural resilience. Darnhofer et al (2016) in their paper on farming resilience recognised the analytical and theoretical gap offered by the distinctive approaches, and argue that the

> *"different approaches to farm resilience seem to either privilege the material structures or to highlight that the agency of farmers and other social groups plays an important role" (ibid, 112.)*

and also that "issues linked to power, equity and social justice, which so far have been insufficiently theorized within resilience thinking" (ibid, 117). They speak of a demand for

> *"distinguishing between the biophysical-structural and the social-actorperspective, our aim is to highlight the complementarity of the insights they generate regarding the resilience of farms. We then propose a third perspective, and argue that a relational approach enables a stronger integration of the biophysical and social aspects that make up farming, as well as enables to put the ubiquity of change at the centre of attention" (Darnhofer et al. 2016, 113).*

They claim that with a relational perspective we can overcome the conceptual distinction "between the actor and his (sic!) activity, between structure and agency, between the social and the ecological" (ibid, 117).

According to their understanding, resilience shall not be considered a 'thing' that can be

> *"seized, held or measured, it is not an attribute or property of a farm or a farmer. Rather, resilience is the emergent result of ever changing patterns of relations, relations that are material, social, cultural" (ibid, 118).*

Referring to Emirbayer (1997) and Emirbayer & Mische (1998) they claim that pre-given units of static 'things' which may or may not be linked by processes cannot be used as starting point of resilience analysis; the world instead consists primarily of dynamic, unfolding relations.

Highlighting that relations are continuously made and remade, Darnhofer et al. (2016) find the theoretical background for their statements in the works of Deleuze & Guattari (1988) and Deleuze & Parnet (1996). Referring to these works they speak both of farming and resilience as a Deleuzian 'becoming' that is opposed to 'being' and so understand them as more than stable qualities, arguing that "human beings are characterized by their interactions with the multiple objects and beings in their environment" (ibid, 119). Citing Innes & Booher (1999) and Cleaver (2002) they conceptualise this on-going process of becoming as a 'bricolage' in which heterogeneous objects and concepts are combined and ideas get tinkered together. In practical terms, the paper of Darnhofer and colleagues comes to the finding that farming itself is constantly being remade and relational thinking allows insights into farmers'

experiments, the relations between the farmers, grass, the nutrient flows may all change in an unplanned and unpredictable manner that was unplanned.

A common characteristic of the above introduced works is that they speak out for, and refer to relational approaches to understand issues of rural change in three different contexts. However, they do only reach for a relational perspective as for points of reference and do not elaborate in details how the various approaches could be successfully deployed to support our understanding of how rural change and resilience operate.

Not only has resilience been considered in terms of a relational approach. The notion of 'social' itself has been a continuously contested, repeatedly scrutinised and reconceptualised notion we may extend some of these debates surrounding it to 'social capital' (discussed more in details in Chapter 2) and think through how a relational approach may add to the reconsideration not just of resilience, but of social capital as well. To do so, we have to abandon the lay understanding of the term 'social', and reach back to the original, wider meaning. According to the definition and application of Latour (2005) returning to this original meaning of 'social' means to concentrate on 'associations'. According to his explanation:

> *"though most social scientists would prefer to call 'social' a homogeneous thing, it's perfectly acceptable to designate by the same word a trail of associations between heterogeneous elements. Since in both cases the word retains the same origin—from the Latin root socius—it is possible to remain faithful to the original intuitions of the social sciences by redefining sociology not as the 'science of the social', but as the tracing of associations" (Latour 2005, 5).*

In his example of the meaning of 'social' he claims it "does not designate a thing among other things, like a black sheep among other white sheep, but a type of connection between things that are not themselves social" (ibid). These 'associations' or 'connections' described here by Latour are also the cornerstones of relational geography. Opposed to absolute space of a Euclidean perspective, relational space has been defined as a condition where – according to Jones – space is defined

> *"only in relation to the object(s) and/or processes being considered in space and time (…) and there is no defined or fixed relationship for locating things under*

consideration: (…) where distance/relationships are relative and change over time and across space" (Jones 2009, 390).

Derived from the definition of Jones, social space is constructed by networks of various entities and cannot be considered by essentialist means.

Social capital in this sense may move away from 'human society' and include associations between all sorts of entities; the 'capital' may lie purely in the connections and relationships not depend on whether these are between humans, their groupings, organisations, or even non-human objects. Although there have emerged works that seek to embed social capital in a 'relational' framework (e. g. Donati 2011; 2014), or to emphasize how bodies may be "components of broader sociospatial relationships, which become differentially imbued with value" (Holt 2008, 242), very few attempts (e.g. Lendvay 2017) have fulfilled these requirements with special regards to how humans and non-humans reciprocally shape their relations.

In this study, an attempt is made to find theoretical framework that attracts an analytical framework in which is able to fit in the ideas related to rural community resilience. As relational approaches are found to be a good starting point, the next sections are going to elaborate one specific approach in details: assemblage theory. As this approach was found to be most appropriate to serve as a theoretical background, assemblage theory is applied later throughout three empirical chapters of the thesis (Chapter Seven, Chapter Eight, Chapter Nine). After introducing assemblage theory, a brief justification is given to why assemblage approaches are preferred as the main theoretical background instead of Actor-Network Theory, and which certain elements of ANT may support our understanding of resilience.

4.2. Assemblage theory

This thesis attempts to put rural community resilience thinking onto a firmer ontological footing by applying relational approaches and assemblage theory in particular to the cognition of rural communities and how they may perform durability and an ability to change at the same time.

Assemblage theory has attracted wide attention in the past years from human geographers (e.g. Marcus & Saka 2006, Collier 2006, Sassen 2008, Allen 2011, Anderson & McFarlane 2011, Dewsbury 2011, Featherstone 2011, Legg 2011, McFarlane 2011, Anderson et al. 2012). The term of assemblage denotes emergence, multiplicity and indeterminacy and via the composition of diverse elements leads to a new understanding of the socio-spatial but there is no single correct way to deploy the term.

According to Anderson and McFarlane (2011) works on assemblage can be categorised in two ways. Firstly, it is used through different routes in geography as a descriptor, an ethos and a concept. As a descriptor it may then be "connected up to a potentially limitless array of concepts" (ibid, 125) and be applied to any provisionally structured formation while carrying the risk that it enables anything to be described as 'an' assemblage through co-functioning. As a concept Anderson and McFarlane (2011) refer to Deleuze and Guattari (1988) as they regard it as a constellation of elements that have been selected from a milieu, organised and stratified. The key to the latter understanding is that assemblages can be divided into two 'axes'. The first is "a machinic assemblage of desire and a collective assemblage of enunciation" (Anderson & McFarlane 2011, 126). Anderson and McFarlane refer to materiality as a "collection of qualities, things and relations" and to the expressive role as a "collection of languages, words and meanings" (ibid, 126). Territorialisation as the second axis is described as "movements as heterogeneous parts come together and come apart" (ibid, 126). Secondly, in terms of currents of use assemblage emphasizes a) gathering, coherence and dispersion and therefore is an orientation, b) connotes groups, collectives and distributed agencies, c) means emergence rather than resultant formation, d) most commonly, stressing fragility and provisionality it is brought together with networks as an 'after' actor-network theory.

The next sections are going to introduce one specific interpretation of assemblages: an approach that has its abstract foundations in the works of 'French philosophers' but that has been translated into a practical language by philosopher, architect and social anthropologist Manuel DeLanda. The approach discussed in details

has been applied in rural geography contexts, although the assemblage theory of Deleuze or DeLanda has not been applied in the fields of resilience studies yet.

4.2.1. The framework of assemblage theory in DeLanda's interpretation

Those working with the concept of assemblage emphasise various theoretical underpinnings. It is rather difficult however to set out the critical properties of assemblage thinking and this has many reasons. Firstly, it is because of the large number of concepts that the founders of the theory Deleuze and Guattari introduce. They also understand their concepts differently throughout their work (assemblage, rhizome, apparatus, haecceity, territory etc.). Secondly, there are many interpretations and refinement of the initial thought created around assemblage that bring in new theoretical considerations that Deleuze and Guattari might not or only tacitly touch upon (realism, exteriority, catalysis, territorialisation, coding etc.). Thirdly, practical work applying assemblage an approach has been built on this secondary literature while breaking away from the original thought, terminology and possibly strict theoretical framework. Fourthly, different disciplines, subjects and enquiries may stress various components differently themselves. Here, I highlight the major criteria that are indispensable to setting up assemblage theory as an approach to the analysis of a geographical location, a community of practice and the processes that both determine and jeopardise the existence of the community.

4.2.1.1. Exteriority - relations between parts and the whole

A key property of assemblage thinking is the relations of exteriority (DeLanda 2006) or anti-essences (Graham 2007). Exteriority of relations only tacitly lies in the basic works on the concept as it is not explicitly set out by Deleuze or Guattari. DeLanda (2006) however considers it the opening idea to understanding assemblages. In contrast to the organism metaphor according to which states and society operate as an organism where organs fulfil their function based on the relations they have to others, assemblages are wholes whose component parts are self-subsistent and their relations are external to each other.

The first instance of the organismic and structuralist conceptions of society follows the relations of interiority: "the component parts are constituted by the very relations they have to other parts in a whole" (DeLanda 2006, 9). These wholes possess an inextricable unity and the components do not exist independently from the relations in which they relate to each other as strict reciprocal determination exists between the parts (DeLanda 2006). A question of debate here is the location of the emergent properties. One might argue that the lack of interiority would merely lead to an aggregation of properties of components of the whole without the emergence of new properties. However – still assuming there exists a whole with some irreducible properties – he highlights the existence of an 'intermediate' condition where this whole is not seamless but is analysable into separate parts and the mechanisms are not fixed in either direction and as Bunge (1979, 156) puts it the "possibility of analysis does not entail reduction, and explanation of the mechanics of emergence does not explain emergence away". DeLanda goes further:

"Allowing the possibility of complex interactions between component parts is crucial to define the mechanisms of emergence, but this possibility disappears if the parts are fused together into a seamless web. Thus, what needs to be challenged is the very idea of relations of interiority. We can distinguish, for example, the properties defining a given entity from its capacities to interact with other entities. While its properties are given and may be denumerable as a closed list, its capacities are not given– they may go unexercised if no entity suitable for interaction is around – and form a potentially open list, since there is no way to tell in advance in what way a given entity may affect or be affected by innumerable other entities" (ibid, 10).

Therefore, according to DeLanda the main idea behind the assemblage approach is that there are existing entities that *may* become component parts of larger 'wholes'. Entities have numerous properties that make them potential members of populations and according to both circumstances and the properties of these parts and so the components of an assemblage may be detached from it and plugged into a different assemblage in which its interactions are different.

4.2.1.2. Multiplicity

Multiplicity is probably the most important concept of Deleuze (Parr 2005). It is the basic concept serving as a foundation for the concepts of rhizome and assemblage

among others. It appears throughout the course of his work, however, it does so in many different ways and contexts in which he applies it, making multiplicity one of the most difficult concepts to grasp. As Deleuze & Guattari (1988) put the principle of multiplicity:

"The point is that a rhizome or multiplicity never allows itself to be overcoded, never has an available or supplementary dimension over and above its number of lines that is, over and above the multiplicity of numbers attached to those lines. All multiplicities are flat, in the sense that they fill or occupy all their dimensions: we will, therefore, speak of a plane of consistency of multiplicities, even though the dimensions of this "plane" increase with the number of connections that are made on it. Multiplicities are defined by the outside: by the abstract line, the line of flight or deterritorialization according to which they change in nature and connect with other multiplicities. The plane of consistency (grid) is the outside of all multiplicities. The line of the flight marks: the reality of a finite number of dimensions that the multiplicity effectively fills; the impossibility of a supplementary dimension, unless the multiplicity is transformed by the line of flight; the possibility and necessity of flattening all of the multiplicities on a single plane of consistency or exteriority, regardless of their number of dimensions" (ibid, 9).

Therefore, multiplicity shall be considered as a substantive noun instead of an adjective as it acts as a complex structure that is not locked to any pre-existing unity: it is not created following the fragmentation of a greater whole and multiplicities cannot be regarded as different expressions of the same whole or unity. Instead, multiplicity is a patchwork or ensemble that does not become a totality or whole. In the example of a house (used by Parr [2005] or DeLanda [2006]), the house is a patchwork of concrete structures and habits and however, one may list certain elements at the end of the day there

"is no way of determining what the essence of a particular house is, because we cannot point to anything outside of the house itself to explain or to sum it up – it is simply a patchwork" (Parr 2005, 181).

Using this rather unusual example – as we do not generally consider a house built up of tiny interacting bits but a whole – is exactly to make the reader understand that even the most conventional concepts we use can be deconstructed into parts that may fit into different contexts.

4.2.1.3. Material and expressive roles

Deleuze and Guattari situate assemblages in terms of two 'dimensions'. The first of these dimensions is the types of roles that a component can play from an analytic side of the approach. On this axis, a purely material role is situated at one extreme, and a purely expressive role at the other extreme.

The components of social assemblages that play a material role vary widely, but at the very least involve a set of human bodies properly oriented (physically or psychologically) towards each other (DeLanda 2006, 12). The material aspects also include the various technological tools (such as those which constitute military power), physical resources (such as oil or water), and spatial settings (such as the architecture of a building or city, or the geographical location of a particular place). Communication infrastructures are also material aspects of assemblages (Srnicek 2007).

The expression can also take a wide variety of forms: most obviously in spoken and written language, but also cultural signs, or laws. In social movements, they can also include expressions of solidarity, among other elements as we will see. Nations rely upon various symbols, rites, traditions and practices to constitute an expression of the 'imagined community'. On an individual level, they can include things like minor gestures and inflections of local dialects (Srnicek 2007).

These roles are variable and may occur in mixtures, that is, a given component may play a mixture of material and expressive roles *by exercising different sets of capacities* (DeLanda 2006). The variants of the roles lie in between: two extremes can be abstractly separated, in concrete situations we are faced with assemblages which can blur the distinction. For instance, while – using the example put by DeLanda – military power may consist of specific physical and technological objects (and therefore be material), it is also the case that these objects act as an expression of a nation's strength (as noted by a number of international relations theorists). The role which a component plays is, therefore, dependent upon which capacity it is exerting. This example also reveals an important point about the nature of expression: it is not reducible to either linguistics or to representation these roles are variable and may occur in mixtures, that is, a given component may play a mixture of material and expressive roles by exercising different sets of capacities (DeLanda 2006).

We can see the issue of material and expressive roles clearly in the disjunction posed by Foucault between the discursive and the non-discursive. The concrete disciplinary assemblage contains, in one actualization, the prison and penal law. On the one hand, in the prison there is both a certain 'substance of material' (the bodies of singular prisoners with their own properties and capacities, along with the physical material required for the prison) and a particular 'form of material' (the architecture of the prison, the distribution of light and darkness in the Panopticon principle, the practices of regimentation). On the other hand, the penal law system has its own 'form of expression' (the set of statements pertaining to delinquency, the history of legal precedents, the organization of legal arguments, etc.) which creates its own 'substance of expression' (the discursive objects produced by the various definitions of 'delinquency') (Foucault 1995).

To see how the material and expressive components of the assemblage may be imagined in rural settings, we shall take a look at how Woods (2016) sketched what materiality and symbolic properties of rural places may consist of. According to his example:

> *"the material components might include the landscape, buildings, crops, livestock, wildlife, people, economic commodities that are produced or traded, and cultural artefacts, among others" (Woods 2016, 32).*

Expressive components, on the other hand, could include

> *"the aesthetics attributed to the landscape, the emotional attachments of people to particular sites and localities and their sense of identity, and even an nebulous idea of the rural idyll as it is invested in an experience of calm, tranquillity and nostalgia" (ibid).*

4.2.1.4. Territorialisation and deterritorialisation

Territorialisation is the group of processes which solidifies the material identity of the assemblage by "increasing [either] its degree of internal homogeneity or the degree of sharpness of its boundaries" (DeLanda 2006, 12). In order to allow an assemblage to emerge there is a minimum level of internal organisation of territorialisation has to be established in some form. Although this process ever so often happens in a physical or material sphere with respect to Euclidian-like, geometrical

space across spatial boundaries – be them on a personal scale between persons or on a regional level between states. As DeLanda describes the literal understanding:

> *"Face-to-face conversations always occur in a particular place (a street corner, a pub, a church), and once the participants have ratified one another a conversation acquires well-defined spatial boundaries. Similarly, many interpersonal networks define communities inhabiting spatial territories, whether ethnic neighbourhoods or small towns, with well defined borders. Organisations, in turn, usually operate in particular buildings, and the jurisdiction of their legitimate authority usually coincides with the physical boundaries of those buildings." (ibid, 13)*

Territorialising processes often take place within specific areas leading to changing internal distribution or structure as a result of which we either experience homogenization or segregation. Territorialisation can also be understood in more abstract, non-material sense that serves as the basis for imagined categorizations, classification or hierarchies that are based on similarity embracing any kind of sociotemporal scale – time and space should be conceived in a topological-like, networked space where the key is the existence of connective relations. These relations may be established between heterogeneous subjects from within fields of representation, subject, concept and being, not fixed to one image, signification or subjectivity. The territory itself here means a series of constantly changing "heterogeneous elements and circumstances that come together for various reasons at particular times" (Parr 2005, 281). The commonality between all the above understandings is that territorialisation is a process "whereby material systems come to be organized around a particular attractor" (Srnicek 2007, 63) and synthetic process that produces particular relational forms, patterns of interaction and "more or less permanent articulations" between parts (DeLanda, 2006, 14). Assemblages reach an identity, a degree of stability, homogeneity and territorialisation depending on the nature and relation between the heterogeneous components that build them up.

In rural settings, according to Woods (2016), territorialisation may include:

> *"community structure and practices, its social stratification and the relations between established local families, but also through aspects that literally tie the place to territory: the settlement form and field system; the practice of working the land through farming or forestry and the intimate, embodied knowledge of territory which that imbues; the passing down of property through farm*

inheritance; the identification of landmarks as symbols of place identity or boundary markers" (Woods 2016, 32).

The assemblage as a territory itself remains a malleable 'site of passage'. Although territorialisation may seem to be superior to any other processes surrounding the assemblage in the simplified assemblage theory interpretations of DeLanda, in the original works of Deleuze an opposing set of forces – deterritorialisation – seem to have and even more significant role in assemblage theory.

Deleuze and Guattari define and apply deterritorialisation in a broad spectrum throughout their works (Parr 2005). In their book 'Anti- Oedipus' they describe deterritorialisation as "a coming undone" (Deleuze & Guattari 1983, 322), later in 'Kafka: Toward a Minor Literature' (Deleuze & Guattari 1986, 86) they speak of a Kafkaesque literary deterritorialisation that mutates content "forcing enunciations and expressions to 'disarticulate'" (Parr 2005, 69). In 'A Thousand Plateaus' deterritorialisation is described as the assemblage's cutting edge (Deleuze & Guattari 1988, 88) with the capacity of producing a 'suicidal movement' (Srnicek 2007). Finally, in 'What is Philosophy?' (Deleuze & Guattari 1994, 68) deterritorialisation is treated as taking place in both physical, mental and spiritual spheres. In more practical terms, deterritorialising are factors creating a turbulent environment that refer to movements producing change: deterritorialisation indicates the creative potential of an assemblage, to loosening up of fixed relations and the weakening of its identity (Parr 2005).

A common way of putting the core ideas of assemblage theory is to describe the material and the expressive, and territorialisation and deterritorialisation, as axes that cross each other (e.g. Harman 2007). This might imply the existence of polar opposites and that elements and components of the assemblage take extreme, exclusive positions as on certain points of the grid or that the assemblage itself would be located on one point of the scale of territorialisation. Although not emphasised in recent and more practical interpretations of assemblage theory (e.g. DeLanda 2006), Deleuze and Guattari deconstruct these dualistic frameworks and speak instead of a third process of reterritorialisation. According to the way they apply the concept of deterritorialisation, it inheres in a territory "as its transformative vector; hence, it is tied to the very possibility of change immanent to a given territory" (Parr 2005, 69).

From a qualitative perspective, there are two distinct forms of territorialising forces: absolute and relative (Parr 2005, Srnicek 2007). Absolute deterritorialisation is an immanent "way of moving" independent from speed and time and in Deleuzian terms it is a purely virtual 'line of flight' (Deleuze & Guattari 1988). It is also differentiated and is ontologically prior to relative deterritorialisation (Parr 2005, 69). Relative deterritorialisation is an actual move towards a known point of arrival. As Protevi puts it, it is "the creation of new attractors and bifurcators" (Bonta & Protevi 2004, 106) where a change occurs towards a fixity of thresholds along which the system transitions into various already established behaviour patterns. Examples of reshaping territorial forms within the countryside may mean in- and out-migration, the establishment of new buildings and other construction, the closure or rationalisation of local services, the amalgamation of municipalities, according to Woods (2016).

4.2.1.5. Coding and decoding

On the basis of the specialised expressive media (material/expressive and territorialisation/deterritorialisation), emerged a third one that provides a second synthetic process. As DeLanda (2006) puts it coding is a second articulation performed by genes or words that consolidate the effects of territorialisation and further stabilises the identity of assemblages. Coding is the process that serves as the source of certain attributes of a biological organism (genes) or legitimate authorities.

The idea of using codes stems from Deleuze's interest in the biological notion of the genetical codes (Smith 2012), – as Deleuze himself puts it – "the general traits characterising a code have been rediscovered today in what is called a genetic code" (Deleuze & Guattari 1983, 248). Deleuze finds parallel attributes between biological and social reproduction and identifies the information carried in genes as "a common characteristic of human cultures and of living species" (ibid, 289). There are traces of this similarity in a number of points.

The first property of codes – when analysing Deleuze's understanding of their role – as Smith (2012) highlights, is *inscription* with the meaning that "the code is what allows for the transmission and reproduction of information, which is why Deleuze terms it a synthesis of inscription or recording" (Smith 2012, 169). As visible in the

biological instance, the genetic material of the parents become mixed via "the incessant production of varied production of varied individual differences" (Deleuze 1994, 249) during sexed reproduction. Although coded information is transmitted, we cannot infer to the exact nature of the offspring according to the set of information carried by only any one of parents as it is always a totally new individual that comes to life (Smith 2012).This applies to social reproduction, according to the example of Deleuze even in the most 'primitive' societies the simplest systems entail complex practices and strategies that make the future unforeseeable:

> *"Ethnologists are constantly saying that kinship rules are neither applied nor applicable to real marriages: not because these rules are ideal but rather because they determine critical points where the apparatus starts up again" (Deleuze & Guattari 1983, 151).*

Secondly, the code operates at a molecular level, not on that of well defined, massive and governed 'molar' entities, but on the level of 'molecular' microentities of ineffable sensations, "conversation having nothing to do with the state of the world at large" (Parr 2005, 176). The genetic code is not considered a structure, but a domain "where nothing but the play of blind combinations can be discerned" (Monod 1997, 98), nothing is seen in advance and anything can be possible – and this implies a constant decoding of what came before it (Smith 2012).

In more practical terms, following the definition of Deleuze and Guattari, coding is a process that operates on the *expressive* dimension of the assemblage but that can also have indirect impacts on its material side as well (Srnicek 2007). The coding process operates via inscription or recording by means of a sign, in the social sphere, this primarily involves coding functions through language. Institutions are an often cited example (e.g. DeLanda 2006, Srnicek 2007) where coding occurs in relation to expressions of power be them the bureaucracy, the legal system or other forms of authority.

In practice, coding may become embodied in the subjective and collective geographical imaginations of the countryside, but also in processes of "naming, mapping and measuring, and through formal representations such as eligibility for rural development funds" (Woods 2016, 34). Coding is not confined to language, discourses

and other intangible infrastructures; according to (Kendall & Wickham 1999, 35) "the crucial thing is to avoid the idea that discourse is a purely linguistic term". As Henriques et al. (1984, 105) put it: "every discourse is part of a discursive complex; it is locked in an intricate web of practices, bearing in mind that every practice is by definition both discursive and material". In this sense can coding can be extended to

> *"components of rural places include cultural artefacts such as folk dress, vernacular architecture and furniture, regional dishes and food products, folk songs and music and so on." (Woods 2016, 34).*

In any of the above realms, there are processes of countermovement that destabilise established codes. These are considered as decoding and these yield assemblages which do not fit the organismic metaphor.

> *"In biology, such decoding is illustrated by animal behaviour which has ceased to be rigidly programmed by genes to be learned from experience in a more flexible way. This decoding produces, for example, animal territories, the assemblages generated when animals have gone beyond the passive expression of information patterns…" (DeLanda 2006, 15).*

According to DeLanda a social example of decoding would be an informal conversation as opposed to a formal conversation that has strict rules in its language and space but any contesting established laws, their interpretation or traditional social categories is a decoding process. Of especial significance here is the term 'rigidly programmed', the more formal and rigid rules are the more such junctures are coded. With the weakening of such rules, expressive elements lose their rigidity and may open up to refashioning through political movements (Srnicek 2007). Later on however assemblages do not cease to exist but transform into assemblages where participants have more freedom.

A final question is if we shall consider codes and coding as attributes of component elements to the assemblage. According to DeLanda (2006) these are simply component elements of the assemblage *themselves*, and are independent of those entities they drive:

> *"In an assemblage approach, genes and words are simply one more component entering into relations of exteriority with a variety of other material and expressive components, and the processes of coding and decoding based on these specialized lines of expression operate side by side with nongenetic and nonlinguistic processes of territorialization and deterritorialization" (ibid, 16).*

Following DeLanda, and thinking in Foucauldian terms, we may say the body is a discourse itself, and we may consider certain objects as the codes themselves. However, in case of more complex objects such as animals, we may need to deconstruct the object (and understand it as an assemblage itself) to be able to understand the roles it plays.

4.2.1.6. Enabling and restricting

Assemblage theory may, in short, mark the lines of flight, those avenues that may serve as the places and times of change but a limitation to assemblage theory is that it does not explicitly elaborate why and how certain components push forward or hold back transformation. In other words, the relation between components sometimes means a sort of 'lubrication' that fosters permanent modifications but in other cases, it is a 'spring' that may enable temporal modifications but will eventually urge reorganisation. As Woods illustrated how assemblage theory can be imagined as a framework to rural change:

> *"Assemblage theory (…) offers an alternative perspective in which restructuring can be understood not as the erosion of place-difference, but as the reassembling of places as the substitution of material and expressive components is accompanied by processes of reterritorialisation and recoding. Take, for example, the impact of post-war agricultural modernisation. From an assemblage perspective we see that agricultural modernisation involved the introduction of new material components, including machinery and agri-chemicals, together with new farming practices that produced new territorialisations with larger farm units and larger fields, and led to new relations of exteriority as farmers increasingly produced commodities to contract for supermarkets and food processing corporations. The reduction in demand for farm labourers – a redundant material components – meanwhile prompted deterritorialization in the form of changed social, labour and power relations in the village (…) through these incremental changes the assemblage of the village has transformed, but it remains a place, an assemblage, a territory" (Woods 2016, 35).*

Beyond visualising how deploying the tools offered by the methods of the theory may happen in practice, this example also highlights that viewing resilience through the lens of assemblage theory is value-free and void of normative dimensions. It merely provides as a canvas where the researcher may adjust the variables to the local

circumstances for: the resilience 'of what', 'to what' and 'what is meant to be preserved'. The unfolding of the relational ties and power dynamics of rural change will remain the cornerstones of the theory.

4.2.2. Agency

DeLanda's interpretation of assemblages discussed so far does not fully unpack the capacity of assemblage theory in providing a theoretical framework for analysing resilience. Although his approach is compatible with the idea of the component parts having agency, and help us understand how they exert the power required to provide a certain form of fixity or trigger changes to the assemblage, DeLanda does not elaborate how the component parts may do so.

In his works, Manuel DeLanda talks about 'catalysis' that has a slightly different meaning to agency. In his interpretation, assemblage is created following the coming together of various elements and these components have their own properties and relations of exteriority, which means that properties of these component parts can never explain the relations which constitute the whole and at the same time properties of a whole cannot be reduced to the attributes of the composing elements. As DeLanda (2006) cites Deleuze, however, the relations may be exercised by the component's capacities: "relations do not have as their causes the properties of the (component parts) between which they are established" (Deleuze 1991, 98).

Neither Deleuze nor DeLanda give a clear definition to how agency is constructed. The relationship between agency, catalysis, capacity to act, force, power seems to remain blurred. A further related question unanswered is: which properties of the component parts of an assemblage explain the structure and other properties of the assemblage, and *why*? Is the catalysis a *property* or a *capacity* of a component? While DeLanda (2006) speaks of an "entire repertoire of causal interactions" (ibid, 22) he elaborates in details catalytic causality, linear causality and statistical causality (and catalytic causality is the one which Harman (2007) concentrates as well, as I shall detail later). Taking a closer look at these cases, relations of interiority are defined by necessity, built on the theory of linear causation where same causes would have the same effects at all times. If totalities could be disassembled to their components we

123

would always be able to infer to the elements building them up. Relations of exteriority are, however, only *contingently* obligatory. According to the example of the orchid and the wasp often reappearing in Deleuze & Guattari's work:

> *"The orchid does not reproduce the tracing of the wasp; it forms a map with the wasp…What distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real. The map does not reproduce an unconscious closed in upon itself; it constructs the unconscious." (Deleuze & Guattari 1983, 12).*

DeLanda would interpret this as:

> *"conceiving an organism as an assemblage implies that despite the tight integration between its component organs, the relations between them are not logically necessary but only contingently obligatory: a historical result of their close coevolution. In this way assemblage theory deprives organismic theories of their most cherished exemplar" (DeLanda 2006, 11-12).*

Further, the relation between parts and the whole of the assemblage is described in a spectacular way when Deleuze, illustrating how wholes (be them worlds or spatial aggregates) are related to duration using *molecularity*. In his example, when a teaspoon of sugar is dissolved in a glass of water the 'whole' is not the container and its contents but the action of creation taking place in the ionisation of the molecules of sugar, a sort of "pure ceaseless becoming which passes through states" (Deleuze 1986, 10).

We should also ask whether the catalyst is a *property* or a *capacity* of the object, and the answer seems to be, it is a capacity. It is capacities, in other words, that do all the relational work for DeLanda, yet these capacities must somehow be grounded in real properties, or they would never exist. But what *is* a non-relational property, exactly? The problem is that this molecular structure is itself an assemblage, and hence is built out of the capacities of its 'sub-personal elements'. And even if this were not the case, the molecular structure occupies a given point in space with specific metric relationships with its surroundings. There seems to be no way to separate the actual from the relational, and hence all "properties" in the usual sense would reduce to capacities – unless we made all properties virtual or quasi-causal, lying outside any particular individual thing. In this case, it would not be the things that interact, since they would merely be sterile crystallisations atop a dynamic genetic process. This is a

possible option. But a better option is to allow non-actual properties, belonging to concrete individual things that exceed their relations to all other objects. To define individuals as purely 'actual' reduces them to states of affairs, from which the world is then rescued by positing a deeper layer of quasi-causes.

DeLanda makes a few other points about the importance of non-linear causation as well. Unlike logic, in which each step seems to unfold with mechanical necessity from the previous one, causation is *productive*. There is always more in the effect than was in the cause, and again one suspects that this 'more' is most visible in the *accidental* features of the effect (Harman 2008). Catalysis implies that different causes can lead to one and the same effect – as when a switch from one internal state to the other is triggered by different stimuli – and that one and the same cause may produce very different effects depending on the part of the whole it is acting upon – as when hormones stimulate growth when applied to the tips of a plant but inhibit it when applied to its roots. DeLanda adds that inner processes are simply interactions between the component parts of an entity and do not imply that these parts are mutually constituted.

Interestingly, as Woods noted, Deleuze and Guattari never defined the concept 'assemblage', instead "use it as a composition of things as unstable collections of elements and refer to the process of coming together (or agencement in the original French)" (Woods 2016, 30). The term 'assemblage' – that has a rather similar meaning both in French and English – has appeared in the original works of Deleuze and Guattari numerous times, however, not in a philosophical sense, and the French authors deliberately put the term 'agencement'. The nuances between the meanings of agencement and assemblage in French and English lost in the translations show that the assemblage thinking of Deleuze and Guattari has unexploited resources that neither have been discussed by DeLanda and nor have been elaborated here so far. The English usage of the term restricted to more technical terminology designates a collection of things, while in French its meaning is wider including blending, collating, gathering and joining (Phillips 2006). However, as Phillips puts it:

> *"agencement is a common French word with the senses of either 'arrangement', 'fitting' or 'fixing' and is used in French in as many contexts as those words are used in English: one would speak of the arrangement of parts of a body or*

machine; one might talk of fixing (fitting or affixing) two or more parts together; and one might use the term for both the act of fixing and the arrangement itself" (Phillips 2006, 103),

what means it indicates a higher level of 'activity' and implies the presence of agency.

In the following paragraphs I move away from DeLanda's work and explore other ways in which agency has been conceptualised within the framework of assemblages. Anderson et al. (2012) suggest that using assemblage thinking may result in an answer to the questions of how the 'elements' or 'parts' of an assemblage function in processes of composition and how causality and agency allow us to consider the dynamic between the durability of assembled orders and their transformation. They claim that derived from the statement discussed earlier: 'relations are external to their terms', what thinking with assemblages might allow for, is a

> *"world populated with a motley array of entities with differing properties and capacities: infrastructures, buildings, unicorns, ideas, circuit boards, tears, air, handgliders, hatred – all are capable of acting and making a difference" (Anderson et al. 2012, 180).*

Assemblage thinking necessitates focusing not purely on the outcome and how agency produces resultant forms. It also requires attention to how the agency of both "the assemblage and its parts can transform both the parts and the whole" (ibid, 180). Causality therefore is not linked to a pre-given sovereign agent, but is embedded in more interactive, non-linear processes of assembly that may call forth in a resulting product.

Anderson et al. (2012) find three broad and somewhat successively interconnected ways of grasping agency and causality represented by Harman (2008), Barad (2007), Bennett (2004; 2005; 2010), Li (2007) and Harvey (2009) as they stream into the debate their works on assemblages and agency. As Anderson and colleagues rely on various bits of the available literature using different understandings to assemblage, the approaches I discuss here are not especially related to each other, unfortunately.

Graham Harman's (2008) understanding shifts the analytic perspective of assemblages from end-products to agents in "the transient crystallizations of a longer

process" (Harman 2008, 373). Harman suggests that agency within the assemblage shall be considered via a "doctrine of emergence", that implies a theory of society where "all entities result from a swarm of tinier subcomponents that do not melt into a seamless whole" (Harman 2008, 367). Anderson et al. 2012 cite Hetherington & Law (2000) as they claim assemblages are shaped as they are made:

> *"agents of transformation or stability may be singular or multiple, large or small, within or outwith the assemblage, and their operation may be sudden or gradual" (Anderson et al. 2012, 180).*

They find assemblages to be regarded as operations beyond a set of relations emerging and holding together across differences; they are also an ethos of relations between durability and transformation. The ethos they identify here is about how durability – as a result of sedimentation, repetition or habit – is sustained or not, instead of either speaking about a blurry mixture of unstable and ever-changing entities, or fixity and essence that they argue shall be avoided. Anderson et al. (2012) persist that not only there shall exist a possibility for entities to continuously be formed and deformed via particular forms of transformation more probable than others, but there always need to be some

> *"forms of power through which particular relations are held stable, fall apart, are contested and are reassembled" (ibid, 180).*

The authors find it important to locate this power as generated internally, as a contingent and multiple force relation to which assemblages are made and remade.

Anderson et al. (2012) further elaborate how assemblage thinking is simultaneously concerned with the gathering together of entities and the agency of component parts as they compare Barad's (2007) work on the agency of 'phenomena' and Bennett's (2010) ideas of the agency of assemblages. They open the argument by claiming that the rethinking of agency may provide "a way of describing how different agents within the assemblage may possess different resources and capacities to act" (Anderson et al. 2012, 181). This resonates with Barad's (2007) 'agential realism' and Bennett's (2010) 'vibrant matter' that are both based on the idea that "agency lies in distributed processes of intra-active becoming, where "materiality is as much energy, process, flow and intensity as entity and extension" (Anderson et al. 2012, 181).

Barad's work on 'phenomena' moves away from the assemblage approaches discussed until now in the sense that she does not focus on autonomous component parts. As she writes: "phenomena are the ontological inseparability/entanglement of interacting 'agencies'" (Barad 2007, 139), and entities as phenomena exist not within themselves but as co-constituting intra-action. Considering 'agency' as the primary ontological unit means that even matter becomes not less a fixed substance, but much more a "substance in its intra-active becoming – not a thing but a doing, a congealing of [human and non-human] agency" (Barad 2007, 151). At the same time, Anderson et al. remind us that in this understanding agencies cannot be imagined as individual elements either, the "distinct agencies do not precede, but rather emerge through, their mutual constitution" (Anderson et al. 2012, 181) as well. Barad's work, therefore, may be understood as a collateral conceptualization of assemblage thinking with a supplementary role in our case. While in assemblage thinking the focus is on the parts that are regarded as autonomous actors and that may or may not alter the nature of the assemblage, in Barad's work, agency, – rather than being a property – is itself the name of the ongoing reconfiguring of the world.

As opposed to Barad's work, Bennett (2010) focuses on the agency of both the component elements and the wholes they build up, based on the exteriority of relations. Bennett's conceptualization is different to Barad's notion of assemblages in that according to Bennett, the component parts do not maximize their potential outside the assemblage. As Anderson and colleagues put this:

> *"parts can be disconnected or plugged into a different assemblage in which their interactions are different, and these changes in the arrangement and interaction of parts have the potential to reconfigure an assemblage as new alliances are forged" (Anderson et al. 2012, 181).*

The constant transformation and emergence of assemblages is the result of both the appearance of new actors and their entrance to the assemblage but also the development of previously under-used and unexploited capacities between component and wholes. As Bennett puts it:

> *"each member and proto-member of the assemblage has a certain vital force (…) And precisely because each member-actant maintains an energetic pulse*

slightly 'off' from that of the assemblage, an assemblage is never a stolid block but an open-ended collective, a 'non-totalizable sum'" (Bennett 2010, 24).

Anderson et al. (2012) discuss how specific agential intra-actions articulate assemblages:

"rather than attributing causality to humans and non-humans, assemblage focuses on how causality emerges through the nondeterministic enactment of practices of worldmaking" (Anderson et al. 2012, 181).

They turn their attention to causality as it has appeared in the works of David Harvey, who, in his conception of dialectics, spoke of "coevolving ecological moments within what Lefebvre would call an 'ensemble' or Deleuze an 'assemblage' of interactive processes" (Harvey 2009, 244). Harvey, following Marx, based his thoughts on the 'method of moments', a particular coming together of multiple agents.

A question not elaborated in detail in the academic literature is how the diffused and distributed agency can be brought together with the notions of force and power. As Müller (2015) observed, Deleuze and Guattari differentiate between two different understandings of power, puissance and pouvoir, which are both translated as 'power' into English. Puissance is immanent power and can be understood as a potential, as the capacity to affect and be affected inherent to entities. Pouvoir, by contrast, discussed actualised power: a concrete ensemble of relations (Deleuze and Guattari 1988). It is the former that *means a* power to 'act' instead of a power by the command and domination of a superior.

Deleuze (1988) commented on Foucault's 'The Subject and Power' (1982):

"Power is a relation between forces, or rather every relation between forces is power relation (…) force is never singular but essentially exists in relation with other forces, such that any force is already a relation, that is to say power: force has no other subject or object than forces (…) and no being other than that of relation: it is 'an action upon action, on existing actions, or on those which may arise in the present or in the future', it is a 'a set of actions upon other actions'. We can therefore conceive of a necessarily open list of variables expressing a relation between forces or power relation, constituting actions upon actions: to incite, to induce, to seduce, to make easy or difficult, to enlarge or limit, to make more or less probable, and so on" (Deleuze 1988, 70).

The idea of assemblages and the conceptualisations of agency seem to resonate therefore with Foucault's later works which claimed that 'capacity to act' equals the source of dynamism in social life and that "power is everywhere" and "comes from everywhere" and thus it neither lies in agency nor a structure (Foucault 1998, 63).

Li (2007a; 2007b) tacitly follows Deleuze and Guattari as she speaks of such diffused agency in her works on assemblages where even though she discusses how struggling for governing and arranging the rural assemblage is performed by certain actors, she highlights the role of those non-humans that trigger power in the process:

> *"'Men in their relations with wealth, resources, means of subsistence,' recognized (…), are somehow to be governmentalized, made the target of technologies to secure optimal arrangements. Climate, epidemics, territory – these are not passive objects. They are as Bruno Latour reminds us, actants, dynamic forces in social life, constantly surprising those who would harness and control them" (Li 2007a, 277).*

4.3. Assemblage theory and Actor-Network Theory

As mentioned earlier, assemblage theory is not the only theoretical framework that has gained popularity in the recent years in works investigating processes of rural change following the relational turn in human geography. Actor-network theory (ANT) is probably an even more widespread tool and so, following Anderson et al. (2012) and Müller (2015), it is important to clarify in what ways ANT differs from assemblage theory and why it is preferred to use the latter to investigate rural community resilience in this project.

Without going into an excessive theoretical diversion, the theory developed by Callon, Latour and Law introduced a shift from focusing on single actors' properties to the relationships between them, claiming that actors are themselves networks, thus when an actor is defined its attributes have to be deployed as well (Latour 2005). ANT casts off the traditional view of society as a hierarchical system that has top and bottom, and instead it places the same actors in different networks where they take different roles. An advantage of ANT is that the objects such as agricultural products themselves fit into the framework of ANT: in this sense, they act as nonhuman elements of the network and tokens transmitted and reified as they become the part of new

environments. Not only do these components take nonhuman, passive roles, but they become resources that "intervenes actively to push action in unexpected directions" (Callon & Law 1997, 178). In this sense, ANT is a tool to understand power relationships (e. g. Woods 1998, Rutland & Aylett 2008), the 'flows' and 'fluidity' of different actors (de Laet & Mol 2000), but also global agro-food systems (Dicken et al. 2001). Recently, there have also been attempts to connect ANT to the research of rural resilience (e.g. Dwiartama & Rosin 2014, Lendvay 2016a).

Assemblages and actor-networks both have emergent properties and become entities irreducible to their components. However, there is a major ontological difference between them when thinking of what is 'outside' the relations and in a 'pre-assemblage' status, if there is any. The operation of the actor-networks theory is based on finding the linkages and relations between human, non-humans, objects, artefacts, technical practices etc. components that lead to the constitution of an actor-network. The relations of the properties of parts assumes logically necessary relations, what means the actor network comes to a 'seamless whole' (DeLanda 2006) that assimilates its parts and nothing stands outside. It remains a question, if the efficacy of 'parts' can be understood, and, if entities are fully determined in their current relations and engage in a homogenous whole (Anderson et al. 2012). Recognising this issue, Latour speaks about the condition of 'plasma' which is a transition state "not yet formatted, not yet engaged in metrological chains and not yet covered, surveyed, mobilized, or subjectified" (Latour 2005, 244). He hints therefore at an 'unformatted realm' from which the associations may emerge.

Assemblage theory on the other hand, as we have seen earlier, is based on the exteriority of relations. This

> *"implies a certain autonomy for the terms they relate, or as Deleuze puts it 'a relation may change without the terms changing'. Relations of exteriority also imply that the properties of the component parts can never explain the relations which constitute a whole, relations do not have as their causes the property of the [component parts] between which they are established (…) although they may be caused by the exercise on a component's capacities" (DeLanda 2006, 10–11).*

What DeLanda refers to here, is the logically necessary and contingently obligatory nature of relations formed by the linkages between components. As Anderson et al. note, "entities are affected by relations and by the other terms they are related to but they are not fully determined by those relations/ terms" (Anderson et al. 2012, 179) – there has to be made a difference between the properties and capacities of entities. This leads to how assemblage theory may allow us to think of resilience as a process where "entities can be detached from any one assemblage to become parts of another assemblage" (ibid, 179).

As Woods noted, the assemblage interpretation of DeLanda may have an added value to the research of stability and change. Woods highlighted that the recognition of the expressive role of components and of the significance of coding, further bring in a discursive dimension that goes beyond the material focus of ANT. The concept of territorialisation, meanwhile, presents a mechanism for the stabilisation of contingent relations that is absent from ANT, and also acknowledges that assemblages are bounded entities, but never discrete, as they are at the same time locked in recurrent interactions with other assemblages and are defined by the exteriority of their relations. Moreover, the emphasis on the exteriority of relations recognizes that multiple assemblages co-exist and interact, and that individual entities may be components of many different assemblages at the same time (Woods 2015).

To conclude, both ANT and assemblage theory allow us to consider structures and materials as having an agency, but the major difference is that actor-networks are extremely volatile, assemblages are more tightly set together. What is more, assemblage theory enables us to think through how communities are stabilized by the discourses and coding and meanings attached to certain components. Therefore it not only concentrates on adaptability and new contingencies as ANT does, but thinks of more fixed entities that are still able to change in certain ways if the components are put together in new ways via 'lines of flights' Deleuze & Guattari (1988) described.

Assemblage theory is found to be an approach suitable to enable us to understand how communities – including people, non-human components, discourses, rules and regulations – come together and become a whole of interacting parts where functions of components are coded. This allows me to think through how people engage

with each other, the agricultural products, and the land and also how agricultural products trigger the performance of community actors for instance.

4.4. Conclusions

There are several challenges when attempting the application of assemblage theory in empirical research of resilience and social capital that has to be kept in mind throughout the analysis.

First of all, assemblage theory assumes the existence of certain components building the assemblage. These, however by nature of the assemblage, are not predetermined, fixed components. As Woods (1998) observed, a difficulty often arising when applying relational methods is the unbounded number of actors and components potentially able to be involved in the analysis of networks and assemblages. Not all humans of the community, not the sum total of non-human objects surrounding, produced by or put into work in any other ways by these people, and not all discursive materials such as legislations, rules and habits can or should be included in the study. Those components regarded as playing a part in the emergent properties of the assemblage, therefore, have to be selected following careful consideration and the weighting of their potential roles. In this study, I am going to focus on three such components that I consider as key players in building up the rural assemblage and determining what resilience might mean: the agricultural land, the agricultural products and the human members of the community.

There has emerged no example so far for how a community assemblage built up of components and their relations could be analysed in a well-structured way. While I acknowledge that there is a level of uncertainty in dissecting an assemblage and in focusing on distinct components one by one, I find the best way to structure the empirical chapters of this essay by devoting attention to how these components connect to other elements (and form networks and so shape social capital) and how they play roles in what means resilience to rural communities. Therefore, the three empirical chapters applying assemblage theory are going to elaborate the role and relations of the farmers, the land, and the agricultural commodities respectively.

133

Secondly, derived from the basic observation made by Woods who claims "an assemblage cannot be reduced to the properties of its components" (Woods 2016, 33), one has to be very careful not to seal the rural assemblage with the imprint of any components. To avoid this mistake we have to follow simple rules. When thinking of a possible component, such as an object, the material and expressive roles it plays and enables its connections, will – by definition of the assemblage – arise from how it relates to other components, and its attributes will not exist ex-lege. When speaking of the properties of the components one always has to keep in mind from what affairs that property arises and how that property connects to other components.

In practice, this means that although focusing on only a handful of examples mentioned above, I am going to analyse the relations certain components have with other components, subcomponents– as we know, they shall also be considered as assemblages – and the 'wholes'. The way these components enter assemblages and form networks may take both material and expressive forms. The difficult task during empirical analysis is to search for, find and render those expressive properties that may take the form of feelings, emotions, habits, regulations, and other policy coding, but also how things operate and how things get described in more general terms. What I shall be talking about therefore is the various ideas of language and descriptions, and this means that language itself shall also take a crucial connecting and governing role in the Foucauldian sense. In certain cases and thinking about certain physical processes in particular, such as that of the developing watermelons from seedling to plant and fruit, I am not going to be able to completely unfold how this development happens as a biological process. I am to focus instead on how these changes are thought about and manifest themselves in the changing relations and what impacts they have on various aspects of social capital.

Thirdly, as I aim focusing on resilience, the stabilising and destabilizing processes within the rural assemblage have to gather ground. In more practical terms, it is the potential agency of components that I am especially interested in, both regarding how they are able to trigger stabilising forces within the networks of the assemblage and how they may foster further movements.

V. METHODS FOR DATA COLLECTION AND ANALYSIS

The aim of this chapter is to introduce the methods for data collection and analysis carried out to answer the research questions set out in this project. This main topic of interest is the meaning of community resilience (as introduced in Chapter Two) and the ways that rural farming community relations are performed through the daily practices. As outlined in the previous chapter, assemblage theory will be used as to interpret experiences and the empirical findings gathered.

As mentioned in the introduction, the current form of the thesis is a result of numerous reconsiderations of the research questions and possible successful approaches to resilience. The initial plan to conduct a comparative study focusing on resilience and social capital was discarded following the lessons learned during pilot fieldwork. Initial inquiry into the case-study communities showed that the academic literature handles the key issues of the study – resilience and social capital – with undue optimism that does not match and cannot explain real-life experiences. During the course of the work the research managed to critically reflect on the data collected in the earlier stages of the project and utilise the information that was collected in ways that were not expect before. In the next four chapters the argument is built on the empirical evidence that was collected between 2012 and 2016.

At its best, conducting social science research should begin with the elaboration of a delicate research methodology by the vigilant implementation of the data collection methods. Planning is followed by a careful data collection process and an analysis and interpretation of the finding that answers the research questions of the study. Robust and sure-footed methods may supply the analysis with representative and sophisticated data, and methods may be put into work especially successfully following an extensive planning and iteration process. Beyond the vision for meaningful findings answering the research questions there is a need for taking into consideration the possible unexpected findings that may cause interferences between the expected hypotheses and the experienced 'reality'. Despite all the efforts to design a step-by-step data collection and evaluation schedule in the case of this particular research, it seemed necessary to

prepare for possible false readings and prepare for major shifts in research focus following primary data analysis. When working with fuzzy concepts such as 'resilience' and 'social capital' it was found useful to apply a range of versatile methods that allow flexibility during data collection and interpretation to reflect on unexpected findings.

This chapter describes the applied methods from planning of data collection through the fieldwork and data analysis to the interpretation process while it reflects on the lessons learned during the study. The chapter starts by introducing why the decision made to follow a qualitative approach to investigating community resilience. This is followed by the description of the selected case-study areas and the primary data collection process. Finally, this chapter presents the data analysis process and the interpretation of the findings.

5.1. The types of data and information required

In this thesis the core concepts are rural community resilience, assemblages, social capital and agency. Before starting off with planning empirical research it was found important to think through what kind of information one requires in order to develop meaningful knowledge when linking these broad concepts. In this section it is also important to briefly justify why the decision was made to follow the exact approach to the research.

As visible from the literature review of Chapter Two and Chapter Three, resilience, community resilience and social capital are intangible properties that often do not manifest themselves overtly and may be understood and approached in very different ways what faced the current research with significant epistemological challenges. The first main decision that had to be made was whether a positivist approach is of benefit when trying to understand resilience at all: to what extent shall this research seek to apply structured methods enabling collection of quantifiable, measurable, comparable information. Abundant research on community resilience and social capital has been conducted following an engagement with quantitative methods and statistical data analyses (e.g. Poortinga 2012; Brose 2015). The advantage of such works is that attributes of actors and their networks can be standardised or at least

categorised in order to unfold the relationships between basic properties and outcomes and findings are comparable in space and time.

Readings of resilience drawn on the definitions of SES (as shown in Chapter Two) such as that of Berkes & Jolly (2001, 2) asserting resilience is "(1) the amount of change the system can undergo and still retain the same controls on function and structure, (2) the degree to which the system is capable of self-organization, and (3) the community's ability to build and increase its capacity for learning and adaptation" operate in a closed system where clear cause-effect relationships exist and same rules are assumed to apply. Qualitative analysis may provide scientifically proven, sound results supporting comparative analyses, assessing impacts of policy tools, or evaluating temporal change within certain case-studies. These however all presume conceptualisation of resilience has been completed and we can assume a closed system with an intrinsic 'condition for closure' (Bhaskar 1978). According to Sayer (1984, 112) "there must be no change or qualitative variation (e.g. impurities) in the object possessing the causal powers if mechanisms are to operate consistently". This implies a contradiction with social science research that is built up of open systems involving actors infused with the capacity to change and their actions have the capacity to alter the configuration of systems (Sayer, 1984).

Asserting that the essence of resilience could not even be grasped by carefully selected indicators, Darnhofer et al. (2016) suggest the use of 'surrogates' following Carpenter et al. (2005) who found that important aspects of resilience in social-ecological systems are not directly observable, but must be inferred indirectly. This is not the only case where certain surrogates are found responsible in summarising and indicating the essence of resilience: Folke et al. (2003) propose the use of 'critical factors' in social-ecological settings, Anderies et al. (2006) identify ten 'heuristics' of dynamic evolution, Walker et al. (2006) suggest fourteen 'propositions' playing a role in absorbing disturbances, Cabell & Oelofse (2012) developed thirteen 'behaviour-based indicators' and Biggs et al. (2012) advance seven 'generic policy-relevant principles' in their works that are based on a structural understanding of resilience following the SES approach. Such surrogates have been applied to rural farming settings as well, such are works of Stirling (2007) and Darnhofer et al. (2010) on

flexibility, Astigarraga & Ingrand (2011) on tipping points, Vandermeer & Perfecto (2012) on diversity. However, Darnhofer et al. come to the conclusion that

> *"whatever principles or surrogates are identified, they are unlikely to be universal, and therefore they require a nuanced understanding of how, when, and where they apply, as well as how they interact with or depend on other principles" Darnhofer et al. (2016, 114).*

'Resilience' has often been put into work in similar way to what Latour (1987) considers a 'black box' in his work 'Science in Action'. Latour described the black box of knowledge as

> *"an expression from the sociology of science that refers to the way scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically the more science and technology succeed, the more opaque and obscure they become" (Latour 1999, 304).*

In certain cases (e.g. Hopkins 2008, Steiner & Markantoni 2014) despite the good intentions to conceptualise the main concepts and explore the internal complexity of the system in question, the reader will always find the way the term 'resilience' is used in the text as very wobbly. The reader could easily imagine the key term to be substituted with antonyms such as 'permanence' or 'change' at the same time and so 'resilience' more or less loses its meaning.

Despite the large number of works contesting our existing knowledge of community resilience, the true nature of the concept remains unpacked and the multi-faceted processes and power dynamics constituting resilience continue to be hidden. This is the reason for the refusal of the structured analytical tools offered by quantitative analysis methods within this research. Thinking of resilience, a purely quantitative approach would look at how things 'seem to be' at present rather than reveal how they 'might be' under different social conditions. As this project aims to take a critical approach where it is also an objective to rethink the generally accepted notion of resilience, in this research it is also assumed that we are unfamiliar with all the possible components of community resilience and social capital and how they operate.

In this project it is believed that understanding how a community performs resilience can only happen if we relinquish the demand for representative research and develop instead an interest in practices, performance, and bodies. These cultural geographical concerns are strongly associated with the theory and practice Nigel Thrift described as 'non-representational theory' or the 'theory of practices' (Thrift 1996; 1997; 2000a; 2000b). Thrift describes non-representational methods as the "practices, mundane everyday practices that shape the conduct of human beings towards others and themselves in particular sites" (Thrift 1997, 142). Although this kind of work is engaged with 'performative presentations', 'showings' and 'manifestations' of our everyday life as opposed to a concern with representation and meaning, it is a great help to understand the daily practices in situ.

Therefore, as this project works with communities, it was decided early on to base the study on ethnographic methods with an emphasis on semi-structured in-depth interviews but also to build on participant observation so as to collect information about objects and non-human entities and their relations with humans.

In this research the initial questions were centred on a historical perspective suggesting that the resilience of a community, social capital or agency and can be derived from past events, i.e. the community has shown recovery following disastrous events in the past. The work here shall have a holistic approach so that all actors and relationships can be identified, although there is a risk in spreading out the research to all aspects of the community. In many cases inquiries into community resilience treat possible interrelatedness, complexity and contingencies with such importance that they operate with no explicit research question and cancel all presumptions on who or what topics to put a focus on when entering the field. This leads to data collection beginning with a very general inquiry into community life giving an opportunity for community research participants to raise any topics of interest. This is clearly the case in Amundsen's work for example when data collection methods as part of a research on a Norwegian community's resilience to climate change was described as:

> *"Interviewees were asked about their attachment to place, what they valued about the place, the community activities they take part in, their relationship to the natural environment and, in particular, what makes it a good place to live. Further they were asked about what changes they have observed and were*

prompted to talk about social, economic, political, weather, and climatic conditions. They were challenged on what the consequences of these changes might be and how they envisaged the future for the village." (Amundsen 2012, 50).

Led by the literature, prior to commencing fieldwork the earlier versions of the project plan followed imaginations and expectations about possible experiences and answers the empirical research would come across during fieldwork, but this vision quickly turned out to be false. Therefore, it was found useful to allow various issues similar to those in the above excerpt of Amundsen's (2012) work to appear during the initial phase of the fieldwork. These topics came to the surface either during participant observation or during semi-structured interviews and unstructured conversations. Following that could stratifying the information begin according to broad themes identified, so as to avoid fragmentation and to place data on a solid analytical framework.

5.2. Two case-studies

As discussed in the introduction of Chapter One this research has originally been based on the idea that the relationship between social capital and community resilience could be unfolded by a comparative analysis on the example of a Western and an Eastern European case-study. According to a working hypothesis the Western European community would be more resilient compared to its Eastern European counterpart situated in a post-socialist environment due to higher stock of social capital that some research suggests (e.g. European Social Survey 2004, Füzér et al. 2005; 2006). This initial idea to carry out research on rural resilience was planned to follow a positivist approach with the use of statistical data as well as reports of community members and experts. Such a comparison, however, did not promise a theoretically sound project as the fuzziness and complexity of other key concepts beyond resilience and 'a' social capital such as a post-socialist condition would also have played a role as unknown variables in the equation. The lack of common denominators between case-studies and

too many local factors lead me instead towards the idea to focus on the very few *similarities* between strikingly different case-studies.

At the same time, it emerged that using essentialist concepts such as 'capitalist' and 'post-socialist'[4] would not be of much use to my study. Firstly, this would reproduce a binary that has been created by academic scholarship decades ago and critiqued since (e.g. Stenning & Hörschelmann 2008). Secondly, it seemed that it would not be possible to critically think about what the peculiarities of the Hungarian case-study are that actually make it 'post-socialist' and the research could easily fall in the trap of confirmation bias. Thirdly, it became clear before commencing the empirical studies that working with a comparison that focuses on differences rather than similarities, would hinder the project from coming to general findings applicable to how resilience can be contextualised in the case of any rural community, independently from the actual social-political-economic context.

It was only after reviewing the literature, reconsidering research questions and thinking through what the possible analytical framework of the research could be (relational approaches) when the practical questions of data collections came to fore. Already the first literature review suggested this research to concentrate on theoretical engagements and questions that are conceptual in nature. This mean that the role of possible case-studies would be to work through that conceptual question and illustrate how concepts are connected in practical terms as well as to refine the conceptual and analytical frameworks by highlighting their strengths and weaknesses that are experienced when applied to real life examples. This means that it is not specific issues

---

[4] Post socialism is a condition characterized by ongoing transition from socialist to a capitalist system and by processes of change and persistence on multiple scales in the former socialist states.
More than 25 years after the regime shift the notion of post-socialism is not a completed process of change, but an ongoing transformation that includes:
• a mixture of the images of a pre-socialist era,
• legacies and memories of (imagined) socialist past (Kay et al. 2012),
• the results and images of a transition process from the collapse of socialism through the period of democratization and privatization, the accession of the EU and the global economic crisis since 2008, together with joining a global competition,
• and the variability (Herrschel 2007) of personal stories that determine how members of the communities view the above three (Lendvay 2016a).

and problems of certain rural areas that are in focus and the concepts in question are not used to understand exact phenomena observed during empirical work. Instead, the aim was to select at least two different case-studies that could support the identification of characteristics of conceptual ideas that are generally applicable to rural (farming) communities (of Europe) irrespective of the exact context. In its justification for selecting the watermelon / lamb producing communities, this research refers to Jackson et al. and their explanation for deciding to analyse the chicken / sugar industries in parallel case-studies:

> *"While chicken and sugar are very different food products, we argue that they can be usefully compared in terms of their materiality, meanings and forms of market regulation. (…) However, we wish to show that our argument about the moral economies of food can be applied to products as apparently diverse as chicken and sugar. (Jackson et al. 2009, 14)*

Therefore, the principle behind combining the results of two such different communities is with the aim of coming to general rules of how rural communities operate no matter the context: the historical, political or geographical environment and with a focus on materiality, human and non-human relations, agency, also the connections evolving between producers, consumers and other players and their implications on social capital and resilience. Over the course of the empirical chapters the two case-studies are analysed one after the other, but commonalities and findings are drawn together in the conclusions of each chapter.

The empirical data collection is based on two case-studies in Hungary and Wales; a watermelon producing and a sheep rearing community respectively. The two case-studies represent examples from the same larger assemblage: they are specialized agricultural commodity producing communities located in the territory of current European Union, they follow capitalist market mechanisms, and are influenced by the Common Agricultural Policy and the 'acquis communautaire'. At the same time, the two case-study communities are markedly different in terms of their history and the nature of the commodities. Also, while – as will be shown in Chapter Six – in the British context policy documents handle resilience as a catchword, in Hungary no such term is in use. This makes it interesting to see how resilience is embedded in daily life even though it is not overtly spoken of in academic and policy discourses in Hungary,

and how similar processes can be considered under the same conceptual headings in different examples.

The only pre-given common denominators set before selecting the exact case-studies were to work with a) geographically delimited b) rural communities of agricultural nature c) with the presence of external forces jeopardising the communities that could be analysed. This third criteria was to introduce a component of 'emerging communities': not only would be the community be defined in geographical terms and by a common practice of farming but also by coming together and becoming amalgamated due to stresses and forces that help to understand processes of social capital and reveal the characteristics of resilience, as discussed in Chapter Three. Maguire & Cartwright (2008) grasp the essence of this kind of community as:

> *"A 'community' may emerge (from where there was previously no cohesive and organised community) in response to a number of issues, for example an environmental or social change – or in response to regulatory reform. Communities are made up of different sub-groups. Social psychological research provides an understanding of the conditions under which people see themselves as a member of a group, and are motivated to act for the benefit of that group, rather than as individuals (Eggins et al. 2004)" (Maguire & Cartwright 2008, 2).*

Applying these three principles to selecting possible case-studies meant that if it would be possible to find overarching characteristics of rural community resilience in two markedly different rural communities of Europe, the findings would be generally applicable and not dependent of the exact geographical context. The Hungarian case-study focuses on a farming community located in post-socialist settings and examines a relatively new community of farmers engaged in horticultural production that developed in the 1980s. The Welsh case-study on the contrary is looking at a more historical upland farming community based on animal husbandry that evolved centuries ago and that has remained basically unchanged since. The rationale for selecting these exact case-studies was also a result of the media context. As will be shown in details in Chapter Six, there is a crisis in the Welsh sheep farming and the Hungarian watermelon industry and both issues frequently appear in the media and thus are recognized and debated nationally.

The case studies selected are the watermelon producing community of Békés county, Hungary and the sheep rearing community in the Cambrian Mountains, Mid-Wales, UK. In practical terms the first is located in the 15 km radius of the town of Medgyesegyháza (46.496 N, 21.029 E) the centre of the watermelon producing region, and includes Medgyesegyháza and its neighbouring municipalities Nagykamarás, Méhkerék, Kunágota, Pusztaottlaka, Kétegyháza, Elek as well; all based in Békés county of Southeast-Hungary (see Fig. 2.).
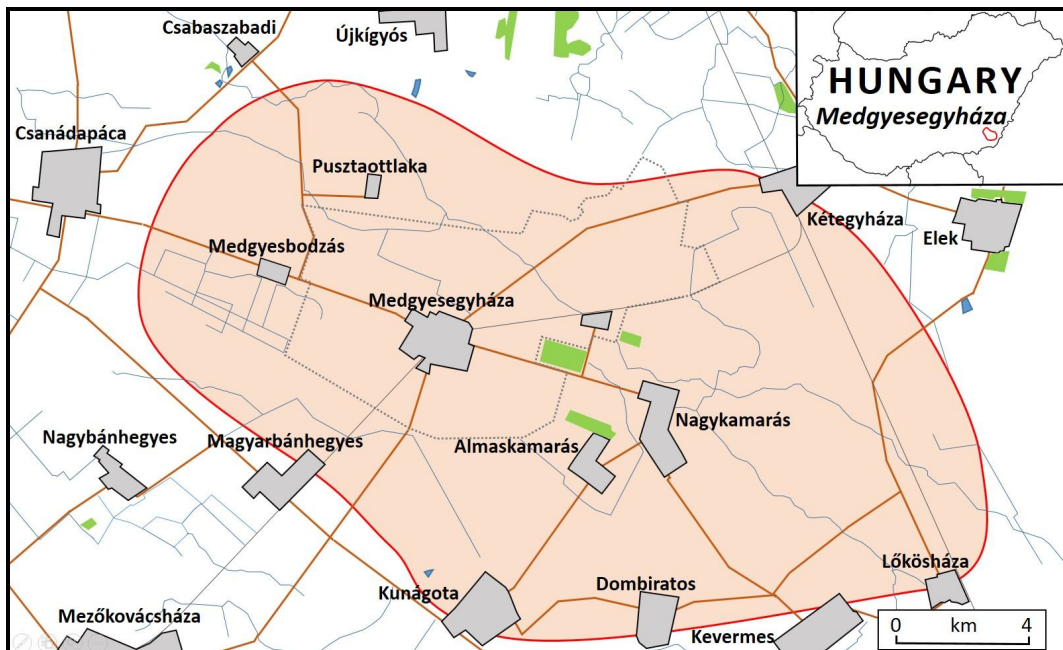
Figure 2

The location map of the core area of the watermelon producing community of

Medgyesegyháza, Hungary.

The latter case study, the community of sheep rearing farmers working in the uplands of the Cambrian Mountains is scattered around in Ceredigion, Carmarthenshire and Powys counties of Wales, UK. The exact fieldwork location is within the mountain range surrounded by the settlements of Machynlleth, Llangurig, Rhayader, Abergwesyn, Pumsaint, Llanddewi Brefi, and Devil's Bridge municipalities (see Fig. 3.).

144
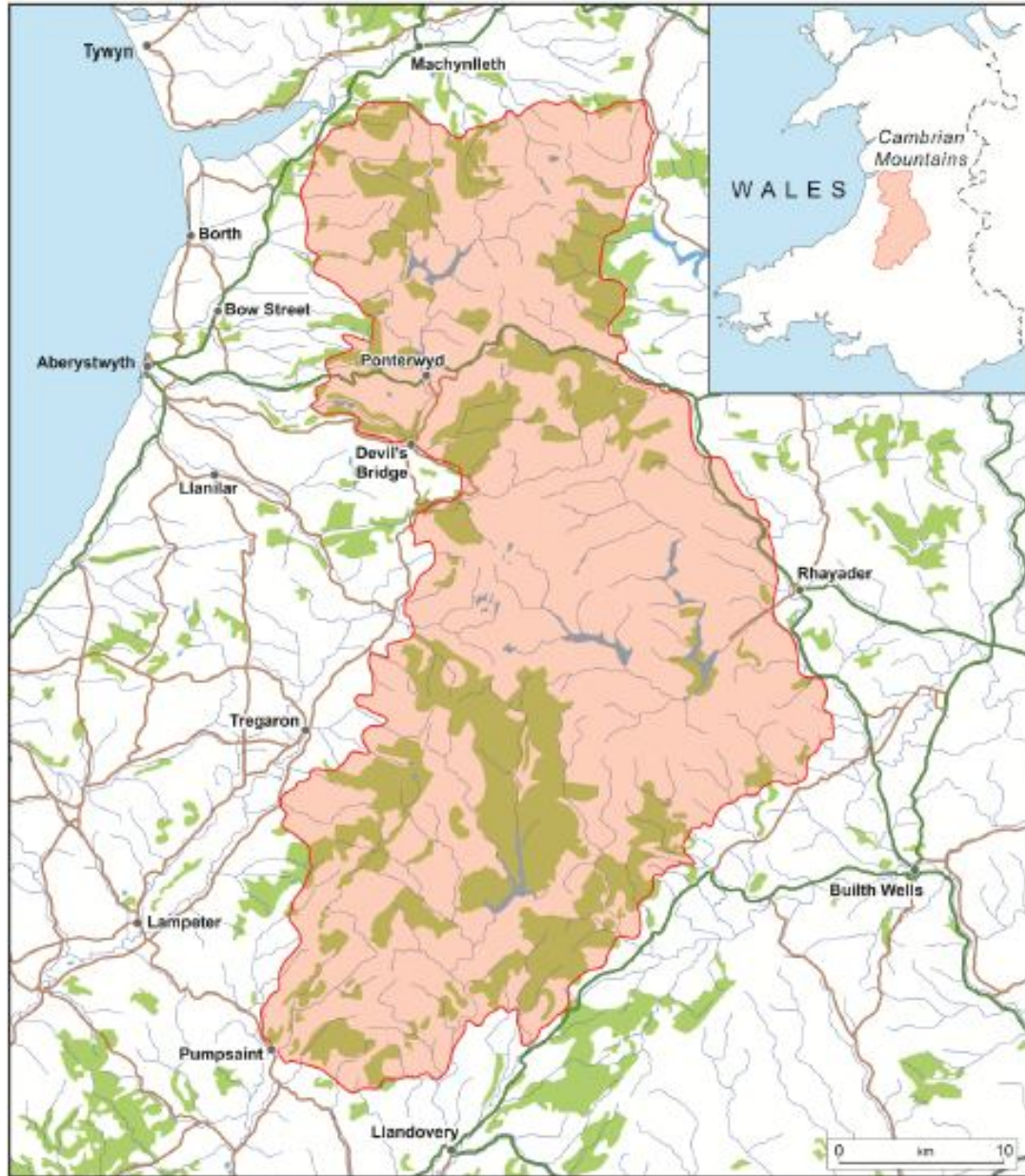
Figure 3
The location map of the upland farming community of the Cambrian Mountains, Wales.

5.3. The positionality of a foreign researcher…

Before commencing the study, I have not been familiar with either of the communities: I have never been in the settlements community members live in, have never seen the lands where agricultural production carrying the identity of the

145

communities happens, have never knowingly met any of the community members or been aware of consuming products of the communities. My pre-existing knowledge of the watermelon producing community stemmed from media reports of repeated protest actions carried out by watermelon producers in recent years. The media watermelon farmers spilling ripe watermelon in the car parks of French-owned retail market Auchan in order to draw attention to the low watermelon prices and later reported the price-agreements concluded between representatives of retail chains and watermelon farmers, with the mediation of the Ministry of Rural Development of Hungary. These events led to discussions about the lobbying capacities of communities and wider debates on state lead cartels. At the time of the events I could not link the information to exact geographical locations or persons. These community actions did not evoke especial sympathy towards community members instead they arouse some more negative feelings towards pricing practices of multinational retail chains in general or scepticism towards certain actors of the state bureaucracy beyond making me aware of the hardship of one of many groups of farmers. The image created following the media reports was that firstly, there were various community actions, secondly, there were strategies and pressure groups present and the community was overtly coping with hardship what seemed to be a 'resilience in the making', thirdly, leaders of the community were not visible at first and so the top-down structure of community actions was hidden. This hidden nature of the top-down system operating in community-level decision-making was what made the role of social capital, the sources of power and the mechanisms of conducting this power interesting questions. Beyond these attributes and the fact that I had no previous experiences with the people of Békés county and attached no emotions to the community seemed to make it a suitable case-study to work on community resilience and social capital.

Even less information was available before commencing the project about the Welsh upland farming community. Instead, most of the images I had about farmers of the United Kingdom turned out to be false. Coming from an Eastern European background, but being classified as highly educated and practicing geography for more than a decade my expectations towards a Welsh farming community were more like ideas of a 'fairy-tale' than the reality. The image I developed before the research were

146

not my personal creation but built on the information one would infer based on the data easily accessible about Britain from Hungary and interestingly, the image of an idyllic rural society depicted in the social capital and resilience literature itself. The unrealistic expectations I had were quickly cooled down by the traditional and pragmatic lifestyle and attitude of the Welsh farmers.

The rationale behind selecting the upland farming community of the Cambrian Mountains as the second case study was firstly geographical with its relative proximity to Aberystwyth, secondly the unique landscape that sets the natural boundary around a community of practice as well as a geographically defined community and thirdly, the existence of pressure groups such as the Cambrian Mountains Initiative that target the development of the upland farming community.

5.4. …and its unexpected transformation following entering the community

Positionality is not purely about the researcher viewing his or her research 'subject' from a fixed point that determines which aspects of the subject will be regarded as meaningful and worth of interest and how characteristics will be interpreted later on. Positionality is much more a process whereby an interaction between researcher and subject driving the course of the data collection and interpretation is carried out beyond 'what is said'. Relations have been portrayed as asymmetrical where the researcher has traditionally been regarded as more powerful, however, they are found often "in a dependent position owing to their need to produce meaningful data, and are thus far from powerful" (Kaspar & Landolt 2014, 2). Positionalities are contingent and fluid characters of relations and are dependent on embodied aspects of fieldwork. I experienced two very different ways an academic research could be receipted.

In the Hungarian case-study my positionality seemed to be more complex than I expected due to many reasons. Firstly, farmers seemed to be 'under-researched' as most of them did not take part in surveys interested in their issues. The community of Medgyesegyháza is often visited by politicians and the media but it seemed, most of the

147

encounters farmers and community members had during 'interviews' were concerned with the development of agricultural products and the foreseeable prices, not with the villagers' lives. Therefore my research interest was rather odd and people often did not understand why I ask them about such issues. It is rather characteristic that while initiating conversations with the locals I became directed to a well-known (and wealthy) farmer who voluntarily took a sort of leadership in the community by being their voice and often appearing in the media as I was told:

>*"you should ask Tamás, he is the one who likes to give interviews!".*

Secondly, Medgyesegyháza is located in a peripheral region of Hungary. It is situated at a distance of 3-5 hours by car or train from the capital city Budapest, and with no major cities and any tourist destinations nearby, there are not many visitors in the area; we might even say, one needs a good reason to appear in the South Békés area. Thirdly, with no higher education institutions nearby and only a low number of local people involved in higher education, people could not locate my qualification aim, they considered me a student working on 'a dissertation similar to a university degree'.

The most confusing component in my positionality was my origin: it was difficult to make people understand why a researcher from a university of the United Kingdom with an urban background would appear in Medgyesegyháza and ask about their rural community. It was especially difficult during participant observation to tell the people working as day-labour why I would join their work. I told people my aim was to respect them while writing my dissertation and instead of writing about their problems in an air-conditioned office, I found it fair to experience their hardship in person. Building rapport with the people working as seasonal labour was best done through taking part in their – often rather crude – jokes and to act in a way similar to theirs, e.g. to try to sell my mobile phone while we were working in the watermelon field. This way fitting in the watermelon picking brigade went quite easily and I was even given the names the "New Boy" and the "Pester Lad" (referring to Budapest) that indicated although I was a foreigner, I became accepted.

In the Welsh case-study farmers could much more easily locate me as a resident of the university town of Aberystwyth and many of them recalled their children or other

relatives being student in the town and doing research projects including interviews. When introducing as being Hungarian the general idea was that I speak good English and people would appreciate that I was learning Welsh as I could introduce my story in Welsh language. I felt that despite being a scholar who has no linkages to farming and to Wales but asks relevant questions about farming life my research participants accepted me. Welsh farmers are subject of much more interest from industrial or policy side and are used to being asked about their issues for surveys. An interesting encounter occurred when a farmer from Tal-y-bont recalled an interview an expert of ADAS company has conducted a few days before my enquiry and he found that

"they were interested in similar questions to what you are asking"

what showed that interviewees were already used to being asked the types of questions I did; my position as a foreign PhD student was not much different from that of a professional farm expert of rural Britain.

Being affiliated with Aberystwyth University was a point of connection with the interviewees. The University is the primary higher education centre of the area and many people either have attended courses at the University or have relatives either studying or working at the institution. At the same time the Aberystwyth University Arts Centre is a hub of regional culture, and so people could easily locate the Geography Department building as the place I was coming from.

5.5. Ethical considerations

Regarding ethics, the concept was to follow the ethical guidelines agreed to at Aberystwyth University. This, among others, meant offering the choice to decide whether future research participants are willing to participate in the project. The plan was to approach people in person, via email or on the phone and introduce the research, the questions and topics of interest and the data protection measures prior to asking particular questions. Also, it was found important to hand over both personal contact information and the host institution's contact partially in order to offer potential research participants the opportunity to make further inquiries about the researcher and

the research, to offer a contact point where they could report any action of misconduct but also simply to build rapport. During this process, an information sheet and consent form – which were bilingual in the Hungarian case – were passed over either as hard copy or electronically on email.

In reality, many people were happy to get involved in my research and started talking about various issues even before proper introduction of the researcher and the project itself and also before a signature could be asked for the consent from. Especially in the Hungarian case did it seem a better strategy to introduce more informally and show the actual image representing the 'curious student' instead of – falsely – imitating a formal officer or the administrative researcher, as people seemed to show more trust towards the 'student' who was carrying out the research in reality. This way only six interview approaches were turned down: interviews were declined twice in Hungary and four times in Wales.

The research method required awareness of particular ethics issues. Participant observation was used to cut across the insider/outsider divide, and care was taken to avoid perceptions of participant observation – working together and sharing time with farmers and workers – as 'research tourism'. As a Hungarian student in Aberystwyth with considerable experience of researching and working with rural communities meant that I had potential to become engaged with the both communities analysed in this project. In the case of Hungary I was working partly in the community and I am familiar with the social context because it is a place where I am from, and in the Welsh context I was working as someone in an institution that has had academic as well as political involvement with some of the initiatives in the Cambrian Mountains. My family background had historical linkages to farming and the fact that I was an Eastern European migrant in the UK myself led me to approach any migrant workers with understanding and the required delicacy towards their situation. Farmers and day labourers in all cases acknowledged that I was someone who I took the effort to travel so far and was interested in their way life and beauties and hardship of watermelon production even though I always explained my project does not have any direct political imperative. It is important to note that I gave my personal data to the farmer who was in contact with the accountant responsible for legal registration of the workers. I was

offered financial compensation for my contribution in some cases but no money was accepted during this project and in this sense I only helped the day labourers finish their daily quota earlier but I did not undercut their salary. When offered, I did accept a few pieces of watermelon, however, that I took home and shared with my family.

Finally, important to mention is that the initials of the interviewees – as they appear after the quotes – have been changed from the original names.

5.6. Data collection methods

In practice, following Wilkinson (1970) the communities were approached in different locations so as to have insight into various social fields the community is comprised of and map out the operation of the communities. First of all, I spent time approaching potential research participants and doing participant observation during springtime and summer in situ (Kasper & Landolt 2014) at primary sight of production, locations 'where watermelons and sheep are cultivated'. I did this by partly picking watermelons in the field itself, and by loading both lambs and the watermelon fruits at the watermelon markets where farmers meet the traders and deals are made. This allowed me to learn about the basic practices applied by community members but also to realize some key themes and experience how different actors interpret questions of concern. Secondly, I conducted interviews during the quieter post-harvest autumn-time, 'where farmer's decisions are made', at the homes and offices of farmers and traders, and also at the temporary residences of seasonal labour. Finally, it took place in more formal surroundings 'where official decisions are made', at the offices and halls where interviews with the seedsmen, external experts of the sector and their meetings with community members are held. There exists however a fourth, more intimate type of site where more informal 'community decisions' are made. These sites are either private or hide emerging conversations which are inaccessible to the researcher and thus, to these I only had partial access. Basically these are the spaces of local gatherings of farmers, for example the village pub, and of wealthier producers, for example the tennis court, but sites can be wedding receptions, or local festivals that act as wider but still closed forums.

The research participants were recruited from two main directions. Firstly, a number of people were approached following desk based research. As I made research about the communities prior to doing interviews with community members, I came across a number of reports and interviews made with industrial experts or spokespersons of farmers. Most of these individuals I was able to locate and approach via e-mail or telephone. Secondly, using a snowballing method I asked my interviewees to recommend other people they thought it could be interesting for me to speak with and often received the contacts. Interestingly, snowballing did not work between potential research participants located on different hierarchical levels of the community. I found it a good idea to first speak with prominent individuals of both case-study communities, such as the mayor of Medgyesegyháza or the representative of Nunhems, the major seed supplying company and project managers of the Cambrian Mountains Initiative, so as to gain a broad overview of the communities, and inform leaders of the communities about my plans but these interviewees remained reluctant to forward me contacts of farmers. Instead, surprisingly, the sources of further contacts were more lay actors. In Hungary, it was the landlady providing my accommodation – who was actually running a hairdresser's parlour and was involved in watermelon trading as well – and so had very good local knowledge who contacted a number of farmers she thought could help me. In Wales, a former secretary of the CMI lamb cooperative was the one who passed over a sheet with all members' contacts.

It seemed that the strategy whereby I approached those on top of a local hierarchy and those considered as leaders did not completely pay off. Despite all my efforts to learn about the case-studies before conducting interviews, the fact that I was not one hundred percent familiar with current issues made the first interviews – carried out with leaders – as 'introductory'. I was told facts I heard many times later on during other interviews and I was told many self-aggrandizing stories that did not make much sense. Not being familiar with the local tensions and issues of inconsistency I was not able to ask questions of critical value. In many cases I felt these relatively well known and often interviewed people treated me as a journalist and the information they gave was not more than what I could have gained simply by following the news or reading interviews made with them on the internet. In some cases therefore, I got back to these

research participants with follow-up questions to complement the data collected in the first phase.

As the first data collection method applied, this section discusses and thinks through the way how participant observation was used. Concerning the amount of data collected participant observation was only complementary to in-depth interviews, from a chronological point of view this was the method first used following short introductory interviews described in the last section: participant observation served as the basis for successfully carrying out a series of interviews. As an ethnographical method participant observation was used for two reasons (see Fig. 4.). Firstly, it was a way of entering the community and secondly, it was regarded as a productive data collection method that had a very high importance in interpreting the information that was gained later via interviews and document analysis. Despite the relatively short time devoted to participant observation the importance of taking part in activities and the amount of data collected was significant.

Participant observation, therefore, was a gateway to interviews: my aim was to gain the bulk of the information required to carry out this study via conducting in-depth interviews with farmers and other community members. Being unfamiliar with any particular farmers or actors in the industry, however, it seemed to be difficult to actually start collecting contacts and references. I considered participant observation as a gateway to key actors in both case-studies. I find it especially important to highlight the role of participant observation as a tool in transforming my positionality from outsider to an accepted expert or even community member in an environment characterised by confidential business activities aiming at profits and also where distrust is overt towards outsiders. Participant observation therefore was a way of building rapport, partially by presenting my story as a student not only interested in paperwork but who shows respect for the people and the many aspects of rurality including the hardship of community members. Being in the watermelon field also helped learning the technical language of the farmers and by using these terms the future interviewees could see my interest in their practices. The final utility of the methods was that it helped getting to know exact people who I could refer to in the future. This enabled a snowballing process whereby referring back to the event of picking watermelon, loading sheep or visiting a

knowledge exchange event was a gateway to stakeholders and a reference point future interviewees could link me to. Having participated in the production meant an entry to hidden actors such as the seasonal labour who would be inaccessible otherwise and for these people meeting them on the farm was considered normal and asking them to meet me elsewhere would have made them feel uncomfortable.

Participant observation was not only an entry point to the community but also it turned out to be a productive data collection method. Firstly it allowed me to familiarize myself with the processes of agricultural production – including the technical language – and social interactions involved in community life. Having done reading of possible activities and confronting opinions I might encounter before setting out for fieldwork, and having some imagination in mind about what to expect it was extremely important to collect real-life experiences that often revealed oppressed views suppressed or found unimportant by the public. Secondly, during participant observation could I understand why actors behave they do, why watermelon picking is so difficult and exploiting or what days of solitude means on the uplands for instance but collection of phenomenological data was not part of the research. Data such as the description of actions, emotions, quotations etc. captured during participation observation were documented in fieldwork diaries (see Appendix 1 for the list of cases when participant observation method was applied out as part of the research).

In the Hungarian case most interviews were made in Medgyesegyháza, but some interviews were conducted in the neighbouring villages of Almáskamarás, Dombegyháza and Kétegyháza and I met experts based in the cities of Budapest and Szolnok as well. Most interviewees were lay farmers or day-labour. 'Experts' were traders, representatives of local decision-making bodies, local pressure groups, the Producer Organisation cooperatives, the seed supplying company of Nunhems and FruitVeB (Hungarian Interprofessional Organization for Fruit and Vegetables). Participant observation was tied to these people and organisations as it included participating the watermelon festival with farmers, picking and loading watermelon with farmers and day-labour, and visiting the farmers' and experts' meetings.

Figure 4

Watermelon loading done at the wholesale market of Medgyesegyháza as a

performative research method that reflects the materiality of objects.

Source: Lendvay 2013, private collection

In the Welsh case interviews were conducted with farmers of the Cambrian Mountains from Talybont, Ponterwyd, Ystumtuen, Cwmystwyth, Tregaron, Rhayader and Llandewi Brefi, both engaged with the Cambrian Mountains Initiative and who are not and also some farmers from the lowlands. Interviews also targeted Farming Connect, Agrisgop project, Hybu Cyg Cymru (Meat Promotion Wales), FUW, NRW, NFU, Uplands Forum, Cambrian Mountains Initiative and the Cambrian Mountains Society representatives. I met farmers at their farms and helped some out during lambing, been many times to sheep markets, I participated in Farming Connect events, I

observed the board meeting of the Cambrian Mountains Initiative and I visited the Royal Welsh Show (see Appendix 2 for the list of interviews carried out as part of the research).

The main data-collection method was conducting semi-structured in-depth interviews. The interviews lasted between 45 and 90 minutes and beyond notes taken during the conversation of interviews were digitally recorded and transcribed in most of the cases. 23 interviews were conducted as part of the case-study of the watermelon-producing community and 25 interviews were made as part of the case-study on the upland sheep rearing community. Apart from formal interviews numerous conversations were made with local residents that were recorded in fieldwork diaries.

The in-depth interviews targeted both farmers and experts; the latter group included both 'field experts' Proctor et al. (2012) and other managers of the farming industries. This division may seemingly suggest a patriarchal division and an inferior-superior relationship between the two groups where local community members are not considered as having full capacity in understanding processes around them or where their local knowledge is not considered as useful or valid. The aim, however, was to involve both farmers who are actually the components embodying the community, and outsiders – who are often not part of the local or the farming community – but have some sort of expertise in embedding processes in political, economic, industrial frameworks and as such supplement to genuinely farmer experience. What is more, the roles certain interviewees take are often not purely a local farmer or external actor, instead this binary is further deconstructed as many respondents are active farmers or have an attachment to farming due to past activities or their family and at the same time are engaged with institutions enabling them to have an outsider's view on farming. These views do not support one 'true' and coherent discourse on farming but present often clashing discourses interpreting processes of farming in different shades.

Some of the interviewees were selected according to a second principle whereby those taking different roles in the community have a different perspective on issues and therefore shall be able to reflect on various aspects and the debates surrounding the communities, especially regarding how the delimitation of the community can be imagined; why some become a part of the community while others do not. I selected

therefore people who seemed to be grounded in the community and seemed to have little idea about the possible background of certain events and could not comprehend processes on larger scales – but who gave very detailed account of the lay farmers' view. As said, I was interested to speak with 'experts' who had an outsider's view and could explain the 'official' reasons behind certain events. The most interesting interviewees were those located 'on the fringe' of the community. Some of these individuals were those experts with farming background; but I was most excited to speak with those farmers deliberately avoiding pursuing certain activities (i.e. they were interested in other land use practices, not watermelon producing or sheep rearing, or they quit such farming for some reason, or perhaps they remained continuing on with the historical cultures, such as peanut farming). This way they could give an explanation to the rationales behind choosing not to follow certain practices. This way I could counterbalance the accounts of the farmers situated 'in the eye of the storm' and define the borders and the limits of the communities.

Interviews were semi-structured and adjusted to the role and expertise of the interviewee. Originally, the main thread of my interviews was tied along the questions of what the personal history of the farmer is, what people believed the sense of community might mean, what problems they encountered in the past decades, how they address these with especial regards to the role of community engagement. The first phase of the data collection targeted questions on more traditional readings of resilience and social capital. Firstly, by applying a historical perspective, my aim was to set up a timeline of major events experienced by the communities. This began with questions about family traditions and origin of the farming practice and included a retrospective view of the past 20-30 years thinking through the processes of change people encountered and experienced in different ways. Secondly, I was interested in how people recall the response the community gave to the stresses. Also, I was interested in how people perceive they come together to form a community both by formalised cooperation and by more hidden ways of working together (following Gibson-Graham 2006; 2008). In this phase questions targeted: personal history and feelings about rural development policies (see Appendix 3 for the list of topics of focus).

After gaining insight into the life of the farmers and their community in the later interviews I put less stress on the role of community and the general economic and social environment and instead narrowed the scope of inquiry on processes and meanings attached to certain practices, locations, institutions. This means that in the second phase of my research I was not anymore interested in the conscious and deliberate actions made by farmers, but the embedded features of the community, how things are perceived to operate and how they are imagined to be constructed in an ideal world. Interestingly, that was the time when many answers given to my basic questions by farmers in the earlier phase of the data collection process started to make sense. The introductory questions I asked about family background and ways of farming that I thought were not more than providing a background story and context were answered by respondents in ways which contained a notable amount of detailed information on how material components come together in the community and how farming becomes coded. Topics and questions the research was focusing on in the second phase of data collection were about the farming community, land and agricultural produce and policies (see Appendix 4 for the list of topics of focus). The fieldwork transcripts and notes were transcribed with the help of Express scribe software so that coding of the data can be easily done in the later phase of the work.

Empirical data collection was finalised by gathering documents of many types – mainly written texts such as official reports, development strategies, legislations etc. issued by governmental institutions or governmentally funded organisations but also documents produced by and representing commercial organisations or NGOs. These were often publications advised to me by research participants. Even though respondents often considered these works as consisting 'the true' information, the 'objectivity' of the sources was not of a key concern to me. Their usefulness in the research did not depend on whether the materials were produced by governmental or other official/scientific sources, and whether they provided factual and 'true' information. I handled materials instead as material objects supporting certain discourses and as tools of generating, mediating or conducting power.

5.7. Data analysis

Coding was partially completed through Nvivo software, although most interviews were conducted with the help of a guide in the first hand and so information was relatively well structured. In categorising and analysing data the research was concentrating on how the three components of the rural assemblage identified (humans, the land and objects) were constructed and how they related to each other. The key here was to pin down six focus points for both case-studies as visualised in Table 4.

Dimensions		Components		
		Humans	Land	Objects
	Material-territorial roles	●	●	●
	Coded-expressive roles	●	●	●

Table 2

The six points of focus of the data analysis.

During this time of the study my aim was, firstly, to find empirical information about how humans, land and objects carried material roles. The question the research tried to answer was what kind of physicality (e.g. build-up, surface, weigh) they had, and how they were territorialised in space, and in what ways they were subject to change. In the case of humans and objects this also meant considering what movements they were to go though in space. Secondly, in this part of analysis was interested what expressive roles are tied to these components, i.e. how they are represented and coded by language, in documents, or by law.

Thinking though these roles the components play helped me establish what relations they have with each other and so how components hold together or are loosely coupled where the 'lines of flights' reside. This helped me find those points of the assemblage where a small modification may escalate and reshape the existing assemblage.

Leading semi-structured interviews with research participants meant a freedom to the interviewed to control the trajectory of the conversation and push the thread of the

159

dialogue towards their personal interest. While this provides some hint to what community members would find important compared to the researcher's expectations, the researcher cannot get what he or she is looking for concerning the content of the answers. It is in question which framework we should use and what we shall consider relevant information (see Table 5.). It is also crucial that we shall avoid using a positivist approach by accident that, as Cloke and colleagues put it:

> *"creates a false sense of objectivity by artificially separating the observer from the observed, denying the existence of strong correspondence links, and asserting value-neutrality on the part of the observer" (Cloke et al 1991, 14).*

Once again, applying a positivist approach claiming research should be value free is criticised by those (e.g. Sontag 1978, Dewsbury et al. 2002) who argue that this was not possible in social research. As researchers and participants are part of society, their values, experiences and motives inevitably influence their interpretation of events and so the outcome of the research will be a subjective interpretation of the data.

As farming is considered a source of all means of sustenance the farmers view economic and financial wellbeing as superior to all the emotionally loaded images one may link to rurality. The economic success is considered the backbone of the idyllic rural image, it is the source of the cultural role of farming, and it is prior to any environment, ethical, animal welfare considerations. Unstructured conversations with farmers generally lead to discussion of financial conditions and economic hardship predominantly. Although it is obvious that human interactions, the culture of farming all depend on the economics of the rural and there would be naïve to look for purely social aspects of community life, it would have seemed unproductive to ask research participants to describe what social capital and resilience may mean to them, but was also extremely difficult to have interviewees speak about their views, feelings, memories on the relationships between people, land, objects – things they find perfectly natural and not in question to their daily survival.

Phase	What?	How?
Description	Descriptive analysis of data in original form	Observations reported, data speaks for itself
Analysis	Identifying key factors and relationships	Systematic descriptions of interrelationships
Interpretation	Meanings and context explored	Theory and speculation, we enter a conversation with the data

Table 3

Layers of interpretation following Wolcott (1994) and MacKian (2009).

Replacing very direct and targeted questions on practices of innovation or who and which institutions they trust in, asking for general stories of rural life it seemed more effective. Personal stories and the history of the community characterised by key moments of one-off transformations, stories about certain events of production repeating in time such as planning annual production, harvest or selling products or the spaces and places people link to farming and community seemed to make very useful answers. Even this way, much of the answers interviewees gave seemed 'useless' at first sight and only gained a meaning after being viewed from a certain temporal distance. As the theoretical framework concentrating on materiality and discourses solidified, much of the information gained value by supporting discourses.

5.8. Conclusions

This chapter has explained how data was collected and analysed, and reflected on the epistemological challenges the project faced during the originally unsolid project plan. The project was based on an empirical research on two farming communities from Hungary and Wales, a watermelon producing community and sheep rearing community, respectively. While the case-studies may seem very different, it was an aim of the project to draw together findings that seem general irrespective of the exact social and historical context and reveal the similarities when it comes to the role of materiality or discourses in agency. Building on qualitative data collection and analysis techniques, the vast majority of data was collected through interviews, the role of participant

observation and document analysis and was additional altogether. The questions focused on daily practices embedded in farming and rural life instead of concentrating on how policies and management practices of government agencies drive rural change. The data collected was rendered in a framework that fits assemblage theory and territorial roles, material and coded properties of subjects were analysed. The processing of the data and the interpretation of information was based on unpacking how connections and networks of relations develop and became stabilized and can be subject to change.

VI. SITUATIONAL ANALYSES AND COPING STRATEGIES

The aim of this thesis is to think through how the resilience of rural communities has been understood by applying frameworks of social capital so far and how this view on networks and social organization can be broadened to incorporate processes of daily life, non-intentionally generated forces of humans and the agency of the relations between humans and non-humans in shaping the resilience of communities. The literature review of Chapter Two concluded that analysing resilience of social subjects such as communities has mostly concentrated on responsive actions by the mitigation of crises, and to some extent meant proactive capacity building and agency of individuals. This chapter briefly acknowledges that community resilience may be interpreted from such an angle and many stories can be cited in the framework introduced – and criticized – in Chapter Two before the thesis moves towards a discussion how resilience could be approached by considering non-intentional actions and agency of non-humans in the assemblage approach introduced in Chapter Four. Therefore, the following sections focus on the deliberate actions of people and the community's capacity for adjustment to change. In the case of farming communities – such as those scrutinized in this research – many potential threats, disruptions and challenges have been identified on different scales and by various stakeholders. A number of interests have been identified within the communities that are mostly related challenges experienced, economic hardship and uncertain financial conditions within the farming industries.

This chapter has two main objectives and fulfils these by consecutively discussing findings from the Hungarian case study of the watermelon producing community of Medgyesegyháza and then from the Welsh case study of the lamb rearing community of the Cambrian Mountains. Firstly, following the introduction of the case-studies and the scene setting of Chapter Five, the first part of chapter offers an insight to the ongoing processes of the case-study areas by elaborating a brief situational analysis of the communities analysed. This aims to help the reader to understand some of the processes detailed within the following three empirical chapters. Secondly, in the

second half of the current chapter examples for social organisation, community actions and engagement are cited from the case-studies. By doing so, this chapter aims to of highlight the difficulties of developing analysis of resilience by following the reports of stakeholders: many conflicting interests appear within a community, planned formation of interest groups is also based on exclusion, and the community engagement will be outcome of political struggles, not purely democratic decision-making. An approach including the analysis of policies would consider the community as a socio-economic entity and would identify only a few points of intervention in regards to the resilience of agricultural activity of the communities – the local decision makers focus on the financial and organizational issues surrounding the farming practices from a rather narrow scope.

The current chapter is also to be considered as a cornerstone within this thesis. Although this chapter acknowledges the usefulness of discussing resilience by applying some of the concepts that appear in the literature on social capital or within works focusing on community resilience, it suggests that many such relations exist within a community that are not part of socio-economic analyses, but are hidden, reproduced by daily life and are often tied to non-humans. The following three chapters (Chapter Seven, Eight and Nine) discussing these relations in the frame of assemblages are positioned in point of the current chapter as they expand the view on what the more than social relations determining the resilience of a rural communities might be.

6.1. Situational analysis of the farming communities

6.1.1. The characteristics of the Medgyesegyháza farming community

Describing the socio-economic environment of the Hungarian case-study is not an easy task. The watermelon producing community of Medgyesegyháza does not appear as a single entity in any official reports, studies, policy documents. The community can best be described as a community of practice as the intersection of a wider agricultural community and the local communities of the municipality of

Medgyesegyháza and neighbouring villages. To develop a situational analysis about the community based on the available planning documents we may either find sources from a regional development or a sectoral, agricultural policy oriented origin useful, although watermelon production itself is mentioned only occasionally in both cases.

The general socio-economic characteristics of the watermelon producing community of Medgyesegyháza are similar to those of the macroregion it is embedded in. More than half of Hungary's territory is covered by the so-called Hungarian Great Plain lowland (Alföld in Hungarian) – a perfectly flat river alluvium surface with no elevation of more than 80 meters in an area of 50.000 km². With only slight changes in soil types and macroclimate the natural conditions of all subregions promote the same land use patterns – arable farming, fruit and vegetable production predominantly (Szabó 1993). The region located in Eastern Hungary has experienced the development of a relatively homogeneous social and economic pattern throughout the centuries with especial regards to settlement structure and economy. The relatively large rural towns (5,000-15,000 inhabitants) are evenly distributed in the countryside with large distances and individual farms scattered around them. The economic function of the rural towns has traditionally been confined to handcrafts and the primary processing of agricultural goods.

According to basic policy documents about rural Hungary such as the 2014-2020 Rural Development Programme for Hungary (Hungarian Government 2014) the state has a growth potential in agricultural production due to its favourable agro-ecological conditions: although agriculture adds up only 4% of the GDP the agricultural industry – including engineering, chemical or food processing industry – has a 15% share of the GDP. Currently however regions dominated by agricultural production face wider issues that is signified by the fact that the average age of farmers is increasing – currently above 56 years – the urgent need for generational renewal remains unanswered. At the same time the extent of horizontal and vertical co-operation in the Hungarian agri-food sector is low.

Békés county, the peripheral county located in the Southeastern corner of the state is struggling with wider socio-economic and demographic processes. The population statistics of Medgyesegyháza municipality for example show a steady

decline throughout the past decades, the last 4 census recorded a decrease with 5,170 (1980), 4,676 (1990), 4,193 (2001) and 3,863 (2011) inhabitants meaning the town lost 25% of its population in 30 years. The level of education and qualification remains low, more than 15% of the population of the Mezőkovácsháza Small Region where Medgyesegyáza is located has not completed elementary school, and less than 30% passed a matura and 7% gained higher education diploma according to the 2011 census.

According to the local government of Medgyesegyháza, the watermelon producing sector adds to the subsistence of 6,000 people in South Békés small region and an additional 2,000 when including traders and those indirectly involved in the production. Although only rough estimates exist on the volume of watermelon produced and number of people involved in farming, annual sales of watermelon seeds, Single Area Payment applications and productivity estimates give a good indication on the location and size of the industry. On a national scale farmers have an output fluctuating around 150-200 tons on 4500 ha land involved in watermelon production out of which around 2,000-2,500 ha land is located in Békés county in the Southeastern corner of Hungary and especially clotting around the nodal village of Medgyesegyháza. Due to the favourable natural conditions of the land and the highly intensified technology deployed in this location approximately 100-150 tons, more then 2/3 of the national output of watermelon is produced in the Békés region. As a consequence, whole community economies and settlement identities rely on its production.

Hungary went through significant political-economic changes since the regime shift and post-socialist transition of the early 1990s and transformation affected the complete agricultural sector and the watermelon producing industry within. The restricted property rights and command economic system led to the development of a small, closed watermelon market that run with steady prices and therefore many farmers feel nostalgia towards the security of this period. As one of the farmers recalled:

> *"…in the time of the [socialist] cooperatives there was a chance to take watermelon on export, but that was not more that watermelon being loaded in railway wagons off to Czechoslovakia, and this was particularly done at the end of the watermelon season so mid-August, and this was I remember for 2-2.20 Hungarian Forints, but at that time that was quite good, as on a land of 15-20 hectares with the help of a trailer brought 15-20 quintals and sold it for 2 HUF, one could make 20-30-40 thousand HUF. This was as 3 months of income. So at*

that time one could be much happier for such, it was a peaceful world - I don't like to go into politics, I didn't like that system – but people feel a nostalgia towards that era, there was less rush, and watermelon producers succeeded."
(K. Z.)

Prior to the EU accession watermelon production counted as the powerhorse of the Hungarian fruit and vegetable production, as a former chairman of the Inter-branch Organisation for Fruits and Vegetables (FruitVeB) asserted in my interview. By 2010 however the size of lands involved in the production dropped from 10,000 ha to 5,900 ha. Still in 2004 the amount of watermelon forwarded to export markets was 230 thousand tons and thus Hungary used to be one of the larges exporters. By today however, Hungary does not even appear in the statistics as by 2012 the export was only 51,000 tons – even though it is often forgotten that since joining the European Economic Community the main export markets (Slovakia, Czechia, Germany, Austria, Poland and the Baltic states) drop out of most export statistics. Nevertheless, according to the experts of FruitVeB this was due to unorganized management, the loss of export markets, the black market built around the fruit and vegetable industry as well as lack of funding and poor market regulations. Especially disadvantaged are those farmers who sell their produce to integrators and traders as in this case the fruits go through many hands and the farm gate prices become extremely low, around 25% of the final customer price. The farmers are usually paid 32-45 Hungarian Forints per kilogram at the farm gate, the wholesale traders calculate with a 10 HUF profit. An additional 25 HUF price of transportation, packaging, the profit of the retailer and the 27% VAT add up to the usual total price of 95-120 HUF per kilograms, as reported by the former chairman of FruitVeB organisation.

Both community members and experts believe that beyond the opportunistic behaviour of traders, the restructuring of the retail market was a major shock for the watermelon industry. Many farmers blame the EU and the appearance of supermarket chains for the fluctuating watermelon prices. The EU is often considered as a modern form of colonisation and nostalgia appears towards the socialist era when 'things were more secure'. Asking about how farmers assess the role of the country's accession to

the EU, a common respond is the new requirements they face as their role extended beyond purely growing plants on the field since:

> *"Well, I don't really know how it influenced the market but what I see is that with the EU accession the 'multi' companies appeared and gained strength – the old fruit and vegetable traders got ruined, disappeared from the market, there came a shift with the cleaning machinery, packaging, containers, paper boxes to wrap the watermelon in according to various sizes. So this is how our life changed in the past decade." (G. M.)*

Further, farmers complain about the attitude of retail chains and the approach towards fruit and vegetable producers:

> *"...I feel disappointed until this day that representatives of the 'multis' approach this question in a way that... almost... we have to 'explain' why the question of the watermelon sector is important for us! When we had the negotiations with the [transnational companies] this year one of the comments we heard that for the supermarkets the sales connected to food chain are unprofitable. And interestingly, how do they attract the customers in their multinational supermarkets? With the cheap fruits, vegetables, watermelon. I ask then, how and when do we expect any profits from this segment if we pressure low prices on these products in order to attract customers and we don't look at... and in general the 'multis' don't care what goes behind the scenes... the farmer that produces the commodities for its outlets - in what condition, and how they produce. Whether there will be anything forthcoming year or not is not in question for them." (K. J.)*

Those multinational corporations facing the producers and integrators with conditions they are unable to match have not been of benefit to the watermelon sector and what is more, these supermarket chains have flooded the Hungarian market with cheap produce and under any standards – claimed another representative of FruitVeB (Szarvas 2011). He asserted that unless farmers make a step forward and turn the 'negative tide' right now, they shall suffer a loss from which they shall never be able to recover. In case the current situation continues, the remaining export markets are going to be penetrated by Romanian, Moldavian, Ukraine producers and traders. The expert highlighted that the major aim of the National Watermelon Forum the organization launched is to invite and prompt experts and producers to engagement. In order to tackle the situation FruitVeB claims there is a pressure for quality regulations and new rules that requires the Government to play an important role as well. At the same time

packaging and cleaning the produce shall also meet a higher standard. Beyond the introduction of new technologies there is a demand for a system of consultancies and it is also indispensable to set the condition that the produce shall reach the customers only via registered traders who possess official, registered business premises (Szarvas 2011).

Although the above mentioned aspects of the market structure and fluctuation of prices are often cited problems, the so-called 'neppers', the informal traders are considered especially harmful. Neppers are those traders who purchase the watermelon on the farm gate and resell the fruits at markets as their own produce or won't admit VAT and therefore work with lower prices. According to an advisor to the decision-makers their role may be questioned however:

> *"…if it were malicious only, the farmers wouldn't be stupid, but obviously the nepper is profiteering and not even in a sustainable way but with interests on the short run and taking advantage of the economic situation and by violating taxation etc. rules, so I think besides it is not legal it is a source of a lot of insecurity. What doesn't mean that it wouldn't be vital in certain situations. And it is also a question what kind of gap is filled in by these traders." (T. G.)*

At the same time it has also often been neglected and very few inquiries have been made whether the farmers themselves could be responsible for the conditions in the watermelon industry. Such revelations have been made a decade ago in the media for example in a report:

> *"The Minister of Agriculture grittily stated in the telly he does not accept beating down the price of watermelon. Because the import causes harm to the domestic producers. (…) So now I'll ask: who dropped the price? The hypermarkets? The irresponsible importers? Shucks! The producers themselves! But what could they do? They have to sell the watermelon. But not as partisans, offering beneath each other's prices, instead in unified community action. They should cooperate, I tell you. It's a very long way leading to the point that Dutch cooperatives have reached decades ago. There they dumped the leftover products in the sea and so traders couldn't snap it up at a meager price but the cooperative recompensated the farmer producing otherwise good quality. This of course requires decades of sedulous accumulation of capital." (Kun 2006).*

Speaking about the responsibility of farmers in such a manner remains rare to date, however.

6.1.2. The characteristics of the Cambrian Mountains farming community

The situational analyses and descriptions of the Cambrian Mountains and the issues the farmers of Wales are facing has been a subject of both policy oriented and more grassroots approached studies in the past two decades.

The Cambrian Mountains appeared as part of the Welsh uplands and has been a special target area of the Welsh Assembly Government's sectoral strategies on rural affairs. The Welsh Assembly Government has elaborated increasing attention on the issues of the uplands throughout the past decades with more and more nuanced analyses and policy frameworks from the past Rural Development Plan 2000-2006 and Rural Development Plan 2007-13 to the Wales Rural Development Programme 2014-2020, the plan currently in force . The Welsh Assembly Government approached the development of Wales from a different perspective in the Wales Spatial Plan that includes a section dedicated to Mid-Wales in its Vision and Strategy for Central Wales.

Statutory advisory and prosecuting bodies and non-statutory groups of the Welsh Government such as the Countryside Council for Wales (and successor Natural Resources Wales) and the Wales Upland Forum respectively, have published analyses and policy research documents on the Uplands and Cambrian Mountains in particular (e.g. Taylor et al. 2010, Wales Upland Forum 2012). A similar, 'independent' report, the 'Independent Review into the Resilience of Farming in Wales' has been commissioned by the Minister for Natural Resources and Food (Roberts 2014).

A regional, socio-economic approach has been applied on a lower county level by the local authorities of Ceredigion, Powys and Carmarthen LDPs in the Ceredigion Local Development Plan 2007-2022 (Ceredigion County Council 2013), the Powys Local Development Plan 2011-2026 (Powys County Council 2015) and the Carmarthenshire Local Development Plan (Carmarthenshire County Council 2011) that only partially put their focus on the territory of the Cambrian Mountains and farming.

Beyond the policy documents prepared by government bodies, certain interest and pressure groups have also published analyses about the Welsh Uplands or the Cambrian Mountains and their farming community. The publication 'Cherished Heartland: Future of the Uplands in Wales' (Midmore & Moore Coyler 2005) was prepared for the Brecknockshire Agricultural Society. This publication – that also has

scientific relevance – served as a starting point for other pressure groups and was cited by studies prepared by organizations such as the Cambrian Mountains Society (2005) or the Land Use Consultants (2008). A similar, but more territorially focused report 'The role of grazing animals and agriculture in the Cambrian Mountains: recognising key environmental and economic benefits delivered by agriculture in Wales's uplands (Joyce 2013) has been commissioned by the Farmers' Union of Wales. The Cambrian Mountains Society has also developed its own documentation 'Cambrian Mountains – The Heart of Wales Developing a Strategy for a Sustainable Future' (Cambrian Mountains Society 2005).

A special group of studies on the Cambrian Mountains are those publications prepared for the Cambrian Mountains Initiative, the group developed by Ceredigion and Powys County Councils and the Prince's Charities in Wales following the unsuccessful bid for funding from the Big Lottery Living Landmark Fund. The initial study prepared for the Cambrian Mountains Initiative (CMI) on the potential for a pilot sustainable rural development initiative (Land Use Consultants 2008) has been followed by more nuanced reports such as those on carbon footprints for lamb and beef farms in the Cambrian Mountains (Taylor et al. 2010) and landscapes and ecosystems perceptions (Land Use Consultants & Catrin Ellis Associates 2013). The most comprehensive document prepared for the CMI is the Business Plan for 2012-2017 (Jones & Hughes 2012).

The above listed policy documents and studies all agree that the Cambrian Mountains are an area of deeply rural nature with the local economy being dependent on agriculture and other land-based activities. This embodies itself in socio-economic properties that reflect its rural nature and lead to problems characteristic to upland areas.

The Cambrian Mountains are one of the most isolated areas in Wales where the population density is half of the regional average, only 70 people per km^2 compared to the Welsh average of 140 people per km^2. 19% of the resident population of the settlements surrounding the mountain range is employed in agriculture and forestry, more than twice the rate as in the total area of the three local authorities involved (Land Use Consultants 2008). Works on the Cambrian Mountains also agree that rural change has severely hit the opportunities of the local economy and community and set the

region in a downward spiral. The uplands experienced an outflux of young people that lead to aging population and to issues in succession opportunities both for farm and small business. As employment is related primarily to agriculture, it is highly exposed to the fluctuating commodity market demands and opportunities together with the insecurity caused by changing endowment, subsidizing and farm support mechanisms of the Common Agricultural Policy. At the same time tourism has not grown into an independent, self-supporting branch of the local economy as it has in other upland areas of rural Wales. Therefore the Cambrian Mountains is similar to the other uplands of Wales in many ways "but in a more exaggerated form" (Jones & Hughes 2012, 10).

Midmore & Moore-Colyer (2005) summarize the changes introduced by the recent CAP reforms following the agreements since 2003 in four main points. The fundamental changes follow the holistic approach considering the uplands as sites of environmental protection, quality and safety of food, animal health and welfare decreasing the prices of agricultural commodities to the levels of the world market price. Specifically, Midmore and Moore-Colyer highlight:

• introduction of the Single Farm Payment based on the historic payments of year 2000-2002 as a substitution to the direct payments depending on the levels of production,

• making Cross Compliance mandatory means the extension of the condition to maintain environmental standards to EU obligations including Statutory Management Requirements, Good Agricultural and Environmental Condition, climate change, public health, animal health and plant health and animal welfare; failure to meet any of Cross Compliance standards may result in financial penalties,

• the gradual, progressive reduction in direct payments as part of the Rural Development Plan measures in order to release funding to improve food quality and safety, agri-environment schemes and structural change.

More particularly, focusing on the land based activities and their impacts, Joyce (2013) identified 5 streams of farming practice change. The first – both a driver and an indicator of change – is the fluctuation in grazing livestock numbers: Joyce (2013) found little evidence for an increase in the stocking rate over the long term, instead, compared to historic standards he considered the current stocking rates as being on very low levels. The traditional farm management practices have gone through a major

change with the disappearance of shepherding, wethers (castrated rams), cattle – all of which had a negative impact on the natural environment by the reduction of the diversity of habitats. Certain external drivers of change, such as pollution also had a range of impacts on the habitat conditions. All the above factors led to the spread to Molinia grass and the decline of upland breeding birds. In many cases the widespread involvement of farms in agri-environment schemes resulted in more serious impact of the above. Agri-environment schemes have been changing ever since their introduction to Wales and generate wide debates between farmers.

How these changes embody themselves in the case of Cwmystwyth, a small rural settlement located on the Western fringe of the upland and how they are perceived by an elderly farmer appears in the confusing answer given to my question what has changed in the community. The initial response hints that not much has changed in their daily routine of Cwmystwyth farmers:

"I've been gathering sheep for over 60 years...",

however he later followed with more details about the community:

"There were a shop and a post and a petrol station... and a school in the village. When I was in school there were 45 children. They are going to Devil's Bridge now, some going to Aberystwyth... The chapel and the church are both going... The chapel is a big chapel, it holds 550 people. I remember my father saying if you were going half past five at a Sunday night you are not able to sit down! And I don't think there are more than 5 going there now. Most people were going..." (G. M.)

These indicate that upland farming as a commodity production technique has not changed drastically, however there was massive decrease in population and a complete restructuring of the local economy and society that came following the closure of heavy industry and spread of mobility.

Out of the documents cited above, it is the Wales Rural Development Programme 2014-2020 (Welsh Assembly Government 2014) and the 'Independent Review into the Resilience of Farming in Wales' (Roberts 2014) – the document that some of the RDP's sections are built on – that reveal how resilience thinking appears in policy circles documents. These works use resilience as a key term and goal and apply it in a normative sense and regard it as a condition or preferred state of being that can be

achieved. The RDP does not define or unpack the concept but speaks of building resilience to climate change impacts, resilience within the livestock sector to better manage exotic disease outbreaks or landscape scale approach to land management to improve water quality, and the resilience of biodiversity to climate change or carbon storage (in the RDP these are points: 4.2.1. Better resilience in farming and forestry sector to climate change, disease outbreak and extreme weather events and 4.2.2. Climate change adaptation, building greater resilience into farm and forest businesses). The RDP therefore focuses on ecology and the farming industry, not on the communities directly. The report of Roberts (2014) on the other hand does define resilience; it is defined as:

> *"Viable, resource-efficient, enterprises that can satisfy consumer demand and are able to cope with fluctuations in the business cycle or extreme events triggered by natural causes without recourse to significant public intervention."* *(Roberts 2014, 29)*

Resilience is clearly a state to be achieved and ability to cope with stresses according to Roberts and again, it is the enterprise of key importance. Interestingly, this report later discusses issues of the farming community a sociological phenomenon, it refers to the

- fragmented and sparsely populated areas of Wales that need support of their wider rural economy to build future resilience,
- the Welsh language and culture that does not necessarily impact farming but is said to be traditional in uplands areas; the uplands were once the 'heartlands' of the Welsh language,
- age distribution within the farming community and the aging of farmers *"no resilience review can be complete without considering the next generation"* *(ibid, 51)*.

To summarize my critique, while in case of the RDP 'social' processes and the communities are not in focus due to the nature of the document, the report of Roberts follows the strand of works criticized in Chapter Two and uses resilience in a rather metaphorical way here it means something positive we shall achieve. It is important to note, that as explained in the conclusions of Chapter Two, this research does not aim to analyse policy documents and how resilience appears in them in details but this thesis is

to think through how resilience is performed tacitly by everyday practices and how the concepts of social capital and agency relate to the phenomenon.

6.2. Coping strategies

Thinking in terms of the rural community resilience agenda introduced in Chapter Two, there are a number of questions that emerge following the situational analyses:

- How do people organize themselves to cope with processes?
- What is the source of cooperation, who or what has the power to trigger cooperation and the generation or utilization of 'social capital'?
- Who takes part in this process?
- How do community members consider these processes?

As discussed in Chapter Two, it is not obvious when resilience is 'performed' or 'established', whether it is a kind of disaster readiness, a coping process, or a response to certain disturbances – later on (Chapter Seven, Eight, Nine) this thesis will consider resilience as a property of communities to change and maintain function and identity at the same time that is produced through daily practices. This means it may be worth thinking through the genealogy of a kind of social capital that focuses on willingness to cooperate and its effects on how the community is able to operate in similar way as in the past (and is resilient, in other words). This discussion also investigates which 'parties' are able to spark community action and what benign outcomes such cooperation may have and how we can expect community wide actions to spread along network ties as more and more stakeholders become involved (as seen in Chapter Two and Three). It is also interesting to see however, how such cooperation is being perceived, becomes accepted by different actors and also, whether community action may remain sustainable and effective way to handle threats in the long run. All of what comes in the second half of this chapter are assumed to be the results of planned, intentional actions based on rational measures after individuals and groups assessed their environment and opportunities to carry out changes in their conditions.

As we shall see, there are conflicting comprehensions about the stresses, and in certain cases, a benevolent response to one threat may become the source of threats for others and so may become what triggers a turbulent system of stresses and responses…

6.2.1. Community engagement in Hungary

The utilization of social capital has been of academic interest in the rural Hungarian context (Bodorkós & Kelemen 2006, Megyesi et al. 2011, Takacs et al. 2012). Its has also been a field of study within specific segments of the rural environment focusing on the role of trust between agricultural actors Szabó (2009; 2012), the connections within the fruit and vegetable supply chain (Seres et al. 2012), the integrating role of Producer Organisations in the fruit and vegetable supply chain (Seres et al. 2011), the contractual relationships (Bakucs et al. 2013) or the importance of social capital and leadership in the transition of cooperatives (Forgács 2006). Many of these topics can be applied to the watermelon producing community of Medgyesegyháza. The following sections review those formally accepted forms of cooperation that require a form of social capital (understood as trust and inclusion) and enjoy the financial or regulative support of the state authorities.

The first such state supported form of cooperation is within the frame of Producer Organizations (POs) that are fruit and vegetable producers' organizations officially recognised by the Article 15 of (EC) Council Regulation 2200/1996. These so-called 'cooperatives' should not be confused with socialist Production Cooperatives (e.g. the local Haladás Mezőgazdasági TSZ) that have been running in Medgyesegyháza as well and transformed into private enterprises later on. The main features of a PO are that they operate as a loose cooperation of producers (Szabó 2012), are established on a voluntary basis by farmers, with the financial support of the state in order to maintain an administration staff crucial to the daily running of the organisation. The PO acts as a guaranteed market that – by accumulating large quantities of their products – has a dominant role in the market and is able to dictate market trends. Also, members are able to purchase materials in larger quantities at lower prices, and the PO supports them with financial administration, and shares information. Due to these advantages, it is considered a preferable form of cooperation by the EU, and so the state provides

financial support to maintain this form of cooperation and the Hungarian Interprofessional Organisation for Fruit and Vegetables (FruitVeB) advertises their establishment among farmers. Interestingly, watermelon producers of Western Europe – Spain and Italy – competing with Hungarian producers operate in POs. All in all, POs require a certain level of social capital (trust and willingness to cooperate and take part in a shared, formal network) and its outcome is a secure market even for the small producers.

In Hungary however, the situation is different, since the POs are not successful examples of democratic cooperation. Two out of the three POs interested in watermelon trade operating in the locality are built around wealthy farmers who purchased their large lands (~100 ha) during privatisation (Magyar Termés TÉSZ of Pusztaottlaka village and Dombegyházi EURO TÉSZ of Dombegyház village). They, by themselves, are noticeable participants in the market and simply gathered a number (10-20) of farmers around themselves in order to establish a PO. Some community members say this was simply done to gain financial support from the state. The third PO (Medi-Fruct TÉSZ of Medgyesegyháza) was actually bottom-up, but is not a success story of cooperation either. To my question how a PO would operate properly a farmer from Medgyesegyháza replied:

> *"Regarding its trading side... You need to make the producers have confidence to the PO, so that you can plan what quantities and when. So that the producers can be managed in respect to that we can say there is a season from 1st June to 31st August, so guys, who can produce us what and in what ways, which types and in what quantities, and so matching the market demand we shall always have the produced quantity. This doesn't work however. The PO should have an important role in helping with the input materials. This doesn't work either. I haven't met... excuse me, in the past years there was no example for the PO helping in this, maybe for one or two big producers they did help, but for us, small producers... So about 3 years ago there were PO information meetings, seedsmen were invited, or there were announcements concerning labour issues. These were totally absent in the past 2-3 years." (N. J.)*

The specific problem here is the lack of trust towards the leaders their management skills in organizing large product quantities that enable them to rule the market. Therefore, parallel to supplying the PO, they sell watermelon to traders on an ad hoc basis depending on the daily price. Many other farmers are not even interested in

joining the PO as they make deals with a small number (usually 4-6) of traders they trust and they do so according to the rules of the market exclusively, and often do not take into consideration whether the traders are illegal. There are also special forms of cooperation. Some traders for example purchase expensive seeds and materials for the farmers in advance by ad hoc agreements and have the optional right to buy the mature fruits. This complex phenomenon implies that farmers in post-socialist settings predominantly follow the 'capitalist' path. The possibility seems to exist to build on the heritage of cooperatives and utilize the wider community via POs. However, due to the low level of social capital (trust and willingness to cooperate) farmers tend to take their own risks. A general problem an expert on cooperatives described was related to the conflict between emotional ties and financial realisation of expectation. He reported about a former flagship PO of Hungarian agriculture that was engaged earlier in the Medgyesegyháza area as well by highlighting the question of trust as an interesting factor:

> *"When trust is gone, producers don't supply their products – partially due to payment done with a 6 month delay, so this is not only the bypassing when the farmer doesn't supply the cooperative due to short term interests. However, when the cooperative is in trouble the loyalty and commitment would be the factors required –this is very interesting, this summarizes the quintessence of the Hungarian food production: regaining the trust is a question of money. (…) How interesting it is, trust should not be based on financial and monetary transactions, and I don't know if that can be called trust at all." (T. G.).*

Such accounts on trust, as a key component of social capital and willingness to cooperate and take part in community wide engagement indicate how difficult it is to think in terms of such pre-defined categories and suggest that a 'looser' concept concentrating on relationships could be of more analytical benefit.

Another form of state supported cooperation is tied to the LEADER programmes. LEADER is an initiative of the European Union, introduced following the reform of the Common Agricultural Policy in 1991, which aims to support rural development projects initiated at the local level using a bottom-up method via implementation of small-scale local rural development strategies. In the Medgyesegyháza area, LEADER is implemented through the Land of the Gardeners Local Action Group (Kertészek Földje Akciócsoport Egyesület), which supports a

diverse set of activities on local life standards, further processing of local agricultural produce, and local enterprises. Within the second priority maintaining processing and marketing of local cereal, fruit and vegetable, meat and milk products, it offers funding for joint purchase and ownership of machinery such as boilers or plastic film for plastic houses as a separate measure. Among the eligibility criteria stand that the application shall be submitted with the cooperation of at least 5 local residents pursuing farming. According to the report of the local tendering administrator there have been no applicants for this type of grant so far despite the fact that farmers would often swap machinery. The reason for the low interest in such projects is the general revulsion of farmers towards formalized cooperation and bureaucracy (Baranyai 2010, Takacs et al. 2012).

Interestingly, farmers of many other cultures envy the 'watermeloners' for their ability to achieve community empowerment and maintain their own futures. Watermelon producers have been complaining about low market prices and in the past 10 years in many occasions they came together to personally demonstrate their dissatisfaction. In practice, watermelon producers were called together by Mr Karsai, the former MP for South Békés, and unloaded many lorries full of ripen watermelon in the parking area of Auchan hypermarkets in the Budapest area, so to a give a high publicity to their anger in the region most decision makers turn around (see Fig. 5.). This rather naïve way of attracting attention has often been criticised and experts instead pointed on the unorganised food-chain, claiming that the post-socialist legal-economic environment is still short of providing a calculable environment. The violent actions were not more than symptomatic treatments to the low price and had also been viewed with very little sympathy by the public.

Recently, in 2013, more organised community-wide action emerged. A more preventative, grounded form of cooperation became embodied following the election of the new government party MP who established the Hungarian Melon Non-Profit Association and later the National Association of Watermelon Producers – both initiated by the South-East Hungarian watermelon community.

Figure 5
Watermelon producers protesting against low retail prices in 2008.
Source: http://www.blikk.hu/aktualis/dinnyeozon/54zmz9w

The first members of the Association were those 15 fruit and vegetable traders that realise the acquisition of the vast majority of the farmer's produce. These integrators purchase around 70-80% of the watermelon produced in the region of Medgyesegyháza, much of which is forwarded the produce to foreign partners. Their aim was to defy black market hindering the watermelon market as the illegal traders not owning any business premises, competences and expertise and lacking quality control break down the prices.

Despite the fact that the organisation was well known among farmers and was said to be based on cooperation it was no more than a loose forum acting as a common umbrella through informing their members about internal and foreign market trends at annual meetings. Vertical inter-community cooperation which would be favourable according to the administration could not develop. Cooperation between actors placed on different points of the food-chain is limited to pressuring farmers and traders what *not* to do – e.g. farmers selling their watermelon unripe and under quality or the traders

forwarding unmarked import fruits as local products – and to shaping an imaginative umbrella above the community by creating a pressure group.

The representatives of the pressure groups are often ambassadors of the 'watermeloners' to the Ministry for Rural Development, and through the media they attempt to press for higher retail prices. Watermelon producers have even been accused by the Hungarian Competition Authority of initiating a cartel when they aimed at convincing supermarket chains through negotiations not to sell watermelon under 100HUF/kg in 2012. Beyond pure communication pressure, the group stepped into legal action arm-in-arm with the Ministry, causing serious concerns. With the intense support of the Ministry of Agriculture and the Melon Association, an agreement was created among producers, wholesale traders and supermarkets. According to the agreement, Hungarian melon would be sold by supermarkets on an agreed minimum price. The agreement would benefit – the press reported – producers, wholesale traders, retailers and (paradoxically) consumers as well. The agreement was celebrated all around for a week when the penny dropped; photos appeared of aborted 69 HUF/kilogram melon promotions due to the established 99 HUF minimum price. It was the press discovered and publicized that actually this was a cartel (Csépai 2015).

Following the accusations of illegal carteling the Hungarian Competition Authority (GVH) issued a statement that it launched a competition supervision procedure in August 2012 with case number: Vj-62/2012 (Hungarian Competition Authority 2013). The initiator of the discriminative agreement was the Ministry for Rural Development that aimed at securing higher incomes for watermelon farmers than they could reach in free market conditions. Six retail market chains (Aldi, Auchan, Cba, Lidl, Spar and Tesco), the association of Hungarian melon producers and traders (the Hungarian Melon Non-Profit Association) and FriutVeb were facing the initiated investigation. The parties were incriminated due to an alleged infringement of the 'prohibition on restrictive agreements'. They agreed on fixing prices of the watermelon produced in Hungary from July 2012 and also on only marketing and distributing imported watermelons during this time above market prices. The GVH in the meantime dropped the case as the amendment – to be applied to on-going procedures as well – of the Act (Act CXXVIII of 2012) on inter-branch organisations and on the regulation of

agricultural markets has been passed and adopted during the September of 2012 (needless to say, the decision of the Ministry for Rural Development caused legal uncertainty and distrust in government institutions). According to these proceedings the Minister for Rural Development was to assess the restrictive agreement conditions and eventually established that watermelon cartel agreement was exempt from the prohibition of the Competition Act.

Figure 6
Farmers' and traders' knowledge sharing meeting at the beginning of the watermelon season organised by the National Association of Watermelon Producers in 2014.
Source: Lendvay 2014, private collection**.**

Despite the fact that those involved in the agreement claimed it was a success, in reality it had a little impact on farmers' lives. Firstly, as around 50% of the produce is exported to foreign markets, half of the production was beyond the scope of the agreement. Export traders were able to negotiate bargain prices in the mid-summer period when most watermelon was ripen and ready to sell. Secondly, although the final consumer price of the fruit may have been slightly higher in the supermarkets than without farmers lobbying, the increasing price gap did not realize higher income on the producer scale. Instead, those making advantage of the situation were the traders who

were working with the usual farmgate prices and were able to forward the produce to supermarket at the higher rates.

Nevertheless, the scandalous meetings between representatives of the watermelon industry and supermarket chains from summer 2012 mentioned above has stigmatised the Hungarian Melon Non-Profit Association. It became persona non grata, put an inadmissible burden on both the local MP Simonka, and the Ministry for Rural Development. The founders stepped back and spurred farmers to establish the National Association of Watermelon Producers, an organization with a similar role (see Fig. 6.). Although often appearing in the media as a collective of farmers, this organization is represented by one wealthy farmer enjoying publicity and has only annual meetings where general issues and predictions about the yields are discussed.

6.2.2. Community engagement in Wales

The support of local community actions has been institutionalized on a state level – probably on the highest possible scale – as part of the British Common Agricultural Policy's Pillar 2. Pillar 2 is aimed at supporting rural communities and businesses, and at ensuring that natural resources are used in sustainable manners. Besides on-farm and supply chain competitiveness and agri-environmental work, the community and its access to service and the LEADER approach is of especial focus. The Welsh Assembly Government accepted the establishment of 'Farming Connect' scheme and 'Agrisgop' projects run by Farming Connect managers. As the Government put it this was a business and social capital development initiative at the same time, as it was:

> *"designed to assist farmers to adapt their business to improve sustainability by encouraging them to draw up development plans and by guiding them, where appropriate to the fulfilment of their plans, towards grant schemes available under the RDP and more widely" (Welsh Assembly Government 2010, 38).*

The management rights of the projects was handed over to the private firm 'Menter a Busnes' that runs the farmer cooperation, R&D, knowledge transfer events and projects (see Fig. 7.). As a farmer put the role of the company in a very simple way:

> *"They do a lot of meetings, they educate you about things and new methods and doing things." (D. E.)*

The meetings they organize are not run on a random basis but follow an array of guidelines; lessons of their social capital generation projects have also been rendered and published. The methodology of their approach to local development signed by Pearce & Williams (2010), introduce the action learning method Agrisgop projects are based on. Action learning is described by a project coordinator as guiding through participants in a way that:

> *"we help people to come up with their own solutions to problems, instead of going into communities or farmers, and telling them this is what you do, we feel that is not the right way, we ask them what is the problem and help them ask the questions and try and get them to come up with the answers – so that is the action learning methodology we use within the Agrisgop project." (E. W.)*

Action learning therefore cannot be separated from cooperation and active participation of farmers in their projects.

The Rural Development Plan for Wales 2007-2013 also recognised the unique demands of the common lands when it proposed the support of "cooperative action to achieve improvements on common land, including support for initiatives undertaken by commoners' associations to mobilize farmers to act together" (Rodgers et al. 2011, 156) and suggested implementing measures of cooperative action in the frame of the policies that target climate change mitigation. It is notable, family farmers do not consider formal cooperation as a resource but much more as a burden. Their approach is clearly visible by the way they find themselves lucky if they remain self-reliant and are not forced to take part in joint activities. As one of them put it when I asked him about farmers' cooperation:

> *"I don't have to cooperate, in my farming life... I don't have to cooperate with anyone! [laughs]." (I. J.).*

Interestingly, the cooperation projects offered by Farming Connect did not come into the same farmer's mind right away and only later appeared in his report on farming practices he takes part in:

> *"...we applied for funding for some breed improvement work with our sheep so we do performance recording and we measure how well they grow etc. and improve them genetically. And so we try to and get a little bit of cash to help that*

work that we do with a small group of farmers that have become a member of Farming Connect and we receive a farmers innovation award, we had to write a grant proposal and say what we are going to do and it was assessed... So I do cooperate! I have forgotten that! So there is after all!" (I. J.)

Figure 7

Images of the knowledge sharing event of 03/09/2014 organised by Farming Connect

for upland farmers.

Source: Lendvay 2014, private collection

Thinking through what benefits it has for farmers to attend meetings and engage with networking and information sharing projects it seemed to be a different aspect of the cooperation projects that came into mind of other farmers.

> *"We try to keep up to date anyway. Sometimes you already know about something. Lot of money gets wasted on Farming connect. A lot of money wasted. And you know on these schemes Glastir and other schemes to fill out a form and get into these schemes you need a consultant because it is very complicated and the Farming Connect pay a 80% towards the consultants but then they charge the farmer a silly money because they know that so you end up paying 500 day for a consultant but it only costs you a 100 pounds. There is an awful lot of money going to waste there… on rubbish." (D. E.)*

The same, rather disillusioned farmer carried on criticising the monitoring system Farming Connect officials conduct that target the success of meetings, projects and advisory work:

> *"What they do then is they do surveys then: "how has your business changed since you have been on this course?" and you say yes, it was good because you want to go, perhaps you want a grant to do something else in a few month time, so you can't say no it was a waste of time when the consultant charged me 400 pounds for doing nothing. So you say yes, it was good but it wasn't really. And then they come back and say oh yes, we've done a survey and everybody thinks it was great…should be anonymous but they know who you are…" (D. E.)*

It seems therefore, as in the Hungarian case-study discussd earlier, farmers often wish to follow a lifestyle based on self-reliance in the frame of family farms. Although farmers are invited to develop traditional practices and devote more attention to innovation wile cooperating with others, the formal, overly administrative, bureaucratic system of projects make them less attractive.

The Cambrian Mountains Initiative is a unique, less state-driven form of farming cooperation in rural Wales that shall be addressed under different conceptual headings. The idea to promote

> *"self-sustaining, resilient and environmentally sustainable businesses and communities enjoying a high quality of life and proud of their place within the Cambrian Mountains" (Jones & Hughes 2012, 13)*

emerged at Ceredigion and Powys County Councils as the vision for the Cambrian Mountains already in 2006. At that time the two councils prepared a bid for funding

from the Big Lottery Living Landmark Fund that eventually has become unsuccessful. Later on however the various actors interested in the development of the region became engaged with The Prince of Wales's Charitable Foundation and a loose association of various stakeholders.

The main idea was firstly to establish and implement a sustainable development approach to the Cambrian Mountains with a concern on the local economy via promotion and 'adding value' to quality local produce and tourism and enhancing the provision of ecosystem services. Secondly, its aim was to build a 'sense of place' through promotion of the natural, historic and cultural environment (LUC 2012) of the Cambrian Mountains based on a common brand around the Royal Watercolour of The Prince of Wales depicting Cwm Berwyn painted in 2008. The principles of the Initiative covered various themes:

• Encouraging vibrant rural communities

• Adding value to traditional family farm products

• Promoting the highest quality local products and services

• Supporting and growing rural tourism

• Enhancing valuable habitats and ecosystems

• Celebrating local culture and language

• Caring for the landscape and its natural and built assets. (LUC 2012)

From an organizational point of view four strands of activities have been marked within the Initiative and the board is made of representatives from the local authorities, the Natural Resources Wales, and the Welsh Government. Two bodies as social enterprises have been set up to deal with daily issues within the framework of the Cambrian Mountains Farmers Community Interest Company and to manage consecutive activities pursued in upland Wales (see Appendix 5) that includes produce marketing among others (see Fig. 8.).

Figure 8

Local Products branded within the 'Cambrian Mountains' range in former The Co-operative Food store in Aberystwyth.

Source: Lendvay 2012, private collection.

In terms of its level of organization, durability, social and financial success and embeddedness and acceptance in the wider community, the Cambrian Mountains Lamb Producer Group is undeniably the most successful strand of the CMI so far. The group has been supplying the Welsh Mountain Sheep of a relatively small size weighing between 12 to 14 kilograms as a seasonally available product to the Dunbia abattoir at Llanybydder. The product, marketed under the Cambrian Mountains Lamb brand, has been stocked by the Cooperative supermarket in the Truly Irresistible range. It has also been served at special events and been supplied to caterers such as Compass (Wimbledon), Mosimanns (Royal events such as the Jubilee Dinner on the 5th June 2012), Aramark (Olympics with 2000 lambs were presented for a single contract alone),

Harrods Food Hall and sales of half boxes of lamb via the shopping channel QVC, as well as supplying other events such as the Ryder Cup (LUC 2012).

The brand is based on the discourse about a historic land managed in a sustainable way and different images and symbols were put into work when creating this discourse:

• the Royal Watercolour as the brand image

• the stories of historic land management practices such as Cyfnewid or Hafod a Hendre

• the sustainable land management and the low carbon footprint of the upland farmers that has been backed by scientifically proven measurements completed by Bangor University and Natural Resources Wales staff (Taylor et al. 2010).

The group as a cooperative is based on the formal cooperation of a group of farmers who agreed to meet special criteria and obey the rules of the group and commonly supply lambs to Dunbia abattoir by sharing the required quota. In turn, contributing farmers gain a premium price with a bonus above the 10 pence price difference that goes to the Cambrian Mountains Initiative Charity. Also, with the help of Agrisgop project managers, the cooperative members set 12 rules ahead of themselves (see Appendix 6). The membership does not set special requirements in front of farmers: according to this set of regulations most upland farmers could easily meet the eligibility criteria. The preferred land management requirements do not differ from those of the officially accepted agri-environmental schemes that the vast majority of the land eligible (77%, Joyce 2013) would be a part of anyway.

The lamb group currently counts 22 members and it is important to see how the farmers came together, what sort of processes lead to their coming together and the development of cooperation between them. The actual establishment of the Lamb group happened with the help of an Agrisgop project where initially 8 farmers were selected and asked to join the group. The farmers were chosen by an advisor of Menter a Busnes company who has been encouraged to organize a group of upland farmers by the representatives of The Prince of Wales's Charitable Foundation as the Prince of Wales was looking for opportunities to support the upland farming community of Mid-Wales. Having a farming background herself, the advisor knew the future members from before and according to their account the farmers knew 4-5 members by names and knew each

other by sight from the beginning. She described her position as enabling her to become a broker between farmers and political and industrial decision-makers:

> *"I am a member of the farming community myself so my husband is a farmer so I know a lot of them anyway... Agrisgop works with people in the community, they trust you rather them someone who comes in, people are quite traditional in their way..." (M. W.)*

The emergence of the lamb group cannot be considered to be completely bottom-up, as the recruitment and the framework of the cooperative were set by the advisors. From the aspect of group development, it is interesting to see what the principls were when selecting who became members. The Agrisgop advisor selected future member according to her principles:

> *"What I did, we tried to identify individuals from different parts of the Cambrian Mountains, so we had two farmers from Tal-y-bont area, one from Tregaron, one from Llandewi', one from Rhayader, one from Cwmystwyth... so they were situated in different areas within the Cambrian Mountains and we bought them together as a group you know with the hope that if the Cambrian Mountains Initiative was successful that group then could expand and expand and expand. So if this was the Cambrian Mountains you know we had one there, and one there, they were from all over the Cambrian Mountains, hopefully they would act as leaders really in their own community and try and get to develop more. So we worked with the group and it was all about developing their ideas, how they could market their lamb, looking at ideas, how can you use the brand and the landscape of the Cambrian Mountains to get more money for their product. So we worked with them and then we went through to Dunbia, the food processor with one member of the Cambrian Mountains went up – and myself – went up to the head office of the Coop and did a presentation for the meat buyer of the Coop to see if they would buy you know the Welsh lamb at a premium rate so the farmers had extra money than what they used to have plus we managed them to accede that they would pay few pence that than would go back to the Cambrian Mountains Initiative charity side of it." (M. W.)*

Further, she described the personal qualities she was looking for:

> *"We were looking for people who would be willing to drive the project along as well you know, people, who were keen and were... who had the initiative to lead in a way, to be little leaders within their own communities. But you could argue there could have been other people as well, who could have been involved, so you could say it wasn't fair!" (M. W.)*

This selective recruitment of cooperative members is reflected in the account of a farmer whose neighbour was involved from the very beginning, who describes that whilst they take part in daily activities together, their cooperation did not extend to the sharing of information about the Lamb Group:

> *"We didn't know about it [the formation of the CMI] to be honest, we didn't! (…) We weren't asked [if we wanted to be part of it] but it probably wouldn't have suited us anyway cause of the type of lamb, our lamb is not big enough anyway… and we were organic but we should get a bonus for that… We haven't heard about it [from our CMI member neighbours], we heard about it from somebody else to be honest. (…)" (T. U.)*

The further development of the group is also notable in terms of thinking through how social capital as willingness to cooperate and develop networks manifests itself in the Cambrian Mountains. The group has at first been supplying lambs according to an arrangement whereby a farmer from Llandewi Brefi selected by the group acted as secretary and negotiated between Dunbia and Coop and the farmer cooperative members. The aim was to match the anticipated demand of the supermarket chain and the abattoir with the numbers of lambs ready for slaughter at the different farms involved with the principles so as to arrange a fair delivery number from all involved. In the first few years the secretary put a lot of effort into communicating with the buyers and the members for sharing supplies. Later on this task was transferred to a manager employed by The Cambrian Mountains Farmers Community Interest Company and more recently it became the Dunbia abattoir that took over all organization. Although earlier farmers managed the supplies themselves allowing each other to plan ahead, the current practice is that they phone in to Dunbia where – depending on actual demand – farmers are given a quota on a first come first served basis. Also, a major change happened in 2010 when – according to earlier plans – the number of lambs on demand doubled to 400/week and the farmers were asked to recommend new members. Eventually the group grew from 8 to 22 farms, most new members coming from the southern area, near Tregaron, that was in close reach of the Dunbia abattoir. During the extension process each farmer involved had a chance to recommend at least one new member he trusted and thought would be able to work together with the cooperative. The extension brought however inconvenience and disappointment as the new lamb

supply numbers did not turn out to be constant and the earlier levels of delivery now had to be shared by 22 farmers meaning that individual farmers' share dropped and became insecure. This disappointment was expressed by a farmer as he said:

> *"Originally it was a new market for the lambs and we thought it was going to build into something much bigger which it hasn't. So we are still trying to find new markets and increase the throughput but it is very difficult and you know it's been though this last 2 years anyway you know cause a lot of Welsh lambs would go the Greece, Portugal and Italy and Spain you know the Mediterranean countries – the small mountain lambs – they been in financial problems in those countries and they can't afford to pay so much for the lamb..." (D. E.)*

To my question whether he was considering leaving the group he replied:

> *"... it might still [build into something bigger] but at the moment it is not. I don't want to give up on it cause you know every lamb that goes through the scheme it is one less to send elsewhere and you know you feel that if you help to keep it going for now maybe something would come out of it further along, so try and support it really... financially we are not gaining anything, we are having to just jump a lot of loops and go to a lot of meetings just to be a part of it..." (D. E.)*

The actual role and motivation of the market actors such as Dunbia and Cooperative have often been neglected in discourses praising the success of the cooperation between farmers and the supermarket. According to the report of a farmer about the abattoir a mixed picture of the role of Dunbia started shaping where the role of the company is not purely industrial. Instead, the role the abattoir plays extends to and also beyond processing meat to the further development of existing practices in order to meet customer demands. Dunbia is also an actor in marketing and an influencer of customer behaviour. Describing how he sees Dunbia, a farmer answered:

> *"Yeah, Dunbia now are... they've taken over the running of the lamb group, so they find different avenues and then you know they can balance the carcass, so if somebody wants a lot of different cuts they can source the rest of the carcass out to somebody else. And it was really interesting just going there and seeing... I think most farmers have been into the actual killing room enough but going then into the processing units and then seeing how the meat is cut up, the different sections... the new things they are involving, kind of with the shoulder, they are able to debone the shoulder, and then turn it into roasting joint... and I wasn't aware that they could do that kind of thing and yeah, it was really informative." (R. R.).*

192

Farmers believe the abattoir and the retailer are interested in continuing special business with Cambrian Mountains Initiative not because of the quality of products, the financial benefits or their support for upland farmers but simply because of the wider connections and links they are able to build. As the leader of the Agrisgop project who took part in the negotiations from the very beginning put it:

> *"The fact that Prince Charles was behind it that was a very... I think, when we went out to the Coop and were trying to get them to buy it, I think they preferred the fact that Prince Charles was behind it rather than the Cambrian Mountains." (M. W.)*

This neglect of the big market actors towards the farmers and the disrespect producers feel is further nuanced by the farmer who complains for the lack of transparency between the farmer, the abattoir and the retail chain:

> *"The one problem we are having is we don't know how many lambs Coop are buying from Dunbia, we know they are buying 200 lambs a week from the farmers but we don't know how many lambs are going from Dunbia to the Coop as Cambrian Mountain lambs. So we don't know, we don't have any contact with the Coop so they could... I am not saying they are, but they could theoretically be buying 600 lambs from Dunbia thinking they come from members of the group whereas only 200 lambs came from the members. You know we deal with Dunbia, Dunbia deal with Coop... We have to follow all the rules, but we don't know if they.... It is possible. But what makes all of us a little bit suspicious is that we are rarely get to speak with Coop, we never get to talk to them directly, they may be buying more lambs than we know..." (D. E.)*

In recent years however many farmers have not been supplying lambs to Dunbia labelled 'Cambrian Mountains Initiative' as the batches were too small, the selection of lambs by sizes were too time consuming, and farmers found it was easier to simply transport the lambs – otherwise eligible for the Cambrian Mountains brand – to the same Dunbia abattoir of Llanybydder at a lower price. The Cambrian Mountains Initiative Lamb Group has been developed with the active agency of actors fulfilling only temporal, catalytic roles and who act as brokers and it has been shaped further on according to outside actors, such as The Price Charles Charitable Trust, Dunbia abattoir, and the Cooperative retail chain, but also the managers of the Cambrian Mountains Farming Community Interest Company.

6.3. Conclusions

This chapter introduced some of the social and economic features of the case-study areas and reviewed what resilience might mean to local stakeholders. Both communities can be described as disadvantaged in many ways but as clarified in the introduction, the aim of this thesis is not to 'build' resilience or answer practical questions of exact rural communities. Concentrating instead on conceptual questions, this chapter has shown how social capital can be operationalised as trust, willingness to cooperate and to take part in networks and highlighted why there is a need for a deeper understanding of how these properties of farmers and communities evolve. This chapter therefore acknowledged the partial validity of the community resilience agenda discussed in Chapter Two where community resilience – from the perspective of the farmers – meant to maintain financially viable on a community level and possibly by cooperating with others to reach common goals and interests and combat external pressures. Resilience here, following the literature and the accounts of various stakeholders – was a term imbued with normativity and that meant stability, predominantly.

Referring to the discussion of Chapter Three, the understanding of social capital applied in this chapter was predominantly following the school of Putnam in the sense that trust and willingness to cooperate (as bridging social capital tying farmers together who have vaguely known each other) had an outcome on a community (or even higher) level and also aspects of the school of Bourdieu appeared where habitus determines behaviour and the roles people play were 'inbred' into them. The chapter introduced some of the most striking and well know examples of active community engagement from both case-studies where deliberate, purposeful, intentional actions were carried out by people to develop cooperation based on awareness in order to execute coping strategies. The development of networks was similar in both cases: it was a small number of brokers, active agents undertaking leading roles who organized community members. In terms of social capital literature introduced in Chapter Three it the 'structural holes' concept of Burt (1992) and linking social capital of Woolcock (2001) that also appears.

Interestingly, some of the activities mentioned in the frame of cooperation were not anymore about proactive agency but much more 'passive' as in practice they meant no more than following rules within the frameworks of cooperatives. The formation of groups and the inclusive nature of cooperatives and pressure groups also resonated with the discussion on social capital mentioned in the end of Chapter Three. However, exclusion and 'dark side of social capital' – concepts also mentioned earlier in the same review chapter – and the phenomenon whereby not following the generally accepted rules of the community or capitalizing on a position of being 'outsider' also appeared in this discussion, making social capital a more fuzzy concept. In practical terms, this chapter introduced pressure groups and cooperatives that were developed to combat economic hardship. Looking at the full size of communities, it was only a small number of farmers who took part, or were willing to take part in these forms of cooperation (the CMI represented only 22 farmers from the whole of the uplands for example) what might suggest that farmers do not cooperate. The following chapters will show however, that cooperation and the development of networks is what establish the community and is able to solidify certain structures. It is argued that it is not the planned cooperation led by local leaders and decision makers that develops community networks but much more the relations people have with non-humans.

In other words, this chapter was short of elaborating two issues. Firstly, the earlier sections that were built on discussing the power of cooperation could not explain the processes described: how and why habitus and willingness to cooperate is shaped in the ways experienced. Secondly, the events cited by community members cited 'rare occasions', perhaps referred to only one day out of the 365 and so a much more domesticated interpretation of social capital is needed that is able to capture daily practices and explain how the community is produced in the first instance. The discussion in this chapter did not develop how the community as a network is reproduced simply by following farming practices. Building on an approach to social capital that considers networks, or at least network connections and links as the basis of the community – also introduced in Chapter Three – is an issue the following empirical chapters will concentrate on.

The next chapters of the thesis aim to address the two shortcomings of this chapter by concentrating on the relations, connections between and the agency of humans and non-humans (the land and the commodities) in the frame of assemblage theory of DeLanda as shown in Chapter Four. By doing so, this research aims give an explanation to how such linkages are able to solidarity the community and why people relate to each other in certain ways in light of their relations with non-human components of the assemblage. Finally, considering the community as part of a rural assemblage unpacks how these relations are able to determine in what ways the communities are able to perform stability and how they are subject to restructuring: what resilience means to them.

VII. THE AGENCY AND ROLE OF HUMANS AS COMPONENTS OF THE COMMUNITY ASSEMBLAGE

The aim of this thesis is to think through how 'rural community resilience' can be placed on firmer ontological grounds than how it is currently treated in the literature. As a concept that has gained popularity in both academic and policy oriented literature, discussions about community resilience are predominantly engaged with questions about how people act and should act in order to make their communities more resilient. The earlier chapters (Chapter Two and Chapter Three) showed how the concept of resilience has been used as a highly normative term focusing on positive outcomes mostly within the limits of intentional actions of humans and has been linked to aspects of social capital following these principles (while the previous chapter, Chapter Six, showed how such approaches can be imagined to be put into practice and what limitations they have). Chapter Four introduced assemblage theory as an approach that may be able to help us explain how certain formations of social capital can be better explained and how the network connections within a community become reproduced. Assemblage theory also includes a conceptualisation of the agency; agency not only of humans but also of non-humans that take part in establishing and shaping rural communities. This way the resilience of the rural community is imagined as being based on daily practices and non-intentional changes caused by links within the assemblage. While the role of such non-human components is a focus of this thesis, this research acknowledges that humans are vital components of farming communities and therefore the current, first empirical chapter is about humans, and farmers in special.

The objective here is far from fully unpacking the complete networks within a community. Instead, the practical aim of this chapter is to highlight how humans can be handled on the same ontological grounds as non-humans within the framework of assemblage theory. Another key point is to show how components of the rural assemblage may be regarded as 'incapacitated', and consider the roles they take, such as agency, as depending on the arrangements they take in relation to other components. As this discussion is focusing on some of the components that take part in building up an

197

assemblage, the connections these components have *in relation to* other components will, naturally, also appear to some extent in the following chapters (Chapter Eight and Chapter Nine) about land and commodities but from a different perspective. Therefore, this chapter can be best understood when read and considered together with the following two chapters.

The current chapter briefly introduces how humans as components within the rural assemblage can be embedded in an assemblage approach. The chapter starts with a discussion about how we may rethink farming community. It then moves on to briefly think through how family farms can be regarded as longstanding connections that developed though land-commodity-human relations. Regarding resilience, this is important as family farming remains to be the basic social unit and form of social capital in both case-study areas. The second half of the chapter introduces findings of the empirical work and shows how community members experience being merely components of a rural assemblage – as determined by the relations they have to land and commodities. The empirical study reveals that although the case-studies are very different at first, ontologically the experiences gathered are similar.

7.1. Performativity and the rural community

As discussed in details in Chapter Three, this research rejects the concept of 'rural community' or 'farming community' being applied in such a way that direct political imperative would be attached to its meaning. Instead, this project shares the critique of MacKinnon & Derickson (2012) who speak of how neoliberal thinking handles 'community' as a nebulous but 'tremendously evocative' concept with unequivocally positive connotations in their discussion on agendas of transition thinking that consider community self-organization in terms of the agency of local people. Discussing to what extent communities shall be regarded as existing entities or emerging as unified entities due to a unifying force, MacKinnon and Derickson claim:

> *"rather than referring to a pre-existing collective interest, invocations of*
> *community attempt to construct and mobilize such a collectivity. By generating a*
> *discourse of equivalence between groups and individuals, they often have the*

effect of suppressing social difference (according to class, gender, race, etc.) and masking inequality and hierarchy" (MacKinnon & Derickson 2012, 7).

Community, in this way, as part of the resilience projects introduced in Chapter Two, becomes an abstract identification of an imagined sociospatial object that mantles the identity practiced by those of involved. The predominantly Marxist application of social capital also views farmers and other community members as labour worth exploitation in pursuing economic goals. Li (2014) recalled Karl Polanyi's words, who discussed how the treatment of land and labour only as commodities would allow "the market mechanism to be the sole director of the fate of human beings and their natural environment (…) and would result in the demolition of society" (Polanyi 1944, 73). Therefore, regimes of exclusion are subject to continuing debate about what Foucault called "the right manner of disposing things" (1991, 95).

In contrast, Holt (2008) in her paper introducing a critical analysis of social capital (as mentioned in Chapter Three), referring to Judith Butler's works (1990; 1993; 1997; 2004), recalls how feminist theories on performativity may provide a different perspective. Holt emphasizes how "norms of appropriate identity performances become unconsciously inculcated into individuals" (Holt 2008, 237) and so performances are not entirely conscious and rational but they are merely "done" (ibid, 237). She argues that an actor 'becomes' through the event, rather than precede the 'doing' of the performative event. Actors often reproduce historical acts, and so the spatial-temporal environment in which the individual is placed and the relations to the other components play a key role in repeating actions. As Holt (2008) puts it:

> *"the fragility of the performance or the event, which is configured by the juxtaposition of a host of human and non-human actants, raises the importance of context" (ibid, 237).*

Referring to McNay (2000; 2004), Holt also asks how individuals' sociospatial positionings may influence their capacity to transform broader societal processes and representations.

This research also acknowledges the critiques that relational approaches such as ANT or assemblage approaches lack an immediate and direct political imperative. In

their discussion, Kirsch & Mitchell (2004) consider analytical weaknesses of ANT as they pose the questions:

> *"why are "things as such" produced in the ways that they are (…)? How (…) can people struggle to take control of those non-human actors, those things as such, and shape them so that the "nature of things" is really on their side?" (ibid, 702)*

The authors challenge the argument that departs from the definition of actor-networks of John Law and claims that

"productive and communicative social capacities (…) can only occur in the collective work of networks, then an actor is always also a network, an actor-network, or, to add insult to injury to the humanists, an effect of authority produced in a network"(ibid, 688).

Kirsch and Mitchell caution from going to the other extreme either; the examples of daily life they cite should not be interpreted "as implying that the relations among humans, objects, nature, technologies, and knowledges are always fully within human control" (ibid, 701). In their example they are also not the machines and commodities or other objects as non-humans that would control the operation of humans and social relations; as they put it "it is not email that makes us work nights (and days), but the social relations of work" (ibid, 701). Kirsch and Mitchell here consider such social relations of work as a concept similar to Gramsci's 'nature of things' that are not purely networks of associations, but also the "real, material, ossified things with specific shapes, with pre-determined modes of operation" (ibid, 701), such as the logics of capital production. Such arguments resonate with Butler's discussions on performance – shown in the earlier section – as well as Deleuze's 'bodies without organs' concept that again, imagines the whole as constructed from otherwise fully functioning parts (Deleuze & Guattari 1972). Nevertheless, this chapter (as well as the following chapters) aims to capitalize on this critique and consider the humans as being coerced or constrained to a certain extent by the relations they have with non-humans.

Arguably, concentrating on human components of the assemblage, farming communities are built up of various kinds of human actors such as farmers, their family members, local service providers, decision-makers, seasonal workers or other people situated on further points of the food-chain. The next sections, follow the definition

applied within this research and introduced within Chapter Three, and concentrates on those people who are in direct contact with the land and the agricultural commodities. As a conclusion from the discussions of above, the humans analysed within the scope of this thesis are acting according to certain logics of agricultural production, logics that are often against or controversial to some of their personal interests or the rules of the market, perhaps. However, in some cases the actions humans take are also sudden and unexpected as they are driven by relations people have with non-humans. As will be shown in Chapter Nine, such events may have spillover effects and may force the community as a whole to change and therefore become relations that are directly linked to what resilience means and how resilience is performed by communities.

7.2. Family farms

Family farms are the most common form of social-economic organisation in rural Europe (see Darnhofer et al. 2016, Suess-Reyes & Fuetsch 2016). The family farm is also the basic social unit in the structure of the communities analysed in both case-studies. Beyond being considered as form of business partnership, the family farm is a unique spatial-temporal entanglement of humans, markets and the land (this role of the land is elaborated in Chapter Eight). Family farms have been representing stability within the social structure of many European rural areas and farming communities. Although there is an ongoing process of concentration of production in agriculture, the process is still slower, and the family farm has not been eliminated and it is acting differently compared to how it has been foretold by nineteenth century theorists, as reviewed by Newby (1987).

Classical writers such as Marx, Weber and Kautsky analysed agrarian development within the frames of their theoretically driven investigation on industrial capitalism. Their writings reflect the fields of interest of a particular historical context and the political debate of the time. Their works were based on the assumption that manufacturing industry and other sectors of the economy serve as a pattern for agricultural development (Newby 1987). They come to the conclusion however, that it

is partially the importance of land as a factor of production that causes producers being allowed to continue farming as formally free farmers.

Marx (1867) based his analysis on the premises that the English situation will be prototypical and the growth of capitalist agriculture in Britain and the transition from feudalism will lead to a distinctive capitalist class structure as in the case of industrial capitalism. Marx's expectation for the development of agrarian capitalism in the shape of a tripartite class structure of English landowners, tenant farmers and landless farm labourers turned out to be incorrect. Regarding the English situation, it was

> *"the persistence, not the disappearance, of the peasantry which has turned out to be the most distinctive feature of agricultural capitalism" (Newby 1987, 4);*

there appeared to be a need for a completely distinctive analysis in agricultural production due to its peculiar conditions. The work of Weber (1976) also highlighted the importance of the natural conditions of production in agriculture: it is "bound to place, time and organic means of work" (Gerth & Mills 1948, 368) which remain to give economic superiority to self-responsible work. According to Weber, despite the fact that capitalist farms have a more rational form of organisation and a higher technical efficiency, it is the private interest and adaptability to fit the demands of the local market that maintain the independence of the peasantry and family farms.

The arguments that claim that partially nature proves an impediment to the penetration of capitalist development into agriculture and that take the biological or natural production processes as key in this process have remained to be an anchor in the literature (e.g. Goodman et al. 1987, Fine 1994). According to some observations, agriculture is less susceptible to capitalist development due

> *"to patterns of specialization, diffusion of standard technology, its spatial dispersion, and the natural rhythms associated with climate, growth and crop rotation" (Goodman & Redclift 1981, 11).*

In his revision of the writings of Marx originally published in 1899, Kautsky (1988) separated the changes in landownership from tendencies within commodity production as he claimed that agriculture is driven by different laws of capitalist development. In his understanding capitalism means "vertical and horizontal integration by capitalist farmers into food processing and agribusiness" (Newby 1987, 8) instead of

horizontal growth of capitalist farms. Kautsky (1988; 1925) also discussed the emergence of the worker-peasant, the peasant-worker and the part-time farmer as the peasant families were often forced to sell labour rather than agricultural commodities; if land was not enough to match market conditions farming remained a household activity responsible for a relatively marginal part of the income. This led to the co-existence of peasantry and the large-scale capitalist farms.

In the late 1960s and early 1970s a more recent strand of works echoing the nineteenth century writings on this subject were developed by sociologists but by highlighting similar issues from different aspects. The basic unit of analysis in Chayanov's (1966) writing was not peasantry in general but the peasant household which, according to Chayanov, was driven by factors relating to household structure such as the family cycle beyond the rules of the market. The 'peasant studies' that was developed following Chayanov's and Marx's investigations also considered the single peasant household as the unit of both production and consumption (Newby 1987) as the concept of simple commodity production was introduced. While the works of Harriet Friedmann (Friedmann 1978; 1980) were criticized for still considering the small farm as an anomaly and stopping at the farmhouse door and treating the farming family as a theoretical black box, she gave a contribution to the discussion about why family farms could remain viable (Newby 1987). Her main contribution to the debate was to regard the simple commodity production as an analytically separate concept from that of capitalism. Friedmann's ideas were later debated as the existence of simple commodity producers does not necessarily indicate pre-capitalist, or non-capitalist, social forms and distinctive forms of capitalist social relations do not represent analytically separable modes of production.

The family farming sector had the capacity to reproduce itself and according to Newby (1987), and it is the household instead of the individual farmer that is the basic unit of successful analysis. As Newby put it:

> *"in order to understand the driving forces which lie behind the action of the family farming unit, it is necessary to investigate all of the various component parts of that household's income and how the necessary labour is divided between its constituent members" (Newby 1987, 13).*

Newby suggests concentrating on the concept of pluriactivity, that – citing Pahl (1984) – refers to internal household work strategies within agricultural production and is a key to the survival of the family farm as a persistent social form.

Focusing on current processes, in her extensive discussion on the peculiarities and processes typical to family farms, Lankester (2012) finds a number of discourses surrounding the family farm. Firstly, referring to Shortall (1992) and Little & Austin (1996), Lankester identifies a 'traditional' discourse shaping self-identity whereby agrarian ideology and patriarchal power relations and is maintained largely by "patrilineal inheritance patterns" (Lankester 2012, 235). This ideology is based on an independent, smallholder male producer who lives on the land with his family. The agrarian ideology is imbued with a 'celebration of farming' and farmers, and is strongly tied to a traditional gender division of labour. Gasson (1973) also highlighted the belief in a preference for the lifestyle of farming and an independent work style that manifests itself in gendered responsibilities of a control of the 'outside' (men) and for caring for the household (women), with the latter being considered as an assistant role rendered 'invisible' in economic terms (also see Keating & Little 1994, Liepins 1998).

Secondly, Lankester (2012) reviews a 'liberal discourse' of family farms, referring to Bryant (1999) and Coldwell (2007) among others. The emergence of this discourse is a result of industrialisation and globalisation within agriculture and the rise of neoliberal economic policies. The farmer has become characterized by rationality, professionalism and a seeker of profit (Pritchard et al. 2007, Vesala & Vesala 2010, Morgan et al. 2010) as farmers have engaged with the production system linked to legal and financial structures applied in the wider economy and family farms have become enterprises. According to Lankester, Bryant (1999) describes

> *"the 'detraditional farmer' as being male or female, feeling pride in achieving a viable and profitable farm and developing business skills, being open to changing practices to increase viability and putting more emphasis on planning the operation rather than on labouring" (Lankester 2012, 236).*

Thirdly, Lankester (2012) discusses the changing gender relations within family farms in the frame of the 'women in agriculture' movement. As there is little empirical

evidence about this issue in the data collected in the frame of the case-studies, Lankester's final point is not elaborated in details here.

Family farms have other major characteristics that were not discussed in Lankester's review. These, however, regard the attachment and relation to land and animals, those points that gain more attention to in the following chapters (Chapter Eight and Chapter Nine). Also, it is important to mention that in this thesis, when referring to 'farmers' as respondents, 'the farmer' is generally one person representing a family farm, but in many cases, in practice the interviews happened by speaking not with a male farmer but with a couple, the wife of a male farmer, a female farmer, the son of the farmer or by the dinner table in the presence of the whole family and these happened in both Hungary and Wales. The next sections describe issues related to the role of humans in the rural assemblage as they appeared in the two case-studies of this research project.

7.3. Family farm and beyond: the watermelon producers

As seen earlier in the argument of Holt (2008), 'farmers' should not be considered a homogenous class, but as a group of agents often consisting of different layers. In the case of the watermelon producing community in Hungary, many of the smallholders own a 1-2 ha land they cultivate next to their houses in the garden situated in the end of their yard. Such a small piece of land would not allow people to make a living alone in Medgyesegyháza. They are often not full-time farmers and pursue various occupations, and cultivate their fields after work (what makes it very difficult to keep adequate statistics about the number of watermelon farmers). The majority of the production comes from farmers who own or rent fields sized from 3 ha up until 20-30 ha; currently there are around only 10-20 farmers working with plantations above 20 ha. Watermelon is a labour-intense commodity (as discussed in details in Chapter Nine) and so a field of above 1-2 ha cannot be fully cultivated by a single farmer alone.

Watermelon farming has traditionally been an activity based on the cooperation between family members but without the help of others. An account given by a farmer

form Kunágota, family is characteristic to the majority of farms to date. As I asked what the role of family is, he replied:

> "[it is] very family based... I live together with my parents – although I got my own family as well, I try to hold everything in hand and they help me out with accounting, paper work and controlling... if there is any task for the tractor my father goes out, so we fully synchronise these works." (M. E.)

The farming practices are shared among family members – based on unwritten household strategies – and individuals take part in running the farm depending on the given work load. In certain times of the year – and especially during the mid-summer harvest time – nowadays one family is not able to do the watermelon picking on its own. Traditionally, village people practiced an informal labour sharing practice based on reciprocity whereby relatives and friends and acquaintances helped each other out. In recent years however, with the aim of eliminating informal economy and so-called 'black labour', strict registration procedures were put in place where such 'grey' activities are not allowed. As the same farmer added:

> "The problem is that people don't dare to do that [the reciprocal work] anymore, I remember in my childhood building a house happened by calling together the neighbours and friends, and if nothing else, they spent a good day together and did the construction works. Today it is all so strict, you have to register everyone in advance, they are not allowed to come over to work at my place." (M. E.)

When asking about how they are able to pick a lorry-full watermelon in a few hours' time, he went on elaborating the issues of day-labour in watermelon farming:

> "There are 900 people in the village on benefits – to put it in a correct way – and they go on communal works in a rota, so not all can come out at once, but they solve it quite flexible they beg off. So here [in Kunágota, a village neighboring Medgyesegyháza], we are still able to do this with local people. We don't work with the same faces all the time. This is an inconvenient disadvantage, people are not fully trustworthy [compared to friends and relatives], so this can be said overtly... 'cause it does happen people say I'm coming, I'm coming [to work in the fields]! But it is only for sure when they are out [on the field].
>
> However, that doesn't always work either, it happened that someone joined the line and left home after half an hour. That is an interesting attitude, if people have a little more money their way of thinking is different... they believe its

going to be like that from then on and won't come out... but in a few days' time they run out of money and they come again asking if there is any work..." (S. E.)

Figure 9
Watermelon picking with day-labour in Medgyesegyháza.
Source: Lendvay 2013, private collection.

Seasonal workers not only mean those unemployed or on benefits in the locality (see Fig. 10), but they are a special group of people within the watermelon producing community. They are the people within the plantations and in physical contact with the watermelon the most, but still, as Salazar put it, they "can hardly be considered as full members of the local community and the agricultural economy" (Salazar 1995, 174). Every year from March to September hundreds of seasonal workers flee the fields of which not many are local people, approximately a half of them, 200 or 300 are Romanian whose appearance gives a new look to the settlement. Participant observation provided me and opportunity to engage with the exploitation these people face.

It was at this point of the research that made me question whether resilience – as an ability to maintain the identity, function and structure of the community – is always desirable at all, and it seemed that clearly resilience has a dark side in this sense. In the

Hungarian case, it is exploitation of seasonal labour that is visible and is essential to the existence of the community. The level of exploitation of seasonal labour revealed itself as I became part of the day-labour myself. While I was on the local market barefooted asking farmers about their harvest in the summer of 2013, not having and day-labourers around, a trader called over as:

"hey boy, come on over!"

He thought I was seasonal labourer looking for a job and so I was offered a British Pound worth of Hungarian Forints for an hour's work in the boiling hot summer by loading his van.

Figure 10
The van that I loaded with watermelon.
Source: Lendvay 2013, private collection.

While it is the Hungarian farmers who appear in the media, the reality is, that during the summer months hundreds of (mainly ethnic Hungarian, Hungarian speaking) Romanian citizen people flood the region often with no work permission or proper housing. A sad instance of encountering their situation was when a young guy from Romania I met, complained about the unendurable housing conditions: 20 of them were staying in one dirty and dark room provided by a labour exchange manager. Nevertheless, these people do the work local people hardly would undertake, as seen in the above quote. This situation causes social tensions that neither the local government

nor other authorities are able to tackle. Seasonal labourers are also extremely exposed to shifting labour market conditions, but as their presence is essential to the community in labour terms, they are key to the agricultural community's success. On a broader scale it seems that in reality when we discuss the resilience of a community, we cannot speak of a 'fairy tale': inequality, oppression and exploitation of certain community members is a 'dark side of community resilience' often neglected.

7.4. Reproduction of the family farms: succession issues of the lamb farmers

When thinking of resilience and the community as an assemblage, it is inevitable that it has to be taken into consideration how certain components need to be replaced by others by time; in practical terms, how the farm ownership and labour is reproduced within the frame of the family farms. When viewing resilience as the system of cross-scalar processes (as discussed in Chapter Two) the farmer and its succession shall be regarded as a large scale cycle where modifications occur in a frequency of only multiple decades. As Mann (2007) discussed on succession, there are different rationales, pathways, and strategies linked to the process of farmer reproduction. In the Cambrian Mountains, farmer succession is very much about a relationship between human and land and human and sheep.

Compared to the Hungarian case, in the Welsh upland farming community the farming is even more based on cooperation within the family farms. Many of the farming families of the Cambrian Mountains are present in the area for many generations; an influx of English farmers only appeared in the 1980s when the land price differences attracted a small number of newcomers. Farming as a family is not only a tradition and an ideology but based on rational values as well. As one of my respondents told me:

> *"They are all family farms. The father, the grandfather all and everyone recommends to have family ran farms…" (G. L.)*

After being asked how he imagined the land to look like in a few decades' time, he immediately referred to the concept of land attachment:

209

"I don't know if I can answer what the farm would be looking like look in 50 years' time, but the only thing I do know is the last thing I would like to do is sell the farm. Somehow you are tied to the land... its... I can't explain it. I wouldn't want to rent it, cause it would be difficult to see someone else farming my farm somehow... so my main objective is to make sure the farm that I have now will be at least as productive 10-15-20-25 years' time as it is now, so hopefully if we have children they can then decide if they want to farm it or not..." (G. L.)

The question then emerged then to what extent is ownership and farming as an occupation become separated, he included an element I did not expect: and that is solitude. When deconstructing a farmer and thinking though how it is built up of materials and discourses, the relationship it has with solitude means, paradoxically, a relation and the lack of relations. The ability of a human to act in a way required by the other components of the assemblage, that is, if one is willing to maintain a lifestyle based on a low number of interactions with humans – is a critical point.

My interviewee discussed the opportunities of his future children as:

"I will be honest with you, you have to want to farm. If you are not... if that is not what you want to do, then it is very difficult to be... because you are hold there whole day, every day. And the interaction with people was very small. That can be sort of... not mental breakdown, but if you got bad weather day after day, if you got problems lambing, and you got nobody to talk to, I can see how depression can set in, so even if my children would decide to farm, I would make sure they have some kind of skill as well. Be able to do electronics or plumbing or carpentry because all of that would be useful on the farm as well... if that makes sense so I would support them if they wanted to farm, but I would make sure they got some kind of skill as well." (G. L.)

Discussing further the options of farmers and the succession strategies, the farmer carried on with introducing possible temporary human components to the farms embodied by the letting of the farm:

"There is an element now I know about where somebody has got a farm, but they are too old to farm, and the rent it with an agreement with a younger farmer next door there is a period of agreement, a 10-15-20 year agreement that the farmer who owns the land will do X, Y, Z, "I will build the shed there and do that and this at my cost", the younger farmer then will farm the farm and pay him a rent per year, so it is a contract farming. I can see – because the average age of farmers was in the late fifties a couple of years ago I think – it goes down now to earl sixties. (…) An elderly farmer will agree with the younger person who might not even have a farm but wants to farm... that you know I still own land, but I allow you to do X, Y, Z with it as you wish to farm it your way and

you pay me a rent because at the end of the day the farmers are set, it is going up in value because the farm is being looked after so an extra chance to… and the safety net that he knows "I got 10 to 15 years, I am not going to be thrown out"." (G. L.)

He carried on with the personal story that is highly likely to feed into a somewhat similar formula but with more flexibility and a shorter term:

"At the moment we are getting someone to come two days a week and I am not there to do the work that I would be doing when I was there so I got to come to the decision that I try and get somebody as a farm worker to work for me or somebody through some kind of apprenticeship scheme where we could co-work the farm and he could help me manage it as well, giving more responsibility and that needs to be looked at the next year or two…" (G. L.)

Figure 11
Farm work brings people together. Sharing a tea and cake with farmers and a farm worker after the mid-summer sheep gathering in Cwmystwyth.

Source: Lendvay 2014, private collection.

211

Once again however, it was the combination of ownership as a relation between the human and the land and the exposure of the farm to natural elements that seemed to be problematic:

> *"…because it is difficult to get somebody to do the work, it is ownership of the farm you know, so any good workers out there would already have a job if that makes sense. It is all very on the same rights "I want you to do X, Y, Z today". I go off to work. Now if X, Y, Z all work outside and half an hour after I left it starts pouring down rain that you can't do X, Y, Z, you need some kind of ownership by the worker, you see "I can't do X, Y, Z, but I know A, B, C needs to be done, so I do that instead"… and so he knows how the farm works instead of just turn up and is told what to do and then goes home." (G. L.)*

With all the changes and developments in farming practices affecting the Cambrian Mountains, when it comes to the 'definition' of farmers, the arrangements of components – the relations between humans, their land and the agricultural products – remains strongly materialized and highly coded. It is unlikely that the intensification and industrialization processes experienced in Hungary would appear in Wales.

7.5. Conclusions

This chapter is the first of a series of three consecutive empirical chapters that aim to build up an argument on the connections between resilience, social capital, assemblages and non-human agency. As opposed to readings of resilience where actions are intentional and based on awareness as seen in the literature review of Chapter Two (and how this approach can be put into practice in Chapter Six) the current chapter gave a brief introduction to how humans may be understood as components of a rural assemblage.

Here humans are considered to play a role in a rural assemblage by acting in ways that are driven by the roles they take as food producers. When speaking of a community of humans, instead of elaborating a full network analysis, the sections above intended to show how family farms as the basic units of the communities operate and how they are reproduced in time: family farms are based on relations and connections between people, the land and commodities – aspects of the latter two are described in

details in the following chapters. Although the stories from the two case-studies reflect very different aspects, they both support the argument that humans have material properties: the Hungarian case of the watermelon producers reveals how humans have limited physical abilities (especially in relation to the watermelon, as developed further in Chapter Nine) that has an imprint on the social organization of the community that manifests itself in the high day labour demand. The presence (or recent appearance to be more precise, as will be shown later) of a large number of day labourers does not impede family farms to remain to concentrate ownership and decision making roles. The Welsh case of the lamb farmers referred to human-land connections and the personal responsibility of the farm worker that, again, supports family farms to be the basic unit of cooperation. The question of succession also hints at the materiality of humans: individual community members are merely momentary in a historical context and the reproduction of 'the farmer' is a key issue when speaking about resilience in a longer time scale. The sustenance of the community will require replacement of its members in some ways.

Speaking about what this means in terms of social capital, it is the bonding social capital or the strong ties (as described in Chapter Three) based on trust within the family that is the main form of social capital and what adds stability to the community. The cooperation between community members may take other forms as well; the reciprocal work between farmers in Hungary also follows patterns of kinship. Although the family farms are based on concentration of resources and a level of exclusion, the demand for additional labourers did not lead to significant conflicts between the 'insiders' and the 'outsiders', as experienced for example in the work of Svendsen (2006).

Needless to say, humans are connected to each other in many other forms and locations beyond the farm (as mentioned in details later) but due to the focus of the study these aspects are not elaborated in details. Humans are also enrolled in the rural assemblage in many other ways as well. The impacts of the relations people build with the land and non-human objects are discussed in the following chapters.

VIII. THE AGENCY AND ROLE OF LAND AS A COMPONENT OF THE COMMUNITY ASSEMBLAGE

This thesis follows an assemblage approach as a tool to think through the role of relations in farming communities' resilience. When following the assemblage approach described in the Chapters Four, there is a need to think in terms of components. The previous chapter (Chapter Seven) has shown how humans can be considered as part of the rural assemblage. The current chapter continues the discussion and mentions similar topics such as that of family farms but with a larger focus on agricultural land and how people-land relations are built and are subject to changes. Thinking about land as a component has an important contribution to reconsidering resilience in an assemblage approach as it reveals how the rural assemblages are territorialised in space. Visualizing the territorialisation of the assemblage not only means we should be able to point on the map and find those locations where the communities are. Instead, we have to see why and how rural communities actually take place in these exact locations as the result of an assembling process of the material and expressive components. Therefore, the following sections describe how land takes a material form, how certain discourses are built around it (as the notions of how it shall be used) and thus, how relations and networks are established and stabilized or are subject to transformation. It is important to mention at this point that it is not an aim of this thesis to identify how 'resilience' directly appears in policies on land management etc. about land – no further documents were scrutinised beyond those introduced in Chapter Six (the RDP 2014-2020 and the work of Roberts (2014) that overtly refer to the concept of resilience). This research suggests that even those policies that do not speak about resilience directly, may play a part in determining resilience. It is the discourse and the language they use that create an agency that is able to stabilize or transform the community. What is required here is that the discourse created shall be related to other components (such as the land): it has to be considered as the property of a component or shall itself be regarded as components of the rural assemblage.

8.1. Territorialisation and the land

If we intend to understand what territorialisation may mean and approach the community in a rather practical way, it is clear that agricultural communities are linked to spaces that may take different forms and be located in various environments. Lay understanding of the 'territorialisation' of the rural community primarily means those spaces where the housing of those pursuing the agricultural activity and other places of social activities are located. This widely used comprehension of community is based on a physical environment, most often the buildings and the settlement that provide accommodation and where other constituents of local economic activities (storage places, marketplace etc.) and social life (church, offices, pub etc.) are permanently reproduced. The community in a broader sense embraces not only those places involved in production and the reproduction of the labour force, but for instance, also spaces of larger scale decision-making and primary processing of the agricultural produce. Therefore community may be imagined as an extra-regional network of people and spaces including those located outside of the spaces of actual production. These 'beyond production' spaces are also composed as networks of places where nongovernmental or external experts' decisions directly affecting the community are made (such as advisors' and seed companies' premises, offices and halls), where industry-wide forums are held (ministries and government offices), but also those locations where agricultural products change hands (local and wholesale market places). We can also think about venues where festivals and other events celebrating, introducing and representing the community are held (Royal Welsh Show or the Watermelon Festival).

The role of the spaces where land based activities of agricultural production take place is often underestimated and the importance of the sites of production is viewed as evident even in the academic literature. As human actors and their agency are at the forefront when speaking of 'agricultural community', agricultural land is handled as a component that has a passive role and may be harnessed and put into various roles according to the needs of the farmers. Focusing on communities of practice, it has to be kept in mind however, that through changing network connections the community may move away from its original network of localities and is possible to change its core

location or dissolve without any major changes visible in the broader physical environment. At the same time, the fact that this leading role of the agricultural land is considered somewhat 'natural' is that the land often carries very strong material and symbolic coding that make it a very solid component in the assemblage, so solid that what it means and how it can be used is not in question anymore.

'Land' in this respect can become both an indicator of resilience that shows how the community changes in space in descriptive terms, but in a more analytic sense it also explains how components of the community assemblage come together in space. Therefore, in this chapter I investigate how land acts as a component of the rural community assemblage. I assess how land can become assembled as a 'fertile surface' not only for agriculture, but also for the emergence of more complex rural farming communities. I also find an explanation to how the interactions between the components of the land and other actors, such as humans exert an agency that may be considered both a source of power stabilizing the rural communities and as a driver of change marking out possible 'lines of flight'.

8.2. Natural conditions of the land

There seems to be a possibility to describe what land is and how it determines what kind of community may exist on it purely by looking at its natural and physical properties. In its crudest sense land is an assemblage of the soil (made up of mineral, hydrological and biological constituents), the sub-surface materials (such as sediments and bedrocks) and the atmospheric and climatic conditions). These components imply the vegetation of the land surface and the possible agricultural utilization. Both case study communities of this study take place in a unique environment and the natural conditions of the land seem to have had a significant role in their development, although in two markedly different ways.

8.2.1. Nature offering the best conditions for agriculture…

As described in Chapter Five, Medgyesegyháza is located in the south-eastern corner of Hungary on the flat lands of the Hungarian Great Plain, situated at an altitude of 90 meters above sea level. Geologically the area developed in parallel with the evolution of the Carpathian Basin when 20 million years ago two tectonic plates collided and started submergence and descended several kilometres below their original position. Since then, the surface of the area has been gradually covered by several thousand meters of deposits. The surface gained its current face because the river Körös on the north and river Maros on the south (both running westwards), covered the area with the alluvial sediment carried from the Carpathian Mountains. The land in the watermelon producing region is built up of thick sandy material that allowed the
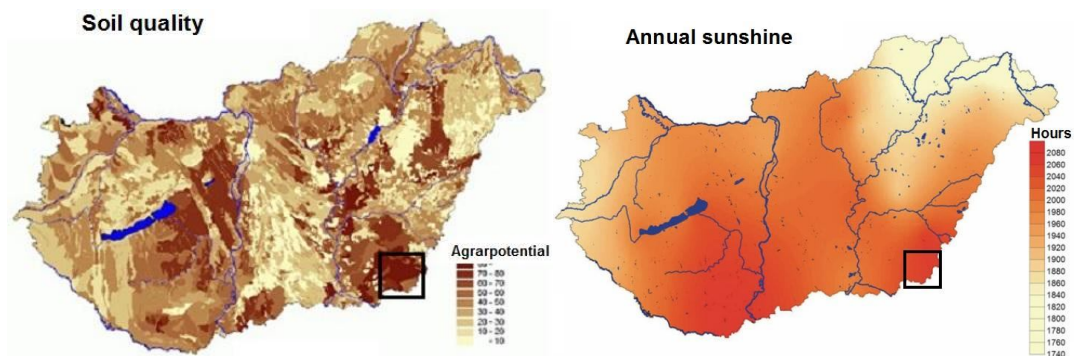
Figure 12

Medgyesegyháza is located in an area of Hungary with the best soil quality and the highest annual sunshine.

Source: http://www.met.hu/eghajlat/magyarorszag_eghajlata/altalanos_eghajlati_ jellemzes/sugarzas/;

http://www.tankonyvtar.hu/hu/tartalom/tamop425/0027_FHT6/ch01s03.html

development of many layers of artesian and underground water and it is covered by fertile humus layer with the most productive soils of the country. Although the prehistoric land was predominantly covered by oak forests, the land use based on extensive sheep and cattle production following the deforestation meant the image of

the area was similar to Asian steppes. At the same time, the annual hours of sunshine is above 2000 hours per annum, allowing very productive agriculture (see Fig. 12.). The bio-geographical features of this semi-deserted land – the so-called "puszta", also part of the Hungarian national heritage – has been preserved in patches, one of which is located 5 kilometres Northeast of Medgyesegyháza as part of the Körös-Maros National Park.

8.2.2. …or the worst conditions for agriculture…

The upland farming community of the Cambrian Mountains developed on the upland plateaus with the same name. Although look-alike mountain ranges establish a continuous north-south spine for Wales making it rather difficult for the traveller to distinguish at a first glance, separate mountain ranges have different names and show unique characteristics. The Cambrian Mountains are considered to be within the stretch from Pumlumon and associated hills in the North, southwards across the Elenydd and the Tregaron upland plateau, and south again to the hills between Llandovery and Lampeter. The Cambrian Mountain range is actually the outcrop of the 400-500 million year old Silurian and Ordovician marine sedimentary rock formations that are actually solidified underwater deposit, so-called turbidities. These materials have undergone partial metamorphosis over time what made them especially resistant to external forces and the hydrothermal activity lasting from 390 to 220 million years ago enriched the area with the mineral veins (lead, zinc, copper and silver). In a geological sense the mountains have gained their current image due to glacial forces of the ice ages. The landscape is unique in Wales – especially compared to Snowdonia or the Brecon Beacons – in the sense that the surface of the mountains range is flat comprising a wide plateau mostly covered by peat soils and peat bogs. The plateau is also the source of many rivers such as the Severn, Wye, Tywi and Teifi that run down in one of the numerous steep-sided glacial valleys dissecting the plateau. The height of the Cambrian mountain range is lower than Snowdonia or the Brecon Beacons since its altitude varies between 300 to 752 meters, although wetlands and peat bogs can be found at lower levels, but equally fertile grasslands may exist above 400 meters. This means that although there is a clearly visible plateau, the borderline of the mountains is not clearly defined. The legal view appearing in rural policies recognizes the upland farming

community vertically following the so-called the moorland line of 400 meters (see Fig. 13.). Although at the moment this does not take into consideration any vegetation or
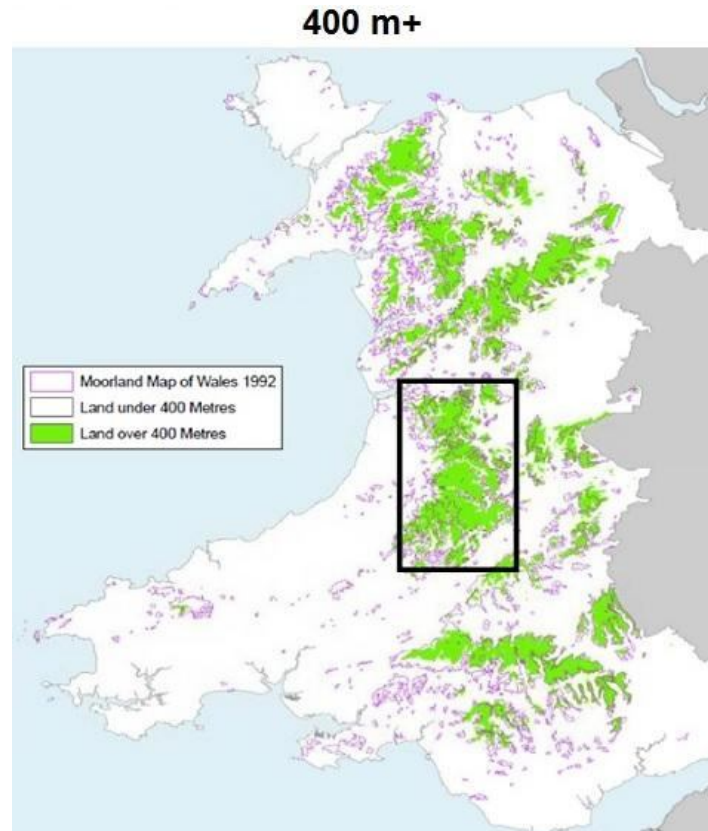
Figure 13
The Cambrian Mountains as a territory above the moorland line of 400 meters.

Source: Welsh Government

social attributes, there are plans to change regulations and consider biogeographical features of the classifying it as upland land when it is:

> *"altitude of 400 metres or above, and has 50% or more of semi-natural upland vegetation, or 50% or more rock outcrops and semi-natural upland vegetation, used primarily for rough grazing. Semi-natural upland vegetation will comprise one or more of the following plant species: Bent, Fescue, Wavy Hair Grass, Blue Moor Grass, Purple Moor Grass, Mat Grass, Bracken, Heather, Bilberry, Crowberry, Gorse, Cotton Grass, Deer Grass, Heath Rush, Bog Mosses."* *(Fairness for the Uplands campaign group).*

Beyond these properties – soil conditions and elevation – that make the Cambrian Mountains a harsh environment for agricultural production already, the area

is characterized by precipitation approximately 200 mm per annum higher and a temperature 2°C degrees colder than the surrounding lowlands.

8.3. 'Land' as an outcome of relations

The descriptive and essentialist view of what the land may be and how it determines its possible uses to humans introduced above does not explain all phenomena surrounding land and its role in community resilience. Although agricultural land has rarely been considered in the frame of assemblage theory explicitly, Tania Murray Li (Li 2007a; 2007b; 2014; 2015) has done extensive work on how land may be assembled from components - in her context to become a resource for investments. The key questions Li addresses are: what the elements assembled are, how the assemblage is stabilised, or made to cohere, why it takes one form, and not another?

As a starting point, for Li the land is not an ontologically sound entity. Instead, actors have different views on what it is, what it is able or ought to do, and how people should interact with it and understand "the right manner of disposing things" (Foucault 1991a, 95) in different ways, not all following a governmental rationality where optimization of health and wealth of populations at large would be the goal. As Li (2014) points out, land in this respect is essentially different from other resources, "such as diamonds, oil or coal" (ibid, 590), in which cases what a resource is and should be made to do does not bring forth the array of debates that land does. In elaborating such peculiarities of land, Li highlights three points that make land a 'strange thing':

> *"First, what land is for a farmer is not the same thing as for a tax collector. Land may be a source of food, a place to work, an alienable commodity or an object of taxation. Its uses and meanings are not stable and can be disputed. Second its materiality, the form of the resource, matters. Land is not like a mat. You cannot roll it up and take it away. It has presence and location. It has an especially rich and diverse array of 'affordances' – uses and values it affords to us, including the capacity to sustain human life. Third, inscription devices – the axe, the spade, the plough, the title deed, the tax register, maps, graphs, satellite images, ancestral graves, mango trees – do more than simply record the presence of land as a resource: they are integral to assembling it as a resource for different actors" (ibid, 589).*

Li's train of thought here leads us to address why land may have so many meanings and uses: it is a rather loose assemblage of materials that not only come together accidentally in different constellations but can be 'made up' (Hacking 1986) as diverse assemblages. The 'resourceness' of land therefore has no essential quality. As she puts it, the very 'resourceness' of land is "not an intrinsic or natural quality. It is an assemblage of materialities, relations, technologies and discourses that have to be pulled together and made to align" (ibid, 589). In an earlier work on forestry community assemblages Li (2007b) gave a detailed account of the possible components of "land". These may include a range of

> *"things (trees, logs, non-timber forest products, tools, documents), socially situated subjects (villagers, labourers, entrepreneurs, officials, activists, aid donors, scientists), objectives (profit, pay, livelihoods, control, property, efficiency, sustainability, conservation) and an array of knowledges, discourses, institutions, laws and regulatory regimes" (ibid, 266)*

that come together and through their relations establish 'land', a new entity with emergent properties. It should be emphasized here that although Li takes into account other possible approaches on how we might think about assemblages (Anderson & McFarlane 2011, Bakker & Bridge 2006, Blomley 2013, Callon 1986), she primarily takes a Foucauldian approach to how land can be understood in assemblage theory: components of the land are put together by people deliberately through a power struggle to reach preferred outcomes [5].

Regarding the materiality of land, Li (2014) identifies two core elements based on her experiences regarding the struggles between tribal lands users and investors of Southeast-Asia. Firstly, although land is excludable and can be partitioned, it cannot be removed and always stays in place. Discussing such partition, Li highlights people who play an especially important role in her context. Due to the long-range nature of land as opposed to wells or mines or settlements, humans are difficult to exclude from it unless particular coercions; physical and forceful (hedges, fences), regulatory (property law) or market mechanisms (pricing, subsidizing) are put in place. Secondly, land can be put to human use in many of ways whether as a

---

[5] Li gave account of her ideas on governmentality more in detail in an earlier work of her (2007a).

"source of food, fuel and fodder; a place to build a house; a home for spirits; a place to protect a forest, harvest water or supply 'environmental services'; ground to mine for minerals; or a source of profit through use or speculation" (Li 2014, 591).

The usefulness of land however depends on exclusion: who occupies the land and owns the right to decide what land use pattern shall be applied?

As visible, land is an assemblage of heterogeneous elements, but it is rather difficult to disengage the material substances from the technologies, discourses and practices that act as the glue holding the assemblage together. Most research considers targeted questions on various topics, recent surveys are concerned with issues of forms of land use and normative assumptions tied to land attachment (e.g. Cheshire et al. 2013), multifunctionality (e.g. Wilson 2008), environmental conservation (e.g. Lobley & Potter 1998, Riley 2011), or ecosystem services on the crossroads of the previous (e.g. Wynne-Jones 2013, Ingram et al. 2013), but also 'beauty' (e.g. Potter & Lobley 1993).

Relations between the components building up what we may consider 'the land' are examined from the perspective of agricultural multifunctionality by Marsden & Sonnio (2008). This project considers it important to think through the paradigms tied to multifunctionality for four reasons. Firstly, although this work does not explicitly apply an assemblage approach, the authors outline three ways in which components of the rural land may be interconnected according to changing discursive elements: the elements that 'acts as a grid for the perception and evaluation of things' (Foucault 1991b, 82). Secondly, Marsden & Sonnio (2008) highlight different ways agricultural diversity may be conceptualized: assemblages of material components may have various meanings when combined with different notions and symbolic characteristics. Thirdly, three approaches to multifunctionality introduced by the authors may also be tied to resilience-thinking in different ways and so help us answer how the community can stick to its original identity while completing new roles and serving new interests at the same time. Finally, looking at the land from such a theoretical lens highlights how a recent turn within rural politics shifted focus. Attention from applying a highly productivist approach shifted to a more territorial approach that regards each piece of

222

agricultural land as assembled together of various materials and expressive components and so fulfilling multiple roles. Interestingly, in this sense multifunctionality itself has become a policy goal and a product of the land.

In the British context, agriculture's multifunctional character has first been recognized in the 1990s when the broader economic crisis of the farming industry coincided with the directly perceived shocks of the BSE and Foot and Mouth disease. This multi-layer crisis of UK agriculture fostered a shift to a more land based, regional and territorial approach rather than the continuation of the traditional sectoral perspective in order to integrate farming into rural development.

Referring to Wilson (2007), however, Marsden and Sonnio (2008) state that 'multifunctional agriculture' is not yet clearly and uniformly conceptualized or understood, instead the peculiarity of the notion lies in the diversity of the ways in which it is understood. In the most general sense the concept of the multifunctionality of agriculture may embrace all goods, products and services created by farming activities. I find the most interesting question surrounding multifunctionality in the politics of the land: which functions are considered as beneficial, for whom the land should provide certain functions, who is to decide the values of the land and how farmers are encouraged to follow certain practices through governance. Marsden and Sonnio (2008) found three competing development paradigms tied to rural UK and Europe that shaped state action and policy development.

Firstly, multifunctional agriculture in its historical context has been understood as "a palliative to the productivist 'cost-price' squeeze" (Marsden & Sonnio 2008, 423), where multifunctional agriculture has been sacrificed and replaced by a productivist monofunctionality. Diversifying agricultural and nonagricultural incomes on the farm household scale actually meant pluriactivity rather than true multifunctionality. This kind of diversification is also the most common resilience strategy of farmers as I experienced, and it embraces the various activities from producing different crops simultaneously, engaging in tourism by providing accommodation, and food processing industries.

Secondly, Marsden and Sonnio (2008) identify a 'beyond diversification' development pathway where multifunctional agriculture becomes a 'spatial regulation

of the consumption countryside' following the downscaling of the policy focus to the land itself. Rural areas have often been perceived as consumption spaces that ought to be exploited within a rather contested post-productivist paradigm. According to this approach agricultural multifunctionality as pluriactivity is substituted by a model based on the many functions the rural land base itself may offer in the frame of the farmland where diversification and multiple value adding processes may happen on the same spot. In more practical terms, this means the exploitation of the countryside by industrial and urban and exurban populations coupled with the decreasing role of agriculture in society urging nature itself to be conceived as a consumption good in terms of its landscape value, often leading to surprising revaluation of natural phenomena (see Gerowitt et al. 2003). Therefore, ecological, social and aesthetic functions of the agricultural land may create resources or develop buffering capacities and add to the farm income beyond the capital generated by agricultural production in its narrow sense. This post-productivist approach to mulifunctionality became institutionalized introduction of the agri-environmental schemes.

Thirdly, a multifunctional agriculture may be part of sustainable rural development according to an emerging paradigm where nature is re-emphasized as a source of food, and agriculture returns as the number one provider of rural economic wellbeing. The novelty of this paradigm compared to the former two is that it assumes a "potential symbolic inter-connectedness between farms and the same locale" (Marsden & Sonnio 2008, 423) instead of being based on an atomistic nature of farms and land belonging to them. Therefore, this approach suggests multifunctionality is a proactive development tool that provides sustainable economies via a reconnection of agricultural production and markets.

Multifunctionality here shall meet three criteria, according to Marsden:

"it must add income and employment opportunities to the agricultural sector, it must contribute to the construction of a new agricultural sector that corresponds to the needs and expectations of the society at large, it must imply a radical redefinition and reconfiguration of rural resources, to varying degrees, in and beyond the farm enterprise." Marsden (2003, 186)

224

This means that by successful bottom-up ecological enterprise initiatives land use may construct a more integrated agricultural sector that in contrast to matching neoliberal corporate interests could meet the civil society's 'real' demands.

8.3.1. Land attachment: human-place relations

The uniqueness of land attachment lies in the fact that it carries a special form of human-land relationship with a combination of material and symbolic components. At the same time this view on land leads to this link being directly related to resilience. Amundsen (2012) for example, referring to Ross et al. (2010), claims that

> *"people in their case communities were strongly linked to their place, people in this village are strongly attached to the village and this is reflected in their commitment to respond to the challenges facing the village" (Amundsen 2012, 46).*

The emergent properties are highlighted by Cheshire et al. (2013) who state that the community is tied together and certain dimensions such as the spatial, the business and the social aspects cannot be decoupled. Their discussion on Low's (1992) typology leads to a reduction to a twofold spatial relationship to place. According to their account (Cheshire et al. 2013, 65) attachment to place may be constructed and articulated from a distance

> *"based on pilgrimage, cosmology or narrative, with adherents infrequently or never visiting the physical place concerned; while place attachment through loss or destruction recalls recent or historic experiences of dispossession and dislocation".*

Contrasting these forms of relationships are "economic and genealogical ties, in contrast, emphasize occupation and presence" and thus direct material or bodily contact. Also, citing Salamon (2003) Cheshire et al. claim farming community has organic coherence because of its residents having "strong ties to the land that defines the place" (Cheshire et al. 2013, 65).

Beyond providing a detailed account of family farms including farmer land relationships in his paper, Gray (1996; 1998) introduces a special aspect of farming community and his work is even more important in my discussion from a theoretical

point of view. This is in the special way Gray tacitly interprets territorialisation and coding, key components of Deleuzean assemblage thinking. In certain cases these roles and places overlap with each other, the family farm (introduced in Chapter Seven) of the Scottish Uplands in his example can be understood as the "empire" (Gray 1998, 347) that is a single location encompassing different roles.

Although Gray does not overtly mention material and expressive components, his language clearly locates these components when he says

> *"the way those working on hill sheep farms organize and carry out their farm work, they establish connections between the productive value of sheep to the farming business and the expressive value of a hill sheep farm to a family" (Gray 1998, 349)*

where sheep have twofold values. Referring to Fernandez (1986), Gray discusses the expressive value of a hill sheep farm to a family beyond providing income via sheep and wool sales.

Furthermore, in his paper on family farming Gray (1998) introduces the term 'consubstantiality' marking a relationship that may help disentangle such complex social-spatial phenomena. According to Gray's understanding, a family farm is

> *"not defined by some morphological attribute/s characteristic of bounded theoretical concepts ... but by a relationship characterize[d] by the term 'consubstantial'. In using this term I am arguing that what is essential to hill sheep farming people is a spatial relation between family and farm, between beings and a place, such that the distinct existence and form of both partake of, or become united in, a common substance. This relation is not created and known through farmers' self-reflexive contemplation or theoretical discourse about their farms. Instead, it is the outcome of their everyday farm work, family relations, and discussions about goings-on in the Valley." (Gray 1998, 345).*

'Family farm' therefore is unique entity carrying emergent properties and its essence is not in the components – farmer, relatives, housing, animals, land – instead it is constructed around the irreducible relationship between them. The role of the relationships between the various components of the assemblage of the family farm is highlighted when Gray describes the essence of the family farm as lying not in

> *"the particular combination of observable or measurable attributes, such as business and managerial control, kinship relations among the principals, family labour, inter-generational transfer and farm residence, but a mode of*

apprehending that reveals and renders these things as 'family-farmlike'". (Gray 1988, 355).

The emergent properties of family farm as an assemblage can be best grasped by his statement:

"family farm is more a way of being-in-the-world than a specific set of people, relations and/or activities whose boundaries can be precisely defined" (Gray 1988, 355).

Another reason why Gray's work is important to this thesis is because he works with the theory of DeLanda (2006). Although not relating to farmer-land relations but farmer-sheep relationships, the way Gray describes the border between human and non-human, farmer and sheep as blurred. Gray ties this to a genetic metaphor. In his example the language the farmers use, sheep and people are treated in a similar way. Gray claims farmers are 'genetically coded' in their identity in a similar way:

"people acquire a range of attributes including their individual personality, the behaviour patterns and attitudes characteristic of a social class and/or region, and the skills, aptitude and temperament for farming. These attributes are said to be 'bred into' a person, that is, acquired and transmitted through genetic processes such that they inhere in and are consubstantial with the person's body" (Gray 1998, 354),

although his words may sound rather essentialist here.

The purpose of the above review is to show that there have been many ways agricultural land has been a subject and target area to rural geography and beyond, and also that a Deleuzean assemblage approach – although has not been overtly applied – is not far from the discussions existing in rural research.

Genealogy of the watermelon farming community shows the current community could not have developed without the agriculture's social material and political conditions constantly being modified. Firstly, there was intense mobility throughout the past centuries and an influx of new settlers in the first half of the 20th century meant that the majority of family farms present in the region do not exist for longer than two or three generations. Secondly, transition countries such as Hungary have undergone wider political development with traceable changes in land attachment. Numerous works have appeared over the course of recent decades (e.g. Kovách 1994, Kovács

2007, Varga 2010) considering the effects of structural changes of land ownership regulations and changes in land-use of post-socialist Eastern Europe and Hungary. The changing regulations on land ownership meant family farms could not develop continuously in the past half a century due to collectivization and restrictions of personal liability (Varga 2010). During the socialist era from 1961 onwards, large scale socialist farming was established, land was taken into cooperative use and cooperative members remained in control of only 1 hectare household plots. These croft lands were cultivated individually or with the help of relatives whilst farmers were entitled to consume or forward the produce to the market.

When watermelon appeared as an agricultural product – replacing peanut production which the whole community has been focusing on in 1983 – watermelon has been exclusively produced by individual farmers on the 1 ha household lots allocated within the socialist cooperatives. It had never been cultivated on collectively cultivated lands due to the fact that it had marginal role in supplying the society as a non-basic food product. Furthermore, it is very labour intense and extremely hectic in its productivity from one year to the other.

Following the regime shift and the reprivatisation of land, collective farms were obliged to offer land during the restitution auctions at similar quality to the land that had been expropriated 40 years ago. Cooperative members could claim land in either one of three locations: where it was originally located; where the member currently lived, and in any of the other villages where the collective farm operated. This lead to private land ownership and stabile land structure although offering lands of new locations to farmers. Watermelon producers therefore are not directly linked to exact spaces, making the community show a low level of territorialisation.

In Wales, however, the farmers reported that their attachment to the land historically emerged, and beyond enjoying working with the livestock and doing their business, farmers are genealogically and emotionally attached to the family farms. During fieldwork, all apart from one farmer I interviewed came from the local community and many of them claimed their ancestors have been farming on the same farm for 7 generations and succession is of key concern. Although the neighbouring farmers are very often relatives at some point, the farms are viewed as private

businesses with control of the individual farmer. According to their accounts, farmers find the upland as the source of income, production of food and a way of contributing to the society the same way they would consider the lowlands. When asking what makes this land different compared to that of the lowlands a respondent from Tal-y-Bont answered:

> *"I would be able to farm on the lowland, yes. But yes, it is more boring. ... The way of life is more beautiful here. It is more difficult... Living with the elements more you know with the wind and the rain... different kinds of elements on the hill than down." (E. L.)*

Elaborating her point she referred to the natural features of the land primarily linked to its geological development: the low productivity of the unimproved soil on the slopes and the peatbogs, the harsh weather conditions caused by the elevation and the difficulties of transportation due to the same reason. As visible, many Welsh farmers seem tied to the mountain as a physical object as well, even though most of the farmers managing hilltop lands do not reside on the upland itself but within the chain of settlements surrounding the mountain range. Representations of the upland farms however remain strongly linked to the moor that has a symbolic role. Good examples for how the imagery of the mountain is used and becomes reproduced are the recent 'royal visits' by Prince Charles organized by the Cambrian Mountains Initiative (CMI). In order to focus more public and governmental attention on the region, the location of Prince Charles's visits and the meeting with farmers and local politicians were deliberately chosen to maintain the mountain image of the farming community. Although most farmers involved in the CMI live on farms near the hillside villages by the bottom of the mountain plateau and commute to their upland farms, the farmers chose these visits to take place in those two farms that represent the wildest mountain environment – in the steep valleys of Cwmystwyth and Llanddewi Brefi.

Another social and juridical outcome of the harsh environment is the low productivity of the unimproved moorland that lead to the historic emergence of the common lands that organize land use and drive social-economic practices even today. A major characteristic of the commons is the lack of fencing, to this day enclosing the common with fence is considered a violation of custom (Rodgers et al. 2011). No

fencing and so lack of hard property lines supports more even grazing as the boundaries between flocks may vary depending on the actual environmental conditions and flock size, and also sheep can move across the commons according to changing circumstances. As Olwig (2013) points out in his discussion on the reification of 'things', the key in understanding the essence of the 'matter' is a complex interaction between the 'doings' of both people and flocks of sheep and other grazing animals. The common lands drive human interactions as well as reproduce social capital: mutual exchange of labour, the 'cyfnewyd' is the practice of common gathering that is still present (Aitchison & Hughes 1988). When asking farmers why they follow the ancient practice of 'cyfnewid' they referred to the need of knowing the very rough land surface and this can only be done through local labour.

Opposed to the Hungarian example, the Cambrian farmers are historically tied to their lands with consequences on how their communities' resilience can be conceptualized.

8.3.2. Changing functions, activities and territories

In Hungary, the fertile plains of the Körös-Maros alluvium in the Souheastern corner of the Great Plain are the home to many food production cultures for centuries. Watermelon is far from the only agricultural product of Medgyesegyháza despite its symbolic role in local agriculture. Cereal, vegetable, fruit and meat production are so characteristic to the wider region as well as the lands surrounding Medgyesegyháza, that when visiting the area for the first time I felt disappointed. Compared to its fame and the expectations I had before my first visit in 2013 only a very few watermelon fields were visible from the main roads leading to the settlement; most lands are covered by wheat and corn and large cattle and pig husbandries. Besides the traditional cereal production, other types of horticulture such as paprika, tomato, cucumber, and onions also have notable tradition. Practically all farmers are engaged in the production of at least some of these crops – if they grow watermelon at all.

Different types of vegetables are traditionally grown in a four-course rotation system on the one hand in order to avoid diseases and on the other hand to grow plants

with different nutrient demands in turns. Also, producing different products leads to diversity and a basic economic resilience on the farm scale

> *"I mostly have crops, on the arable land I have paprika as well, I had a hectare of paprika, I had six hectares of watermelon, then wheat, corn, and there is a bit coming from everything, and should some kind of tragedy happen not all fails... but a lot of people only do watermelon besides their job and that is very risky when all savings are devoted to watermelon and if a sudden change in weather conditions, and it turns cold for a week it is all gone. Maybe it doesn't weaken the plant but yields will be bad." (Sz. M.)*

Before the mid-1980s watermelon was a fruit successfully grown, but only in the 'back yard' scale. At that time another unique product, peanut was the number one product of the region. However, with the introduction of Asian and Middle-Eastern import peanut to the Hungarian market the produce of South-Békés became uncompetitive and farmers switched to watermelon from one year to the other. 1983 is the beginning of the industrial watermelon production era. It is a question however, how resilient watermelon production may remain for a number of reasons. Firstly, according to community members' reports due to the high investment demand of watermelon two successive years with unsuccessful harvest means the farmer will have to switch to different crops - as many have done so in the past years. Secondly, watermelon depletes the soil and if not grafted is not resistant to illness, therefore watermelon cannot be produced on the same plot of land for more than 3-5 years and the crop has to be switched. Thirdly, and more recently farmers complain on the unpredictability of watermelon compared to other products. Corn, for example is said to be a popular alternative to watermelon with its relatively high market price throughout the past years. It requires low preseason financial investment and less care throughout the season. Compared to watermelon one cannot expect or realize especially high income in case of a good season, but being less risky it is becoming popular to pause or terminate watermelon production.

Thus, various agricultural products partly support watermelon production network as they create the alternative for crop rotation and generate income during gap years or in the pre- or post-season plastic house horticulture. They also have the ability to activate agency in the network and dramatically modify its internal relations by

narrowing the watermelon producing class. Nevertheless, when asking farmers about their prospects to switch to other crops if necessary the opinion was not uniform whether they could possibly completely give up watermelon and continue on making a living.

As watermelon requires the best soils and rapidly depletes the soil's nutritional value, it is vulnerable to fungus diseases. It has been an all-time tradition to swap the site of the plantations in constitutive years. When I asked a farmer where he had watermelon and to tell me how this works, he pointed at five different locations on a map (see Fig. 15.). In his case privately owned land was available to run such a crop rotation, other respondents however regard this as a challenge: either they have to activate their social network and rent lands from or together with acquaintances if the available lot is oversized for one farmer.

Figure 14
Annual crop rotation system of watermelon by M. J. of Medgyesegyháza.

The watermelon producing community of South-East Hungary therefore represents a form of land use and view of land where no strict rules apply to how community members consider land as identity-shaping element. Despite the fact that

there are practices that are strongly tied to watermelon production and therefore may be regarded as codes, the territorialisation of the community is loose, basically farmers may start watermelon production anywhere the water, light and temperature conditions they find suitable and no substantive rationales are tied to a piece of land itself. Further, as constantly changing, the land watermelon was produced on became a community wide habit, we might claim the community is 'more resilient' in the way that it is fit to change but at the same it may dissolve much easier. The stronger institutionalization (e.g. pressure groups supporting watermelon producers or the trading system built on watermelon export), development of knowledge hubs (such as the seed suppliers specializing on watermelon in the region) or other identity shaping events (such as the watermelon festival) may strengthen both coding and territorialisation. However, recent years mainly brought material processes of deterritorialisation while the current trend is the development of a stronger community identity.

In Wales, while lamb farming remained the primary use of land, its utilization has been constantly changing in the past centuries. By the 12th century grazing became the principal use, however it became supplemented by mining and water management by reservoirs and afforestation. The coexistence of farming and the presence of lead, zinc, copper and silver mines has been accepted for decades, if not centuries, and closure of heavy industrial activities happened only around the 1930s. With the fading mining industry emerged a new form of exploitation of the land, drastically reshaping the landscape with the construction of the reservoirs. Both the remains of the mining industry and the dams and new water surfaces are now a new function and symbolic elements of the Cambrian Mountains comprising a significant part of the local heritage (see Fig. 14.). Although on a smaller scale, many farmers are investing in alternative energy either through allowing wind farms or micro-hydro schemes on their land. The successful development is surrounded by admiration and pride among the community and farmers are characterized as being 'great businessman'. What remains unchanged is that land is only worth as much as it can be materially exploited. According to Salamon (2003, 182, quoted by Cheshire et al. 2013) this a postagrarian form of land attachment: despite the fact that "a farming community has organic coherence because its residents have strong ties to the land that defines the place" the postagrarian attachment would

view land as a property or an investment. Also, this represents a decoupling of the material components of the assemblage: land is worth value without being continuously brought together with sheep.

Figure 15

Llyn Brianne and the combination of land functions in the Cambrian Mountains: improved farmland in the foreground, water reservoir, timber production and uplands in the background.

Source: Lendvay 2014, private collection.

The view of land being as a sight of natural beauty causes further, more recent tensions. Farmers may identify beauty with economic activity and refer to land as beautiful when intensely grazed and been taken care of (Potter & Lobley 1993). When natural beauty of the landscape is considered from a non-farmer aspect, according to the Cambrian Mountains Society it relates:

> *"primarily to unspoiled, but not necessarily extensive, rural landscapes that are largely free from the effects of disfiguring development or urbanisation. (…) People perceive and appreciate "natural beauty" through all their senses, responding to many different aspects of the landscape, including its distinctive character, its aesthetic qualities, the presence of wildlife, its cultural and historical dimensions and its perceptual qualities such as, for example,*

234

tranquillity, remoteness and a sense of freedom." (Cambrian Mountains Society 2006, 10)

As visible, production does not explicitly appear here, the cultivation and exploitation of the land has a secondary role behind the maintenance of an idyllic landscape. Especially the appearance of wind farms is opposed by this discourse.

The traditional agrarian land use pattern been renegotiated by newly institutionalized discourses. Most recently the introduction of ecosystem services and land as field of natural beauty became concepts contesting conventional land use. A decoding process present since the introduction of the Cambrian Mountains Environmentally Sensitive Area scheme in 1986 and followed by 'Tir Gofal' and 'Tir Mynydd' that supported land use practices of environmental conservation realised that farmers may have a role beyond food production, namely caring for the land, maintaining biodiversity, managing water and carbon storages. Probably the most well-known and radical representative of this discourse is George Monbiot with the promotion of a 'rewilding' of Wales. In recent years this discourse has been materialised in governing the countryside through the Glastir scheme where payment for ecosystem services are not secondary, activities additional to farming but equal to the original food production use of land. With the withdrawal of intense farming activities it is causing tensions concerning the role of farmers (Wynne-Jones 2013, Ingram et al. 2013).

The development of agri-environment schemes has had a considerable impact on agriculture and land management in the Cambrian Mountains. The first such scheme in the area was the Cambrian Mountains ESA which started in 1986. At a similar time the use of Section 15 and Section 16 management agreements under the Wildlife and Countryside Act 1981 became more widespread. Since then, Cambrian Mountains farmers have been able to apply to enter the Tir Gofal, Tir Cynnal and most recently Glastir agri-environment schemes (Joyce 2013).

The first legislation pertaining the farming activities of the Cambrian Mountains was the Hill Farming Act 1946 (Midmore & Moore-Colyer 2005) that set out a general support to farming. Environmental considerations only appeared with the Environmentally Sensitive Area (ESA) regulations. Rogers (2013) describes the

Environmentally Sensitive Area (ESA) agreements as a standard or general contractual model after their kick off in 1986: all participating farms were prescribed to apply standardized and inflexible management practices. The prescriptions were based on the conditions of a type of farming predominant in the area. Such was the Cambrian Mountains ESA that was established with Designation order 1987, SI 1987/226. The more nuanced ESA scheme was introduced only after 1992, when a basic set of obligations were supplemented by optional higher tiers of participation such as assuring public access to farmland or additional environmental obligations.

Terms of management arrangements in the ESAs were specified in the designation orders and by the Secretary of State who arranged the agreements with farmers. Once the farmer agreements were signed they were reviewed every 5 years. The allowances were tied to a maximum rate per hectare but were subject to the importance and difficulty of the implementation of ESA conform modifications when transforming the participants' operating husbandry regimes. Two types of financial support were available, the capital payments and the annual payments. The capital measures such as the "recreation of herb-rich meadows, coppicing of hedges, or other works for the restoration or recreation of wildlife habitats" (Roger 2013, 134) were activities which were incorporated in that capital works plan. Annual payments served for the maintenance of land using traditional farming methods.

The Hill Livestock Compensatory Allowance Scheme (also known as the headage payment system) was based on number of livestock, and operated until the end of 2000. It was succeeded by the Tir Mynydd Scheme which was based on hectares of land in agricultural use as required by European legislation (Wales Assembly Government 2008), the Less Favoured Area (LFA) scheme in Wales. Support for hill farmers in Wales has been operational, in one form or another, since the Hill Farming Act of 1946. In their review of land management activities under Axis 2 the Welsh Assembly Government decided to withdraw support for LFA farmers in Wales in 2008. Payments under Tir Mynydd were differentiated according to whether the land is classified as Severely Disadvantaged Area (SDA) or Disadvantaged Area (DA). Its aim was to contribute to the maintenance of the social fabric of upland rural communities through support for continued agricultural land use, and help preserve the farmed

upland environment by ensuring that land is managed in a sustainable way. Tir Mynydd has been under major criticism, the Ex Post Evaluation of the Rural Development Plan 2000-2006 stated that "environmental actions seem to be predominantly of a cosmetic, landscape type rather than related to environmental management issues such as overgrazing and pollution" (Wales Assembly Government 2008, 84).

Tir Gofal was launched in 1999 and replaced the ESA scheme in Wales. The scheme was meant to integrate all the disparate elements of the previous schemes and it was not restricted to SSSI areas anymore and was open for farmers throughout Wales. Tir Gofal introduced a holistic farm approach offering a set of optional obligations available and appropriate rates of payment. The obligatory farm management schedule target the maintenance of existing habitats while additional land management obligations were focused around habitat restoration and creation. Restoration and establishment of new environmental features in 4 fields (Roger 2013, 137):

> "• *Landscape and historical features (e.g. traditional field boundaries, historic earthworks, stone structures)*
> • *Decreasing intensity of arable and improved land management (keeping unsprayed cereal crops, winter stubbles, undersown spring cereals)*
> • *Grassland restoration (e.g. conversion of improved to semi-improved grassland, attraction of birds such as breeding lapwing and overwintering wildfowl)*
> • *New habitat creation (e.g. woodlands, stream-side corridors, reed beds)."*

In practice the major restriction farmers felt with the introduction of Tir Gofal was the coercions concerning land improvement. An interviewee from Tal-y-bont went into a long description into how the measures cut the land improvement practice done for decades:

> *"When my father took over in 1971, this farm was 220 acres, and then he had the rent on the hill as well. So than he taken the farm over from elderly uncle and aunt so they haven't been farming very well so you know he has been improving the land ploughing the land and reseeding and so on and the increasing the stock and then in 1986 we bought the farm next door which was 142 acres and in 1993 we bought the hill which we own a 1000 acres. 900 acres of rough grazing and 100 acres that has been improved halfway between good pasture and rough grazing. (…)They didn't plough it, what they did was to burn all the vegetation off, and then apply lime and then disc it with a disc harrow just to scratch the surface and then throw seeds and run sheep over it just to harden it down and that's all that's been done to it and then just manage the*

237

grass then you know with grazing and liming and so on… Oh well, now we are not actually allowed to do that! (D. E.)"

Tir Cynnal agri-environment scheme was an entry level scheme introduced in 2006. Run parallel with Tir Gofal, it had similar aims in supporting farmers to protect wildlife habitats and landscape features, but its prescriptions were less demanding than those required under the Tir Gofal scheme. Tir Cynnal's aim was to attract more intensive farmers who previously were unable to meet Tir Gofal entry criteria and was designed to provide a 'stepping stone' for farmers so as to facilitate them in participating in further schemes (Wales Assembly Government 2010).

According to Joyce (2013), currently more than 58.1% of the Cambrian Mountains total area is covered by an agri-environment scheme, meaning a coverage of around 77% of all eligible land (excluding conifer plantations, water bodies, infrastructure). These data underestimate the coverage of agri-environment agreements because they do not include areas with Section 15 management agreements on SSSI or Section 16 management agreements on nature reserves (1,496 hectares on 1/1/2013; data supplied by CCW). Section 15 / 16 data were not included in the analysis because it was not possible to calculate the percentage of this area that is also covered by a Tir Gofal or Glastir agreement. The area under Section 15 and Section 16 agreements has dropped from a peak of 6,235 hectares in 1995 to prevent double-funding issues when land has been entered into other schemes.

A clear objective of all agri-environment schemes in the Cambrian Mountains is to prescribe a grazing level on the semi-natural areas of farms to maintain these habitats in good ecological condition, with additional options available for reverting agriculturally improved areas to semi-natural habitats. While farmers can benefit from these schemes to the extent that payments are based on a calculation of income foregone by undertaking the variety of actions available under each scheme, public benefit is seen through safeguarding and improving semi-natural habitats, landscape and a variety of other ecosystem services (Joyce 2013).

The rethinking of the traditional neoliberal, productivist approach of the upland farmers has been queried by many and the Cambrian Mountains Initiative Officers have also aimed at introducing the farmers to new ways of making use of the land, although it

seems that moving them away from the original farmers' mind-set is rather difficult. An officer of the CMI gave account of how they encountered farmers' willingness to take part in other ways of making use of their land and push them towards activities pointing beyond the current scheme of ecosystem services:

> *"What we tried to do, – and you know there was some reluctance amongst the farm group – was to try and obviously take this group of farmers who we were working with on production side and get them involved in more sort of 'agri-environment', looking at how they might adapt their lamb management practices. And there has been a bit of reluctance to that... you know 'cause the producers want to produce so I say some resistance. Some (…) are thinking more longer term (…) so not just the production side of things but also that climate regulation carbon-water... (…) ecosystem goods and services (…) about the flooding risk downstream to fund mitigation upstream. So that is the trajectory in the production of the environment." (M. V.)*

Despite all the recent changes some argue the financial support system the highly territorialised and coded system of farming will remain the primary occupation:

> *"Upland farming families, many having occupied the same holding for generations, represent the continuation of a system of commodities existing within a framework of meaningful social relationships underpinned by a deeply-embedded mythic tradition, itself arising from the rhythms of the farming world. Farming remains an essential and integral part of life in the hills and uplands despite ever-declining emphasis on commodity payments within the support structure." (Midmore & Moore-Colyer 2005, 13).*

The Welsh upland farming community of the Cambrian Mountains may be considered as a strongly coded and territorialised assemblage that has its origin in the material attributes in the land surface itself. The uniqueness of the agricultural land was what created the symbolic components and robust set of codes of the community.

8.4. Conclusions

Agricultural land is the primary sight of reproduction of rural communities of practice and this research considers it a vital component of the rural assemblage that links people and commodities. Compared to how it has been seen in the previous chapter (Chapter Seven) on humans, more aspects of assemblage theory were deployed

in the current chapter. It is not only the materiality and the connections of components but their arrangements – also spatially as experienced in real life –, the role of coding and the interchangeability of the components within the rural assemblage that have been of key concern in this chapter. These aspects are important properties of both assemblage theory and resilience. Territorialisation shows how the community and the assemblage are structured in space and what the spatial consequences of restructuring can be. Coding is a property of the network ties that arises from expressive attributes and meanings attached to certain components and so gives a qualitative aspect to connections that manifests itself in judgements on what are preferable forms of land use for example. The interchangeability of components shows how components can be detached from the assemblage and in terms of resilience and reveals how the rural assemblage is able to transform, as seen in the example of the community switching from peanuts to watermelon or from lamb grazing to other land use forms. The restricted ways in which components can be replaced and fact that there are limited options for how the assemblage is able to restructure also strongly resonate with the 'lines of flight' concept of Deleuze.

The two case-studies show different examples and stories of territorialisation and role of the land in the assemblage but they support the same knowledge claim. Without aiming to speak the language of geographical determinism, it seems that the natural conditions and material aspects of the land mark how it can be successfully used. In the Welsh case-study there is a strong link between sheep farming and the uplands while in Hungary watermelon production is one of the many cultures that can be 'practiced' successfully on the arable lands surrounding the settlement of Medgyesegyháza. However, it is factors of coding (knowledge, heritage, legislations, beauty etc.) beyond the material aspects that support one or another form of production to be present. An interesting feature of territorialisation is linked to crop rotation and the transferring of lambs to lowlands for winter (hafod a hendre) that means 'fluidity' or a small movement in territorial terms is what secures stability of the overall community and becomes an important aspect of resilience.

Social capital appears in more forms and meanings as well – in relation to the literature reviewed in Chapter Three. It is firstly the bonding or strong social capital that

appears as it has been seen in Chapter Seven that is based on trust and kinship primarily within the family farm. In relation to how the properties of the crop rotation system and the common land manifest themselves in the local social system, it is a bridging social capital that links people via shared land rental and gathering who would possibly not be in connection and would not cooperate otherwise. Linking social capital is also visible in the form of connections – and struggles – between the decision-makers of the government and other administrative bodies' and the local farmers and their representatives as the preferred land-use practices of the earlier do not always match the interests of the latter. More abstract forms of networks emerge when we think of other aspects of the human-land connections and these have an impact on how more classical schools of social capital can be considered. The operation of cooperatives for example not only depend on personal habitus, trust and a personal 'willingness' to cooperate but also by the spatial arrangement of farms and logistic centres and abattoirs.

In summary, the arguments on human-land connections will be further developed in Chapter Nine, but land, in general has a strong stabilizing role simply because 'it is there' and the plants and animals are tied to certain places.

IX. THE AGENCY AND ROLE OF NON-HUMAN OBJECTS IN THE COMMUNITY ASSEMBLAGE

This chapter of the thesis seeks to analyse how certain agricultural products take a role in defining how the resilience of communities is constructed and continues the discussion about humans and land of Chapter Seven and Eight. Following the assemblage approach developed in Chapter Four, my argument is that the communities in question are assembled of heterogeneous elements including material substances, technologies, discourses and practices that build up irreducible social entities with emergent properties. How the community assemblages take form, becomes stabilised and are able to transform or return to previous conditions is highly influenced by the way those objects taking part in the assemblage behave and connect to other components.

The agricultural products not only have a role in the process of building up and stabilising the assemblage, but simultaneously by their nature mark out those "lines of flight" (Deleuze & Guattari 1988) that show in what directions and pathways the community may transform or collapse. Also, beyond setting the course of possible transformation through the agency they exert, these objects are able to lubricate and accelerate adaptation and change or will foster reorganization in the case of a disturbance. Objects, therefore set possible courses of change, indicate change and drive change by fostering or preventing destabilisation.

In recent years, geographers have increasingly attended to non-human living things, but these geographies have concentrated on animals. Ethical considerations on industrial farming, chemical testing and laboratories, environmental pollution, and hunting, are just some issues inducing research and discussion on animal suffering and the loss of natural habitats more generally. From the late 1990s a growing body of work on 'animal geographies' has extended the post-modern interest in 'otherness', drawing on theoretical influences from actor-network theory and post-human theory that treat human and non-human actants agnostically. A network approach can consider animals as nodes, mediators within a network, or even according to actor-network theory take

the role of mediators, intermediaries and non-human actants or tokens that have the ability to generate modifications in the hybrid system affecting other human actors.

In our case – as we will see – surprisingly little difference can be made between animals and plants as non-human actants. Many questions could be relevant for both animals and plants. These include what is proper and normative life, how different people feel attached to certain non-humans, and how living creatures are able to exert power, generate conflicts and mobilise networks of humans and their environment simply by functioning according to their biological properties.

During the analysis, we have to take into consideration two aspects of the objects that are interdependent and cannot be perfectly divided throughout the study, the material and the symbolic role of objects.

9.1. The place of non-humans in a more-than-social assemblage

The behaviour of non-human objects is only partially defined by the very natural, biological properties; it is much more a consequence of how they are built into and interact with other components within a social system that creates together with people and other objects. The stability of the assemblage and those lines of flight or corridors of potential transformation is predominantly a result of the relations objects have with other actors and components.

Agricultural products as material components take a special role creating a very basic territorial definition of the community: with their existence they call for the presence of other actors and carry practices and discourses as well. This territorialisation of the assemblage and the coming together of various components is also what provides the mapping of the physical extension of the community and so determine those geographical places where the community becomes reproduced – as explored in detail in the chapter on land (Chapter 8). With their appearance in new locations, the extension of the community in question may modify. For instance, new components, actors and community members may become involved with the adaptation of technological improvements. This may be an indication of what those places, sites

and moments in time are where and when the assemblage transforms and establishes a new assemblage different from the original.

The objects may be partitioned from the assemblage and analysed on their own as independent entities in order to uncover those properties that have the capacity to create linkages with other components. Further, these agricultural products are living creatures that cannot be separated from the chemical and physical processes and attributes creating them: their course of living, development, size, weight, taste, abilities etc. are properties humans are able to manage, but only to a certain extent. These will remain to be the object of human attention and intervention.

Beyond the physical roles, objects have expressive roles, that are coded as they have meanings, symbolic roles and are tied to values. These codings of the products offers an insight into the threshold limits of the roles they are able to play as part of a rural assemblage (Seymour & Wolch 2010). At this point we have to take into consideration how agricultural products exert an agency by not only coming together with other components, but also by transforming (as biological beings) and thus modify the relations between themselves and other components of the assemblage and so offer new configurations with new emergent properties. It is this connectedness and networked nature of components building up a rural assemblage and the connections provided by the certain material and expressive attributes that Marsden (1998) touched upon as he said

> *"a focus upon network construction and mediation thus begins to provide a way of breaking down the inevitable rigidities in conceiving rural space from its physical composition or its strictly internal definition alone" (ibid, 25).*

Policy-driven works often rest on the idea that resilience of rural communities can be assessed in relation to levels of various stocks of available capital as discussed in Chapter Two and Three. In such research, different sorts of capital are identified such as human, social, produced and natural capital as discussed by Flora et al. (2004) or McIntosh et al. (2008). According to this approach, social capital is often handled as fixed, rigid networks existing in a purely human sphere and can be clearly divided from knowledge and objects for example that people are related to. These different kinds of 'realms' are labeled as separate types of 'capital'. This research however suggests that

networks should include not only people but animals and flora too, as discussed by Murdoch (1997). The following sections are based on the argument that the division of social capital and natural capital and applying a narrow understanding of social capital and that does include aspects of non-humans will not explain how real-life communities operate outside of laboratory conditions. The genealogy of social capital remains unexplained in the case described above and more should be told about what sort of actors, agency, places or events take place when producing and reproducing networks (and so social capital).

Therefore it is vital to see how a wider interpretation of the term 'social' could assign a more useful meaning to social capital. According to the definition and application of Latour quoted in Chapter Four, one should reach back to the original meaning of 'social' and concentrate on associations. Although it is not intended to strictly follow the rules of those theories built on this relational perspective, the approach applied here feeds both from Assemblage theory and to a certain extent, Actor-Network Theory (ANT). Both of these theories work as frameworks for interpretation rather than complete analytical tools, as discussed in Chapter Four. While ANT draws on the idea of relationality, contingency and distributed agency of actors and the boundlessness and ephemerality of actor-networks (Latour 2005, Murdoch 1997), assemblage theory (Deleuze & Guattari 1988, DeLanda 2006, Anderson & McFarlane 2011) is concerned with interacting parts and emergent wholes leading to flat ontologies. These flat ontologies are "made exclusively of unique, singular individuals, differing in spatio-temporal scale but not in ontological status", according to DeLanda's definition (2002, 47). DeLanda's (2006) understanding can be imagined by thinking in terms of three dimensions or 'axes': territorializing, material and expressive roles components take. The material existence of bodies physically shapes the boundaries and the identity of the assemblage by a territorialising process where, according to Anderson & McFarlane "movements as heterogeneous parts come together and come apart" (Anderson & McFarlane 2011, 126). At the same time, the elements have an equally important symbolic role. It is not the material proximity that counts, but the connections between different objects. This notion is visible when Anderson & McFarlane identify assemblage as a "collection of qualities, things and relations" and to

the expressive role of components, the "collection of languages, words and meanings" (ibid). As elaborated in Chapter Five, the analysis of the empirical data follow these principles.

The second premise is that agency may be granted not only to people, groups and their institutions but also to non-human entities. Basically, any research on agricultural communities will tacitly grant some form of agency to non-human components: a forest community for example will not be a forest community without a forest. As discussed by del Mar Delgado-Serrano et al. (2015), the environmental-ecological resilience of forests have an impact on the community and may even provoke a negative effect such as loss of social capital. In her study on a forest community Li (2007) finds that these components may not only be agricultural products but they extend to and include a range of

> *"things (trees, logs, non-timber forest products, tools, documents), socially situated subjects (villagers, labourers, entrepreneurs, officials, activists, aid donors, scientists), objectives (profit, pay, livelihoods, control, property, efficiency, sustainability, conservation) and an array of knowledges, discourses, institutions, laws and regulatory regimes" (Li 2007, 266)*

coming together and creating an entity with emergent properties through their relations.

It is important to understand the complexities and the dynamic nature of these relations, how different definitions relate to one another and in what ways people engage with these components through practices. In addressing these questions, Phillips proposes a relational understanding once again, one "that is enacted among multiple creatures, things, and forces" (Phillips 2014, 150). A widening literature justifies more-than-human approaches that are non-dualistic and non-deterministic in terms of ontologies. Such ideas are embraced for instance by more-than-human (Whatmore, 2002), multinatural (Latour 2004), companion species (Haraway 2008), vital materialist (Bennett 2010) studies. These works open up new avenues in human-non-human relations by refusing human exceptionalism in favour of multiple agents, offering a normative dimension, advocating situated engagements that develop 'responsibility': giving space for the development of attachments, and placing non-human agents as bodies exerting power as they subconsciously distribute and disseminate forces (Phillips 2014). The most 'radical' philosophy surrounding non-humans is that of object-oriented

ontologies (OOO) coined by Harman (2008) and Bryant (2011) who place humans and objects on equal footing and for whom objects exist independently of human perception and are not ontologically exhausted by their relations with humans or other objects. This study does not head towards such detailed ontological discussions but, tied to the topic of the project, focuses on how objects have an agency in determining how rural communities operate.

Nevertheless, thinking through human-non-human relations is indispensable because these are strongly connected to how objects are coded in the assemblage. Regarding literature on resilience and non-humans, Dwiartama & Rosin (2014) make a path-breaking study in their work where they explicitly analyse resilience from the point of view of non-human objects taking part in maintaining adaptability. The fundamental premise of their study is that resilience of agricultural production systems cannot be understood purely by combining the scientific frameworks of Social-ecological Systems and the intentional interventions of humans. Their suggestion instead is that acknowledging the capacity of agents in influencing broader structures and social relations or performing active control over the environment should be extended to non-human objects – their ideas are not based on plant geographies literature and are not developed in details, however. Taking the approach of ANT they argue that any entity has the ability to make itself indispensable to its relationships with others and the network of actors. Referring to Bandura (2001) and Ross & Berkes (2013) they understand agency not as not something confined to individual actions but extended to a form of collective agency that emerges from "... interactive, co-ordinative and synergistic dynamics of their transactions" (Bandura 2001, 75-76, Ross & Berkes 2013, 26) and Bandura (2001) takes this forward to claiming "that individual agency can be enhanced or constrained by others" (Dwiartama & Rosin 2014, 29). This leads them to question whether collective agency stems from the interrelationships between group members. They ask if the relationality between humans and their non-human surroundings would also form the heterogeneous collective agency that could, to a certain extent, even limit and enhance human decisions? Such an active control or agency would not assume a pure intentionality. Following Giddens (1984) and the theory of structuration, they propose dissolving the boundary between structure and

agency: the duality of structure means agents being constrained by structures, but simultaneously they reproduce structures which they are bound by. The paper of Ross & Berkes (2013) however – as that of Dwiartama & Rosin 2014 – does not base its discussion on the wider literature on non-humans and their agency and the authors remain to focus on human agency.

Nevertheless structures such as those present in Social-ecological Systems literature inherently carry information about rules, discourses and resources all of which will take part in generating material and nonmaterial sources of power (Dwiartama & Rosin 2014). Dwiartama and Rosin find that the adaptability of Indonesia's rice agriculture and the New Zealand kiwifruit industry are both manifest by the attributes of the agricultural products although in different ways. With its agency rooted in its fluidity, rice as an object and symbol has the capacity to connect to a wide array of actants. The main property of the kiwifruit is durability on the other hand, and so it has the potential to increase, but also hinder resilience: physical and chemical characteristics of the kiwifruit renders the industry durable and resilient to economic shocks, but high financial investment demand and time until returns of the orchard causes vulnerability and prevents the system from flipping to a more desirable states.

9.2. The agency of non-humans

According to Latour "modern humanists are reductionist because they seek to attribute action to a small number of powers, leaving the rest of the world with nothing but simple mute forces" (1993, 138). The narrow criteria of an agent claims that it "performs, or might perform, two great classes of condition: intentionality and language use" (Callon & Law 1995, 491) clearly confining agency to humans. In identifying new ways of thinking about meaningful agency and the agency of plants, and trees in particular, Jones and Cloke (2002; 2008) identify four streams of social theory as theoretical developments in the replacing of the human as the only source of power and agency.

The first stream of social theory recognising differing forms of agency came with the Haraway (1994), Warren (1994) and Cheney (1994) and their ideas about eco-

feminism. To deploy the eco-feminist philosophy via the deconstruction processes to the totalising and essentialising discourse there was a need for the understanding of nature as "a multidimensional tangle of the political, economic, technical, cultural, mythic and organic" (Haraway 1994, 63). This assumed the existence of natural actors may take different forms.

The second strand identified by Jones & Cloke (2002) embraces the theoretical trajectories of 'social nature' which stems from the ideas developed by radical political economists – Fitzsimmons (1989), Harrison & Burgess (1994), also accepted by Harvey 1996) – claimed that nature has to be (re)produced outside of social relations. They assert that nature and biological forms and processes of life are 'conceptually independent' from human agency. Social nature is an outcome of a specific structure whereby this nature interacts with human social relations in different ways and in different times, eroding the distinction between nature and society.

A third theoretical development comes from socio-anthropology. This approach, represented by writers such as Macnaghten and Urry (1998), Ingold (2000) and Cloke and Jones (2001) goes even further in accepting the place-making role of plants. Their argument is that plants are not a passive recipient of human interventions, instead, abilities and tendencies of the plants shape how they come in interaction with people. Trees for example are considered "not only shaped and controlled by pruning, their natures and capacities have shaped the very possibility and precise process" (Jones & Cloke 2008, 84).

Jones and Cloke (2008) find actor-network theory as the key theoretical strand in understanding nature-society relations. This fourth stream developed in wake of the influential work of Callon (1986) on scallops. Callon treated non-humans as agents through networking nature and humans together. New metaphors emerged "for framing nature as both a real material actor and a socially constructed object" (Demeritt 1994, 183, in Jones & Cloke 2008, 84) like the cyborgs and hybrid partnerships of Haraway (1989; 1991) and Latour (1993). According to Whatmore, this 'hybrid collectif' is what reconfigures agency as it becomes "a relational effect generated by a network of heterogeneous, interacting components whose activity is constituted in the networks of

which they form a part" Whatmore (1999, 28). In theory, ANT would dissolve the binary between social-natural and human-non-human in exerting power and agency.

Jones and Cloke (2008) nevertheless fear that the agency of organisms such as trees may be forgotten even in the ANT framework. They argue that although those accepting ANT were keen to destabilise the anthropocentric views of agency, adherents have often fallen into the trap of thinking about different 'tiers' of agency. We do not have to go further than Callon, Law, Latour or Thrift to find typical examples of this overemphasis of machines, devices and arguably animals. Callon and Law (1995) question "whether computers, robots, or, for that matter, animals, are 'really agents' or not" (ibid, 282), while Latour (1993) aims to establish symmetry between realms of "things – called science and technology – and that of human beings" (ibid, 138) whilst Thrift (1996) claims that intermediaries of the actor networks are "usually considered to be texts, technical artifacts human beings and money" (ibid, 24). The recent surge in 'animal studies' (e.g. Ingold 1995; 1998, Whatmore & Thorne 1998, Wolch & Emel 1998) has become a partial relief as although the borderline between superior and inferior diminished it has only been pushed away and the dichotomy has not been ceased.

To prevent the over-articulation of preconceptions handling technology and animals as an "obvious first step" (Jones & Cloke 2008, 85) Jones and Cloke suggest a move away from considering the human realm as privileged and urge for a disaggregation of the notion of agency. Agency employed or exercised by non-humans may be conceptualised in different forms: plants have skills and/or uses and embedded in a "vast range of cultural, social, technological and economic networks" with humans, moreover, they are visible to the "environment" (ibid, 86).

In more practical terms Jones and Cloke (2002; 2008) propose four ways in which plants have a capacity to exert agency. Firstly, they consider agency as routine action based on a series of events of growing, reproducing, spreading etc. These may be supported by deliberate human actions, nevertheless they overstep the line of a role we could simply consider as 'passive'. Secondly, plants take part in transformative actions with their presence and appearance they transform and make places with ornamental or shading roles for instance. Thirdly, plants complete embedded purposive or intentional

actions as they fulfil the 'plan' coded in their DNA: the "implicit blueprint with instructions for its construction and physiological functioning" (Jones & Cloke 2008, 81). Fourthly, agency may be visible as a non-reflexive action whereby plants deploy creativity and creative potentials by triggering emotions and affect from humans.

Head and colleagues have a slightly different take to plant agencies (e.g. Head 2012, Head & Atchison 2009, Head et al. 2015) but these works tap into the findings of Jones and Cloke (2008) especially in terms of taking the ideas further how plants fulfil a biological role and how this intersects with human purposes and so engender human responses. Head et al. (2015) argue that plants not only have agency but also subjectivity and unless we are able to focus on alternative forms of mobility, communication and the distinctive materialities that establish their difference from other beings our conceptualisation of these features of plants will remain unduly human centred. Although movements, senses and flexibilities expressed by plants are general capacities of all creatures, they have dynamic manifestations of form and relations both with humans and other non-humans. As Head and colleagues highlight, although they often are, humans do not necessarily have to be part of the relations. The relationality is not only about external relations, they may be intra-organism relationality embodied by the processes constituting that organism. The relational capacities may "congeal and solidify in forms of processes that persist over long periods of time" (Head et al. 2015, 402), including those being placed on an evolutionary time scale. At the same time they can also be disrupted, even fall apart and become reconfigured in other arrangements.

In practice, these capacities such as photosynthesis, moving without humans, sensing, entangling with others, communicating or flexibility have embodied themselves in diverse forms. This can be seen in the case of the rubber vine scrutinised by Head et al.:

> *"It takes varied bodily forms, energised by its capacity (and need) to eat the sun. It lives and takes shapes in ways beyond relations with humans – for example, in producing latex that protects from herbivory, enlisting wind and water to aid its dispersal, or creating the branching whips by which it grows, entwines and spreads. Rubber vine moves without humans at scales from the landscape to individual branches; it spreads across zones, pulls people off horses, provides refuge for animals. It senses and responds with various parts of its bodies. The agency of the plant is clear; rubber vine is not passive. The variety of practices*

demonstrated here show that people already engage with rubber vine as a subject" (Head et al. 2015, 409).

Head and colleagues do not understand these capacities or other qualities as being intrinsic, they are themselves relational:

> *"these capacities as including a particular materiality; mobility (without human intervention); sensing and communicating; and taking shape as flexible bodies. To be clear, we do not consider these or any other qualities to be intrinsic; they are themselves relational. Relations can solidify into particular forms and processes and endure over evolutionary and shorter timescales. They can also be disrupted, fall apart and be reconfigured" (Head et al. 2015, 410).*

The agency of plants has been subject of a number of recent works beyond those of Jones and Cloke (2002; 2008) and Head et al. (2015) introduced in the earlier paragraphs. Robbins (2007) for example considers the 'lawn' of the USA as a political and economic network where lawns, chemicals, firms, and people must together require one another, enforcing their mutual positions, characteristics, strategies, and identities. As Robbins takes a Latourian approach to networks, he claims:

> *"in such a network, individuals or organisms do not have free "agency" (will and capacity of their own), but are instead given the capacity or incapacity to act only by virtue of their position in a complex of different elements. In such a model, "power," (…) lies not in the properties of actors but in the relationship established between them" (Robbins 2007, 14).*

In this understanding it is daily interactions that actually dominate people's lives and human behaviors in nature, economy, and community:

> *"It is because the lawn, among myriad other objects of daily life, constitutes who we are. In daily life, this means that personal identity, the way people imagine themselves as members of their families and communities, might be as much a product as a driver of lawn care." (ibid, 15).*

Nealon (2015) has a different take as he critiques biopower and operations of power in its Foucauldian sense and turns our attention from animal studies to 'forgotten' plants as it is only 'animality' that "provides the subtending notion of subjective desire that gives rise to biopower" (ibid, X). Nealon urges us to move away from thinking of life as something possessed by individual organisms and follows the Deleuzean approach developed in 'A Thousand Plateaus' (discussed in Chapter Four) when elaborating his

notion of agency. The papers of Eskridge et al. (2010), Mastnak et al. (2014) and Pearce (2015) highlight the discursive power of language and meanings people attach to plants when thinking about their agency. Eskridge et al. (2010) write about how framing discourses around the kudzu vine in metaphoric terms (such as characterising it as invader or enemy) and making moral claims about the vine gives the plant 'agency' and thus warranted 'a response' to its actions. Mastnak et al. (2014) discuss the context of remaking of relations among humans, plants, and place as emergent ecologies. In their case study native plants are placed in a discourse where the role of human cultivation is neglected when restoring the historic ecosystems what leads to human and plant agencies becoming intertwined as plants are given a role – which they never actually played in the past – by humans. The book of Pearce (2015) on invasive species and a critique of rewilding has a high relevance to resilience. Compared to the earlier two papers the author only tacitly speaks about agency but the materiality (geographical spreading) and coding (the values attached) of plants is more emphasized. In this sense plants have a biological ability to adapt, recover and appear in new places but the environment is constructed by the plants and also the human perceptions, especially whether plants are considered benign or malign.

Just as it was demonstrated in the earlier pages in the case of plants, voluminous literature has been published in the past years on the agency of animals as well. As both of the realms can be categorised as non-humans, many of these works discuss similar theoretical approaches. Therefore, the next sections mention but do not develop those points in details that were discussed and are valid for both plants and animals. Some of this theorization refers once again to Latour and follows the thread of thought Jones (2003; 2006) developed for plants. Nevertheless, the role of animals in society has been acknowledged much earlier as can be illustrated by Philo and Wilbert's words who argued:

> *"Humans are always, and have always been, enmeshed in social relations with animals to the extent that the latter, the animals, are undoubtedly constitutive of human societies in all sorts of ways" (Philo & Wilbert 2000, 2).*

There is an ongoing reconsideration of this role where various species are lined up as part of the narrative that fostered rethinking animal-human relations to rethink

wilderness as "the end of nature as the 'other' in politics" (Latour 2002, 21) and reconsider symbolic roles "on the 'inside'" (Whatmore 2002, 34). Naturally, it is not only individual human-animal relations that count here, as the discourse on relations developed, came a further and more widespread transformation in the relationships themselves. Jones (2003) cited Peterson who commented on these repercussions as "rethinking human nature means not only dethroning humans but also liberating other animals from their passive and mechanistic portrayal by Western rationalism" (Peterson 2001, 223).

Jones (2003), found that ANT has proven a popular and fruitful perspective by which the roles and positions of animals can be studied and in his discussion on animal agency examines how, building on Latour's views, one can successfully theorise various phenomena. ANT has been used in two distinct ways in animal geographies, one approach is on rural issues such as agriculture and hunting by conceptualising detailed networks based on interactions (Lowe et al. 1997, Woods 1998; 2000). Another strand represented by Whatmore (1997) or Fitzsimmons & Goodman (1998) focuses on food production and relations with commodities and thus, tacitly follows a relational approach. Jones (2003; 2006) highlights the role of enrolment in how actants are recruited, join networks, and carry out translation within the network with outcomes. In his example farm animals have a value – mainly commodity production, such as meat or milk production – in relation to humans but not limited to these: dogs control sheep, horses learn to jump and are related to technology, information and science and so are "productive actants who contribute vital affordences to achievements of one kind or another emanating from networks" (Jones 2003, 292). Jones aims to reconsider ANT in three ways, firstly, by claiming that non-human and human entities may be handled equally, Jones refers to this as 'symmetry'. Secondly, thinking in terms of 'extreme relational' view means actants are not only subordinate to the relational connections and "output of the network they may be in, but are actually formed by the relational position they are held in" (ibid, 292). Thirdly, ANT has a focus on technologies and devices, however, animal-technology-human relations are especially interesting (as will be shown in the examples in the following paragraphs and also within the empirical study on grafting on the example of plants and cross-breeding in the example of animals). A

further point Jones (2003), by referring to Ingold and Reed, highlights the intentional actions of animals as he suggests "to regard the animal as a mere tool is to deny its capacity for autonomous movement (Reed 1988)" (Ingold 2000, 307). It is important to keep in mind therefore, that opposed to plants, animals have autonomous agency and generate certain effects intentionally, beyond relations they have in networks. Philo & Wilbert also discuss intentional non-human agency, in the context of the agency of animals, and think through the extent to which we can say that "animals destabilise, transgress or even resist our human orderings" (Philo & Wilbert 2000, 5) "thereby transgressing, perhaps even resisting, the human placements of them" (ibid, 13). These writers not only talk about a capacity to transgress some materially constructed or imagined spatial orderings of the human society but also about their abilities to resist orderings and act in a 'beastly' manner. Aspects not developed in detail by these theorizations concern the agency that is created through specific relations, via imaginations people develop about animals in which cases intentionality of the animal is relatively marginal. The following paragraphs show how animal agency has been examined by writers and how agency may have larger scale impacts on society or aspects of social capital.

Woods (1998) discusses how animals are central both to constructs of rurality and to rural conflicts. In his work, the changing perceptions on hunting and modes of population control is what starts from one-off human-animal relation but leads to a large-scale transformation. As Woods explains this upscaling and extension of rural change via new actors in rural politics due to particular human and non-human configurations:

> *"The politics of rurality and the place of nature within it, extends beyond agriculture and hunting into a whole range of issues including access rights, economic and residential development, road building, conservation, live animal transportation, and modern farming practices. It has consequences not only for the politics of rural areas, but also for the economy, land use, patterns of in-migration and population change, the social life of rural communities, and the way in which people perceive and describe their rural lifestyles" (Woods 1998, 1233).*

Animals of the countryside are powerless on their own but their place in the network, their centrality in rurality is what makes them actants.

Buller (2004) explores the 're-construction' of rurality via the changing relationship and shifting views between humans and 'wild' animals, a transformation that feeds from material reappearance and existence of rare species through migration and husbandry. The physical (re)appearance of animals is not only a result of, but also has symbolic impact on values and as a consequence, on social practices including pastoralism, hunting, wetland and pasture management, and hence, on agricultural production in a broader sense.

Wilkie (2005) examines the sociologically the paradoxical nature of commercial and hobby livestock production from the perspective of how emotional relations complement economic rationality in shaping faming business structures. Wilkie claims that farm workers' attitudes, feelings and behaviours towards livestock is heavily related to the divisions of labour such as breeding, storing and finishing and the socio-economic context of the livestock production. An emotional attachment develops between worker and breeding animals that may be considered more than 'just an animal' as opposed to the emotional detachment that emerges with preparing livestock for slaughter express varying degrees of emotional detachment. Wilkie thus regards livestock atypical and unpredictable market commodity what has wider implications on how to reconnecting farming with markets and the food chain and the countryside in more complex was as suggested by the Curry Report for instance.

Holloway et al. (2014) examine how established ethical relations on dairy farms are unsettled following the introduction of a new milking technology. They find that the relational ethical negotiations reshape human-bovine ethical relationships as the actors involved are re-assembled around a new technology. Views farmers have about animals are based on perceptions including how cows act as 'labor' are in flux and these intertwined with farmers' personal circumstances, will impact on farm 'microgeographies', business structures and market relations. The insertion of a technology has implications on the notion of care, the corporeal relationships between humans and cows, or on knowledges. Farmers, for example,

> *"are expected to care for their cows and demonstrate stockmanship and response-ability in new ways, mediated by the AMS. Cows, in turn, while also subject to discourses of freedom and choice, are expected to care for themselves,*

and to behave in ways that are demanded by and embedded into the design of the AMS (for example, by attending for milking at regular intervals)" (ibid, 197)

what means human actions are also going to change due to renegotiated abilities.

Many points of the discussion of the earlier paragraphs resonate with what has been mentioned in earlier chapters but with more focus on humans or land (see for example the relevance of Cheshire et al. [2013] on sheep-farmer relations). Agency appeared in a similar way much earlier in the thesis as Chapter Two and Chapter Three introduced many forms of agency that appeared in the literature on community resilience and social capital. However, the works of Ross & Berkes (2013) and Dwiartama & Rosin (2014) elaborate certain events or merely mention relational approaches but do not fully unpack the possible role of non-humans in shaping human and non-human relations. The previous sections in this chapter introduced a number of works on plant and animal agencies that unpack how the agency of species are established and how even plants may drive human actions and inter-human relations. Plants live their own lives beyond a certain level of human control and although they draw (and are drawn into) patterns with people. As Hitchings put it, plants are not "often thought about in terms of their capacities and behaviours" (Hitchings 2007, 372) but as they are intertwined with humans in ways beyond human control, they may lead to uneasiness and "awkward encounters" (ibid, 372). Animals may have much more obvious, intentional activity when establishing relations with humans. This research suggests that the agency of plants and animals could be incorporated into discussions on resilience of rural communities and social capital: how communities (of humans) are established, stabilised (through human-plant relations and the following relations between people) and how the communities are able (or are forced) to change may depend on human-plant-animal relations. The following sections deploy assemblage theory introduced in Chapter Four and think through how human-plant relations are shaped in the frames of territorialisation, materiality and coding of watermelon and so how the plant becomes a driver of community resilience.

9.3. What is a watermelon?

Watermelon (*Citrullus lanatus var. lanatus*) is a sprawling vine-like annual plant with long, weak, trailing or climbing stems and large edible fruits closely related to cantaloupe, squash, cucumber and pumpkin. As its name suggests, watermelon fruit is comprised of over 90% of water that contains important nutritional compounds, including sugars, lycopene and cardiovascular health–promoting amino acids, such as citrulline, arginine and glutathione. These make watermelon a highly ranked product among the healthiest foods (Perkins-Veazie et al. 2006). As other cucurbit species, watermelon, in general, has peculiar developmental mechanisms that facilitate an expeditious development of giant pepo fruits. The fruit is built up of a 1-2 cm thick stiff and a smooth rind of various green colours, often with a pattern of dark and light green stripes. Its interior substance is composed of a juicy, sweet, usually pink-red or yellow flesh, and as many as 300-600 pieces of 0,5-2 cm long hard and dark seeds.

Watermelon is believed to originate from the Southern territories of Africa where it grows wild throughout the region and appears in the most diverse forms and genetic variability (Dane & Liu 2006). Evidence shows watermelon has been cultivated in the Nile Valley in the era of the Ancient Egypt from 2000 BC onwards and by the 7th century reached India and appeared in China by the 10th century. The Moors planted watermelon in the Iberian Peninsula in the 10th century from where it spread out in Southern Europe (Maynard et al 2012). The archaeological findings suggest watermelon was present in the area of Hungary by the 11th century, and the Ottoman-Turkish Occupation of the 15-16-17th century supported its spread and cultivation. It is during this time that watermelon was mentioned in writing for the first time in a Hungarian context, in the accounts listing agricultural products paid as tithe rents. Also, János Lippay gave the first detailed description of watermelon production in his book describing the agriculture of Hungary of 1664 (Lippay 2006). The size of watermelon production is indicated by the fact that a peasant was said to transport a thousand pieces of watermelon to Budapest. Since that time, watermelon has been produced both on arable lands and on smallholder's gardens (Nagy 1997).

Hungary lies on the northern borderline of successful watermelon production and this determines how it is being used. In African and Asian countries cultivation is possible all year around, but in Hungary, its biological existence is limited to a few months. Being a tropical plant, watermelon is alien to the natural flora of Hungary and would not be able to spread as a weed on its own and so it is a construct of the human. Without the process of cross breeding, semination, irrigation, weeding and picking the watermelon plant would not be a plant able to produce progenies. The materiality and biological build-up of the plant highly constrain its capacities and how it can be put to work in order to serve the community.

The majority of the watermelon of Medgyesegyháza starts its life in early March when the specific seeds are put in peat pots in one of the few plastic houses based in the community. The nurseries are heated by coal furnaces and extensive water pipe lines to provide the optimal temperature for germination. After a month's time as the seedlings become strong and the outside temperature is warm enough to support growth, the transplants produce fruits around 30 days from pollination and 60 days from transplantation. When moving the transplants to the field, watermelon is put on a plastic mulch with a spacing of 1-2 meters between hills and an in-row spacing of 2-3 meters. By early summer the irrigation network is constructed and the locally bored wells and plastic pipes and trickle irrigation system will become responsible for sufficient moisturising. Pollination occurs by natural pollinators, primarily bees and the wind. Throughout the watermelons development, constant weeding (3-5 times per plant) and hoeing is performed to ensure that the plantation gains enough sunlight and water, because invasive and resistant plant species such as ragweed or amaranth would quickly overgrow the delicate vines and developing fruits.

Development and protection of the plants are accelerated with the application of artificial manure and several chemicals including Potassium, a product responsible for the deep red colour of the fruit. As the watermelon fruits become 3-25 kg in size depending on the type and are ready for picking, the watermelons are carefully selected, signed, cut and collected one by one to be taken off the plantation. Watermelon may have 2-3 fruit sets during their lifetime depending on the weather. In the case of 3 sets, watermelon fruit may be harvested as long as until the end of September. In case the

watermelon season is over by mid-summer, other products e.g. cabbage may take the place of the watermelon. After the watermelon season is over the land surface is cleared of the remaining plastic coverage – mostly by burning – and the remaining plants and fruit not worth picking are disked in the soil. At the end of the year, the land is ploughed and harrowed as the general land preparation process.

Needless to say, watermelon production is highly demanding: there is a considerable investment required in materials such as seeds, irrigation technology, manure, chemicals but also certain machinery are required in order to prepare the land and collect the fruits. Despite these materials and machines watermelon remains highly labour intense, as planting, grafting, transplanting, hoeing and picking but also guarding the plantation is done by the human labour force. Without these investments and human interventions, the watermelon would not survive.

9.3.1. A materially and socially constructed landscape of horticulture

There are different ways watermelon can be produced successfully and methods are basically depending on soil and climatic conditions. Although watermelon is cultivated extensively in the Northeast of Hungary by simply seeds being scattered on the field, traditionally watermelon has been sown outdoors by seeds being planted in 3-5 centimetre deep holes where it would germinate in fine temperatures in the area of Medgyesegyháza. There has been an effort to better govern the cultivation and have a higher degree of human control over the plant. This was done by the subjugation of the watermelon's natural development in order to make it serve the interests of humans. A series of technological developments have been gradually implemented – changes in technologies and methods seem to be constant – in order to smooth away the fluctuation of production and prevent the extreme events (see Fig. 16.). According to the testimony of a farmer following these changes the industry can hardly be compared to what it was two-three decades ago:

> "The changes happened implicitly together with the development of technologies with which we ourselves met naturally. Connected to the watermelon nursery I still remember when you hoe the hole, fill it with mature manure and so on and water it for a while, so this is how advanced the so to say the late technology used to be; we had wells and we used pumps at that time, but drip irrigation

came in later, we used the spray irrigation system and many other kinds. Grafting also appeared as the land of Medgyesegyháza just recently. You must have heard that the watermelon has a property that it isn't lucky to plant the self-rooted watermelon in the same place as in subsequent years as it becomes vulnerable to diseases and this question causes problems in the production". (Sz. J.)

Besides the interests of watermelon producers whose knowledge is based on field expertise as more or less lay knowledge, scientifically driven development of watermelon production has been of academic interest since the 1950s extensively in the

Figure 16
Watermelon grafting as a high labour intense activity.

Source: Lendvay 2014, private collection.

Hungarian literature (e. g. Molnár et al. 1960, Nagy 1997; 2000, Szamosi 2005, Balazs et al. 2011). Simultaneously, with the spread and commercialization of research findings the globalisation of the industry following the post-socialist regime shift has led an

assortment of internationally well-known breeds such as 'Topgun', 'Crimson', 'Tiger', 'Sugar Baby' to replace 'Szigetcsépi F1' breed, that used to be the leading breed of Medgyesegyháza for the previous decades.

The next major development that spread among the community in the mid-1990s was the coverage of the young plantation by plastic tunnels that was 'invented' in order to prevent the late spring frosts from harming the plantation and to provide steady temperature to the soil. With this method, the watermelon is transplanted to the field in the first week of April and the coverage is deployed for three weeks. The result of such a treatment means a more secure yield and the time of picking is 3 weeks earlier than the traditional production. The watermelon trader who claims he invented this technology seemed quite excited about that achievement as he described how the introduction of the plastic tunnels changed the early season market:

> *"We deploy it [the plastic tunnels] in the first week of April, leave it on for three weeks to level the climate. Everyone does it now but at first, we sold it [the watermelon] at a price... you wouldn't believe it, we took it to Siófok resort to the market, the beach was full, the season was on and we sold it for 150 forints per kilogramme!... The people of Medgyes's realised that quickly and first by 5-10 hectares and from the next year onwards all watermelon was produced that way." (Cs. Z.)*

The third main improvement in the production of watermelon is grafting. Whereas in Spain or Italy 95% of the watermelon is produced through grafting, the Hungarian practice only became aware of the developments in the past 10 years. Watermelon producers of Medgyesegyháza constantly complain about industry-wide problems that they claim originate from the fact that still only half of the cultivation runs on grafted plants. Watermelon grafting is based on the idea that certain vine crops are prone to suffer damages of soil-borne diseases and by inserting rootstocks resistant to pathogens such as nematodes the abiotic stress tolerance increases, disease susceptibility is reduced and the advantages of two species may be combined in a resistant plant still able of producing very specific crops. Additional benefits of grafting are increased plant vigour, stronger roots making the plant less vulnerable to droughts and thus increased yields. Out of the many techniques applied worldwide (Hassell et al. 2008), the most common method used in Medgyesegyháza is the 'hole insertion graft' where the

262

rootstock of a squash seedling's true leaf and growing point are removed from the rootstock, a slit is open along one side on the upper portion of the rootstock's stem, where the scion joins the stem and is inserted to the rootstock with a clip. A disadvantage of grafting may be the unripe fruits being especially tasteless or even resembling that of the rootstock's crops.

A farmer gave an account of the conditions she was faced with when testing grafted watermelon and how this experience made her put more financial investment into grafted watermelon transplants she imported from Turkey so as to make sure to they have the right quality:

> *"One year during the times I had non-grafted watermelon and there was one hectare grafted on squash rootstock – 5 hectares of non-grafted, a beautiful stock. And in June there came a cold and wet weather for two weeks and it was so cold that the saprophyte bacteria began to spawn and attacked the watermelon stem and from one day to the other, the leaf of my watermelon withered as if it got scalded because of the rotten roots. That was a devastating scene and I almost got crazy about it, it wouldn't stand up anymore and the fruits were around 3 kilogrammes but snow white so couldn't ripen forcefully, and all softened and got wasted... And the one hectare of grafted watermelon I had, I am not going to say returned the investment, but eased the situation a bit so that I wouldn't have to start next year from zero or minus... Cause the other died as if it got scalded, the leafs tumbled! Unbelievable what can happen, the weather was just like right now: cold and rainy and the fungi living in the soil attacked the roots that it 'went to sleep right' away. I took it to the lab, they established it later, but there was not much we could do cause the cold soil does it all." (Sz. M.)*

According to their accounts, members of the watermelon producing community of Medgyesegyháza attach a role and a meaning to watermelon in very different ways. The basic reason for farming watermelon is for producing a commodity of high financial value. Watermelon has always been the agricultural product of the region with the highest added value and so possibly providing the most profit. So much has it been a product manifesting the wellbeing of the community that members reported a successful season of watermelon production as generating the possibility for new housing development and purchasing new private cars etc. Interestingly, farmers refer to a very significant financial income produced by the watermelon in a surprisingly modest way. The language here is of importance when they claim watermelon was what enabled

families to "make a step forward" as my interviewee Cs. L. put it. This implies watermelon added to normality and support people on the desired course of their lives. Even some of those farmers who clearly made their fortune primarily by producing watermelon when asked to describe why it is beneficial to invest in watermelon, instead of using the term "profit" (Sz. M.) put the phrase "income" and describe the successful watermelon season as "secure subsistence" – such are the financial source of affording annual holidays for the family.

An unexpected encounter happened as I was arranging a meeting at the home of a farmer on the phone. I had no idea what financial conditions I should expect of a watermelon farmer, he was standing in dirty clothes by a shabby lorry in the middle of the watermelon field during the harvest. I was very surprised to hear that his instructions on how I should find his premises ended with "BMW parked outside the building". Upon entering his home it became clear that he belonged to the small number of farmers who consider watermelon as a source of income crucial in sustaining a particular lifestyle, well above the local average. Watermelon nevertheless seems to have a high role for many smallholders' budget even though it remains only as a source of extra income beyond a full-time non-farming occupation.

Although watermelon may be a source of a high profit for farmers, there is a price to pay for the financial success: watermelon has a very high – and always counting – investment demand in input materials and as the production is extremely vulnerable and uncertain and the return of financial investments is always doubtful. A very simple strategy to tackle the vulnerability caused by producing watermelon alone, farmers generally produce watermelon in the frame of a mix of agricultural products, that includes both produce of horticulture such as onions, cucumber, tomatoes, paprika etc. and also produce of arable farming, crops such as wheat, corn, milo among others. By producing a wide array of cereal and fruits and vegetables beyond the very general diversification strategy, those products that bring a yield earlier in the year – such as paprika – will provide the financial basis for planting watermelon.

The dark side of watermelon production has revealed itself affecting the community in a rather crude way every once in a while. A local wisdom describing this situation I heard from many farmers stands as:

264

"You never actually produce watermelon for what it brings. You merely produce it for what you hope it brings." (Cs. Z.)

This describes how production is overtly considered as a 'smooth lottery' in the community. As a manifestation of the reality of this proverb, there are also many tragic stories circulating in the community describing the hopes and failures of farmers in who failed the school of the rules of capitalism. In the mid-90s a handful of farmers ventured too much and in hope of a good profit applied for bank loans in order to secure the high input materials. Eventually, for certain reasons, the watermelon did not bring the yield they were hoping for – the reason could be as little as a few minutes hail before the harvest – wrecking the produce. With no income and the mortgages to be returned some farmers went into bankruptcy and lost their houses, others committed suicide. To indicate the weight of and to dramatize these events some of the farmers who already quit watermelon farming in fear of the occurrence of such situations refer to this as the "watermelon holocaust".

Watermelon can also be regarded as a notion, a mental image, a conception creating bridging ties and thus shaping social capital that manifests itself in different ways (Brough et al. 2006, Christoforou 2012). Firstly, as an intangible concept watermelon takes a unique role in Medgyesegyháza's community life as it is the major source of local identity. For most Hungarian people this small rural town hidden in the corner of an agriculture-dominated region is unknown; the most frequent appearance of the community is by watermelon selling stands installed at summer throughout the country where the label 'medgyesi' – as an abbreviation for medgyesegyházai – is posted both in order to mark the origin and to assign the supposed high quality of the produce. This community identity shaping role of watermelon is also strengthened by and culminates in the annual Watermelon Festival held in Medgyesegyháza which attracts visitors from around the country although it is considered as a festival with mainly local and regional importance.

This identity and the building of a marketing strategy around the culture of watermelon production that commercialises and perhaps further strengthens this identity could not have been developed without individual farmers practising actual watermelon farming from February to October each year for the past three decades. Watermelon is

therefore also a concept on a lower scale as many farmers spent their lifetime producing it and managed to build fortunes in some cases and based the wealth of their wider families thanks to watermelon. When I asked a farmer during an interview what his prospects are for the future, whether he will remain to be a watermelon farmer in the future in case of economic hardship the earlier declarative tone of his voice became emotionally charged as he replied:

> *"I am going to carry on. I love it. This is my life." (D. I.).*

Elaborating this rather emotional confession he described the emergence of a commitment that anyone would develop after pursuing watermelon farming activities for 20-30 years.

In terms of community life, watermelon is different from other agricultural products of the region – e.g. onions or paprika – as it requires repeated presence of a relatively large labour force and people involved have a strong physical connection with both the fruits and each other. The process of picking is especially characteristic in this sense: the plantation is divided into 10-20 meter wide sections by earth roads on which vehicles may approach the plants and during picking the ripe fruits are piled in small heaps by the road for transportation. The fruits weighing often 10-20 kilogrammes are not harvested and carried to the collection points by one person but are picked and thrown by hand one-by-one to the 4-5 people standing in a line. This meant a constant dependence on cooperation, and describing the situation before foreign day-labour appeared, the same farmer said:

> *"…and at that time there was more of a solidarity and togetherness in people, you went over to your neighbour, you came together (…) relatives, the mates, colleagues, neighbours helped each other out". (D. I.)*

This is the basis of my understanding according to which reality there is much more unintentional cooperation going on a daily basis within the community than what the radar of normative, policy related inquiries could sense. The above process of working together developed networks and support, engagement, and the field itself served as a location for community life, learning, or the development of trust besides other less favourable forms of social capital. Interestingly, the size and shape of the

fruits and the periodicity of watermelon ripening requires – biological peculiarities – the same amount of human labour force than before legislations have changed and cheap Romanian migrant workers appeared in the community. As the labour intensity of watermelon cannot be substituted in any ways different social phenomena such as exploitation and oppression emerged with the appearance of a new vulnerable group of people.

9.3.2. Coding and its impact on the agency of the watermelon

The various human-non-human relationships existing between people and the products call for a robust definition of what may actually constitute a biological being to be a 'proper' or 'good' plant. These definitions are influenced by cultural, social, psychological, political and economic factors (Philo & Wilbert 2000) and different creatures are merely conjured up in respondents' minds (Cater 2006). Watermelon is treated as a powerhorse that has no other function apart from producing financial value through its fruit, its physical appearance or possible beauty, its pollinating function, role in the crop rotation are all ignored.

There exists a legal standpoint that provides official coding on what 'defines' a watermelon for example and this separates the fruit from what is not – what shall be considered as agricultural waste instead. According to the Hungarian 82/2004 (V.11.) FVM statutory order on quality requirements watermelon should be:

- intact, healthy with no signs of mould, clean of any external material, pest-proof with no traces of pest damages, lacking any unnatural surface moisture, enduring shipping and handling amongst others
- ripe, and in the centre of the fruit refractometer value is at least 8% Brix
- weighing 1 kg at minimum.

Further, minimal requirements do not accept extremely uneven shape, stains other than the light spot owing to contact with the ground, rupture on the rind or marks of healing or bruise (see Fig. 17.). When asking farmers if they know what 'good watermelon' would exactly refer to according to the regulations the answer is a

confident 'yes'. This would not refer to one being able to list particular fruit attributes mentioned in the regulations, e.g. most of them would be unfamiliar with the refractometer used to measure sugar content grade. The way one can identify the ripe watermelon lies in their local knowledge: the hollow sound watermelon gives when gently slapping the fruit with the blade of a two span long knife and when the stem the fruit is hanging to the main vine is getting dry.

Figure 17

A watermelon produced in Medgyesegyháza I purchased as 'first class' product. As the surface was attacked by rodents it does not actually match the 'minimal criteria' of a quality product.

Source: Lendvay 2015, private collection.

During my fieldwork, it became even more evident that it is not at all unambiguous what 'watermelon is' or at least what good watermelon is. Watermelon is only understandable as a 'fluid' (de Laet & Mol 2000) entity taking many forms with time passing as it is planted as a seedling in the soil until it is sold to consumers or traders. Unless it reaches the market and generates income it is not considered a watermelon although consumption and any action following the payment and beyond the farm gate is of no interest – even if it remains uneaten it did fill its social-economic

role if it brought profit to the farmer and possibly gave employment opportunities to other people from the town and neighbouring villages. This ambiguity in the definition of watermelon became clear to me as I have seen the striking image of the amount of watermelon left on the field following picking – watermelon not matching the requirements of the market and thus left by the track in heaps following the picking.

In certain cases it is Putnam's image of the 'dark side of social capital' (2000) that comes to life in the case physical properties, the purpose and imaginations about the fruit become mixed up and turn incoherent in space and time. The most telling testimony of this situation has been reported by a farmer mourning over why the community cannot act as one. He described the process of watermelon ripening and the following reactions of certain farmers as:

> *"the first watermelon fruits reach their size and weight of picking around June. (…) The season has not yet started but customer demand appears in Germany with the summer, and watermelon has a high price on the market. Now this trader guy 'Menyus' comes (…) every single year and is highly tempted to forward raw fruits to the market. He will always find producers willing to pick and sell their products under quality but at a high price, these fruits will enter the food-chain and eventually appear on the supermarket shelves! (…) Customers desperate for the refreshing fruit will buy the raw watermelon, but only once. (…) Retail dealers and foreign clients turn down future orders and our complete watermelon industry will face hardship because of a handful of producers breaching rules of the community!" (Cs. Gy.)*

This quote was probably the most telling of all when it comes to describing how even a passive watermelon seems to have a definite agency and a more-than-actant role in shaping human actions that are a consequence of the circumstances constellation of actors among which the fruit was placed. To my greatest surprise, another farmer's report on the same event, however, was more descriptive and permissive as he told me about his business relationship with the same trader. According to his account, it is normal that a few raw fruits get mixed with the ripe and people should not take such events so dramatically, 'watermelon remains watermelon'.

This debate on how unripe watermelon shall be considered has wider implications as part of a broader debate that surrounds the erosion of social capital in the community. My respondent elaborated this as:

"There is only one thing I don't understand about that Menyus-syndrome. There is only one thing I don't understand: he is the one to purchase the bad quality watermelon every year?! Cause I guess he signed a contract to transport an X amount of watermelon in the early season. This moment comes but there isn't enough good quality watermelon on the fields, but he does come and pick and takes it wherever it was supposed to be taken – is he going to get his money? Cause if he gets a complaint and they don't pay him, there is a reduction for bad quality, will he be paid? I don't understand! (…) There is one great thing about semi-legal traders, it is true that they take a certain rate from the value produced, they come however to the land and purchases, pays, invoices, then these guys aren't illegal anymore, the problem is with the black trading. But it is an amazing thing, they come and come out to the land, loads the lorry, pays the price, you get the money right away. If you supply the chain, it takes 30 days for you to get your money." (G. M.)

The following sections discuss how similar events are found in case of animals.

9.4. What is a Welsh Mountain Lamb?

In the case of Welsh rurality at a first glance, it would be rather difficult to outline the territory of one specific lamb rearing community because lamb farming is evenly spread throughout the countryside and its distribution does not significantly change between certain locations. It may be a question therefore, according to what criteria one might speak of different communities within the sheep farming society. An answer could be, that instead of just looking at the sheep as a species created and reproduced by people, we have to look at the specific breeds as different types of sheep that are both fixed to certain geographical areas and have an agency in outlining (human) communities of practice.

Risan (2005), in his work on cows and dairy industry asked:

"How do cows, humans, and machines work and live together (…) to make up a collective of nature and culture, of machines and animals? What, in such a setting, is a cow? What is a cow, seen as a semiotic phenomenon, as a material phenomenon, as part of a technoscientific collective, and as agent and object in a distribution of subjectivities and agencies?" (Risan 2005, 787).

When trying to deconstruct the mountain sheep, we may need to translate these questions 'from cow to sheep'. Risan also argues that animal bodies demand certain

kinds of interactions and thus produce certain distributions of subjectivities. He adds that the boundary of 'animality' is not a purely 'cultural' distinction, and cannot be deconstructed as such.

Wilkie, at the same time follows farm animals from birth to slaughter (Wilkie 2010) and analyses how non-humans fulfil varying roles not only spatially but also temporally. Fulfilling their life cycle they have to match different roles through human-animal relationships and are attached to changing meanings throughout their lives. In the following chapters I discuss how the Welsh Mountain Lamb plays a role in human communities as it is constructed by people.

9.4.1. The sheep-mountain-human relations

Philo & Wilbert (2000) document the varying concentration of different sheep breeds in the United Kingdom as they recorded that 75 % of Costwold Sheep, 60% of Dorset Down Sheep, 56% of Greyfaced Dartmoor Sheep and 48% of Wiltshire Horn Sheep were found in the South of England and higher than average rates of ownership in Wales of Hill Radnor, Llanwenog and the Welsh Mountain Sheep. The geographical distribution of the Welsh Mountain breed is concentrated in the mountainous areas of the Welsh counties of Meirioned, Ceredigion, Carmarthenshire, Denbingshire, while the surrounding areas would be Texel, Beltex, Lleyn, Cheviot etc.

The Welsh mountain sheep is a hardy sheep breed that adapted to the Welsh upland environment: steep valleys and harsh climatic conditions (see Fig. 18.). The breed is most recognisable by its hairy-woollen, relatively small sized body with strong hind legs that developed from the need to move around a mountainous terrain.

"Some people don't realise you know when it's snowing like that how hard it is on a farm like this. But you got to know what you are doing when the snow is coming there is no point of me bringing all the sheep off the hill and putting them down the field below. All you do is open all the gates, the sheep know where to go, they will find the shelter. ... The sheep will come affront the storm to find the shelter... we lost 30 sheep on the hill, young sheep... We didn't go out from here for 17 days. You know the lane you walked up you couldn't see the fences each side. Cause there was nothing there all covered with snow. Up to the windows. Until April." (W. D., referring to winter of 2013)

"I don't think other breeds would survive. When sheep get bigger they don't survive so well. I know farms that have gone for bigger rams. The flock is still hefted but because the sheep has become too big It doesn't survive in the environment that it's expected to, that's purely because of the size." (D. N.)

Figure 18
Welsh Mountain lamb in the Elan Valley.
Source: Lendvay 2014, private collection.

The economically beneficial production of the Welsh Mountain lamb requires attention and action of the farmer throughout the year. As the farming year of the Cambrian Mountains begins, the livestock are usually put on lowlands as the mountains are covered by snow during the winter and environmental schemes would not allow sheep to roam on the mountain at this time of the year. While the sheep are placed on the more fertile pastures the ewes are also fed with hay, sugar beet or mineral blocks. At this time of the year farm maintenance is undertaken with special regards to fencing and hedging: new hedges are planted and existing ones are laid in order to create shelter for the lambs. Approaching the end of winter farmers scan the ewes in order to establish the

number of lambs they may expect. Simultaneously with the reduction of the number of ewes grazing of the past years, the fertility has risen due to more advanced body condition and most ewes have twin lambs. Farmers allocate ewes between better and rougher pastures: those carrying twins or triplets are moved to the best land surfaces. When left on the hill the quality of grazing may not be sufficient for the ewes to raise healthy lambs. Besides the pasture quality, another benefit of the improved lowland field is the relative safety from predators threatening the young lambs.

As the cold days of winter are over, lambing begins around March on the sea level. Lambing continues further inland and moves gradually up to the hills and the upland farms where it is relatively considerably colder compared to the seaside. Despite the fact that the Welsh Mountain breed is easy with lambing, it makes a good mother and so little human assistance is required during lambing itself, March is the busiest time of the year for the farmers as lambs have to be caught and marked and all weak or ill lambs and ewes are moved to the shed and require constant monitoring. Those lambs orphaned, but also many of the twins, are adopted onto ewes that lost their lambs for some reason. The year old ewe lambs that serve as the future breeding stock are the first to be moved on the hills to maintain their land attachment and exploit the full growth potential. As the lambs become strong enough they are marked with individual ear tags before being moved to the hill with their mothers. In case the farmer chose to leave the ewes to roam freely over the winter their lambs are gathered to the farm to be marked. In the height of summer, the ewes are gathered off the hill for shearing making July a busy month for farmers, shearing gangs and dogs as well. Although it may take only 2-3 days for one farmer to have the sheep sheared, the gathering is a rather difficult process on the open pastures, therefore, neighbouring farmers help each other out in this process making the shearing time last for many days. In the meantime, the lowland fields were left empty to recuperate and to provide hay for the next winter. Shortly after shearing comes the silaging time when the hay is bundled and stored as fodder for the winter. In the following weeks whether lambs are taken off the mountain to lowlands for finishing and are matured on the best pastures to develop the best flavour. Old ewes are also sold to lowland farms or on the markets as cull ewes. In the autumn as cross breeding is

planned, the best rams are taken to ram sales. In late October ewe lambs kept for breeding are gathered in a final gathering of the year and are sent to lowland farms.

9.4.2. Coding and its impact on the agency of the Welsh Mountain Lamb

The main qualities and advantages of the Welsh Mountain Sheep for Welsh farmers have not changed in the past decades. Its main features are that they are economical to purchase and maintain, they are good mountain browsers. Due to its exceptional hardness, the Welsh Mountain breed is the only breed able to thrive in its native environment characterised by very harsh conditions where no other sheep would survive. The most important peculiarity of the breed lies in its size. The usual deadweight is 10-12 kilogrammes, but pure-bred Welsh Mountain lambs do not generally weigh over 16 kilograms. Larger labs may be produced when crossed with other breeds (Suffolk, Texel, Charollias etc.) in which case the body weight may reach 19 kilogrammes.

The breed's lambing qualities are outstanding as they have easy lambing: lambs are born with a decent cover of wool supporting survival chances from the first day, ewes make caring mothers protective with their offspring. Lambs are active and can feed on their mothers' milk with no extra intake needed. The average percentage of lambing in its natural environment – on the mountain – is expected to be up to a 130%. When kept in more favourable conditions on more abundant lowland pastures the ewes' lambing rate may rise to 180%. An advantage of the Welsh Mountain Sheep is its long life expectancy and its mature age fertility, mountain sheep of five years old and more may be still producing twins with high live weights.

The sheep do not require much of a help and this has an impact on who is using the hill and who takes part in maintaining the community.

> *"it is very unusual that we'd have a problem severe enough with the sheep because it is a small hill type of ewe, and first of all, we don't get many lamb problems with them anyway. The breed evolved through time, to lamb their selves basically because they for most of the time lamb on the hill on their own so it tends to... we don't get many problems. With the cattle I guess more problems, well, not more problems, but you get the vet out more often just to do different things and then I guess we kind of ask advice for that really. (J. R.)*

The reason for using special breeds is beyond a deliberate decision to strengthen local identity and is much more based on a blend of economic rationality and natural geographical determinism. As opposed to the phenomena put by Yarwood and Evans where

> *"many rare breed centres keep animals which appeal to the public more through their long horns, shaggy coats, unusual size or curious markings than their historic connection with locality" (Yarwood & Evans 2000, 105)*

the Welsh Mountain sheep was not meant to directly emerge as such a distinctive symbol as with its proportional body, neutral colour and physical appearance embodies the 'average sheep' and is much more kept in order to maximize financial profits. Those Welsh farmers seeking to maintain a tradition by reproducing rare breeds such as the Llanwenog would still insist on sticking to profitability as one of them claims:

> *"we kept it because it is more of a tradition really, but if they didn't pay their weight I guess I wouldn't keep them…". (G. L.)*

The report of a lowland farmer who recently introduced Welsh Mountain sheep on his farm clearly reveals the reasons why the breed may slowly dissolve as being tied to its natural grazing environment:

> *"I don't think we could keep 500 texels on the farm, we wouldn't have enough food, in the sheds to lamb them all but with an element of Welsh we can lamb outside means you don't have to keep them in and you don't have to buy a new shed." (G. L.)*

At the same time, Welsh Mountain breed ewes are used for cross breeding on the lowland farms. The reason is it is small, cheap to keep, but still produces large lambs when cross-bred. According to the Welsh Mountain Sheep Society the excellent qualities of the Welsh Mountain Sheep can be of further advantage when crossed with other breeds of ram such as the Blue-Faced Leicester ram to produce the Welsh Mule, or with the Border Leicester ram to produce the Welsh Half-Bred. The resultant ewes, in turn, possess those qualities that make the Welsh Mountain Sheep good mothers – being milky, lean, hardy and long-lived (www.welshmountainsheep.co.uk). Due to constant cross-breeding practices carried out by farmers, the mountain breed itself is subject to

constant development. A farmer especially interested in developing the breed described the process and the outcome as:

> *"The breed has changed... the breed has definitely changed from when I was a child there is no doubt about it... I would say that possibly the taste has stayed the same, the looks, confirmation [the shape of the body, the muscles, the bone structure, correct layer of fat on it....] , size. I suppose size more than anything but as a breed, they want a sheep that is nice to look at as well. You try to get them quite wide on the shoulders, thick back side and increase the body size for more meat I suppose.... I never will, never will reach the perfect, I always try to... breeding isn't an exact science. You can have the best sheep to look at, the best ram and that doesn't mean you will have the perfect lamb. You are always trying, changing, I don't think you will ever the perfect." (D. N.)*

The development of the breed targets the physical alteration to the breed to fit both natural conditions, lambing practices and the consumer demand:

> *"It [the mountain lamb] is quite compact, but the breed is getting bigger cause a lot of people try to make a bigger breed and the rams sold are getting better a lot of farmers are now having to feed it over the winter. Personally, I don't totally agree with that, it should be a small sheep that does survive without having to be fed over the winter. It is a hardy type and that's how it should be. But farming is what it is farming is everyone is trying to make a profit and trying to produce a bigger lamb to increase the profit." (D. N.)*

Nevertheless, cross-breeding shows how sticking to one kind of breed does not mean that the animal shall look the same as it did decades earlier. The development and alteration of the lamb however, may mean a slight change that may have significant impacts on the community or agricultural industry scale.

Beyond its physical attributes, the Welsh mountain sheep is different from lowland breeds because of intangible peculiarities, namely its knowledge of the local land and its behaviour based on this information. These developed due to one of the most unique practices applied in British upland farming, hefting. Described by a farmer, the practice is based on the territorial attachment and seasonal movements of the animals:

> *"I will go up [in the spring], I take the sheep up the mountain, I'll drop them by the gate to the mountain, it's a big mountain, but I'll go a week later just to see if they settled in and they will have gone to the area that I expected. I don't know what it is because I suppose the sheep that go there take the lamb with them, that's the area they know!... a part of the mountain... there are three valleys*

there, one is one side, the other farmer is on the other side and for some reason, my sheep are in between all the time, I don't know why but its.. the mother takes the lamb there and it is just inbred into the sheep. You would have the few that would stray over but its inbred into the sheep." (D. N.)

Hefting has been highlighted as a main distinctiveness of upland farming by many, including Lawrence & Wood-Gush (1998), Hart (2004), Burton et al. (2006) or Olwig (2013). Although the behaviour developed through hefting is not an exclusive attribute to the Welsh mountain sheep as a breed, there is a notable overlap between hefted and Welsh mountain sheep simply because flocks grazing the uplands are almost exclusively hefted and at the same time belong to the Welsh mountain breed. The hefting system has also been attributed with spreading the sheep relatively evenly over the common, and so ensuring agricultural efficiency as well as preventing the sheep from congregating in any one area and causing damage to sensitive wildlife habitats (Johnston 2002).

Hefting developed through centuries by sheep being kept in an unfenced piece of land by constant shepherding. As a widely practised system of sheep management, hefting is assumed to have developed in the 17th Century by Celtic communities of Wales (Hart 2004) and is referred to as 'cynefin' in Welsh. The practice is defined as a traditional method of communal grazing and managing flocks of sheep on large areas of common land. The animals' knowledge of the land and the attachment to the exact area become a learned behaviour that was passed from ewe to lamb over succeeding generations. During hefting a life long knowledge of where optimal grazing and shelter can be found throughout the year becomes instilled into the young animals as they graze with their mothers on the "heaf" belonging to their farm (ADAS 2008).

Hefting is believed to have many impacts on sheep – although most of the literature on the topic is descriptive with little scientifically proven underpinnings and therefore much of the information on hefting can much more be considered as a local knowledge than proven facts. Macintyre (2007) described hefted sheep as having an "inbuilt inbred knowledge of where they come from after countless generations on the same land" (ADAS 2008, 3). This knowledge involves knowledge on natural mineral and salt occurrences, types of medicinal herbs or the hefted flock knowing the potentials

of different parts of the land surface in offering protection to snow depending on the direction of the wind. Macintyre goes on to describe hefted sheep acquiring the mental map of the territory 'with their mother's milk'. At the same time, he believes sheep should be viewed as inseparable from both the grazing territory and the farmers caring for them. Goddard (2008) went even further when she used the same metaphor to hill farmers who she describes as

> *"a knowing and wise breed. A breed apart and a rare breed themselves; they are involved in the land, which in turn is in their blood" (cited by ADAS 2008, 3).*

ADAS (2008), referring to McConnachie (2008) also claim that hefted flocks can also

> *"develop resistance to particular parasites in the area and become adapted to tolerate with mineral imbalances in the poorer soil. They also know where to find shelter and where to cross streams. On difficult, extensive terrain, it could take years to successfully heft a replacement flock and, because knowledge of factors such as shelter, natural hazards and optimal seasonal grazings would take time to acquire, animal losses in the first few years could be substantial" ADAS 2008, 2).*

and therefore means a connection with not only space, but physical elements, movements, and turbulence.

As a consequence of the agency exerted by sheep through the grazing practices described above, there are certain sources of power that are transferred to the animals and beyond human control. Although diseases such as the foot and mouth disease are rare and the UK-wide outbreak of 2001 had little impact on upland farming of the Cambrian compared to that of Cumbria (Lowe et al. 2001) in Powys county there were traces of the disease that caused disturbances throughout Ceredigion and wider Wales.

> Such a disease means complete culling of the stocks and

> *"with the cull of their stock households lost not only the animals but also the legacy of accumulated breeding acumen of previous generations. In a way, the family biography, lived out through the stock, was brought to an end" (Bennett et al. 2002, 95)*

in those places it has been completed. Restocking usually takes 3-4 years, however farmers do perform major changes in the stocking level: the number of dairy cows could increase to some extent, beef and sheep herd sizes, however, shrink significantly

causing lower stocking densities. Culling may affect both lowland and hill farms, but despite the fact that generally all lowland grazing farmers aim at restocking to the previous level, only half of the lowland farmers return to previous numbers (Bennett et al. 2002). Farmers managing hefted flocks have to expect an intensive shepherding period while re-establishing with slowly adding replacement stocks year by year.

A special problem here is around the knowledge of the sheep and place attachment and this may have serious impacts on a lower scale even if no culling has taken place. A Ceredigion farmer I asked claimed he has not been affected by the 2001 foot and mouth disease directly. He reported he was unable to return the lambs to the usual mountain in the springtime because of the road blockade set up by the authorities Machynlleth. He recalled that he had transported his lambs to South Gwynedd and lost 15% of his stock, but not due to the illness itself:

> *"I lost 3 sheep on Cadair Idris by my brother. Being a hefted flock, they didn't know where to go, cause they didn't know where to move. They just didn't turn up anymore." (D. N.)*

This highlights how the capacities of the sheep set off a chain of events: capacities would make the sheep not vulnerable to conditions present on the open pastures and this would make shepherding unnecessary, creating a unique structure of the community but at the same time, the whole assemblage is highly dependent on the knowledge of the sheep.

9.5. Conclusions

This chapter aimed to mobilize plant and animal geographies literature into a post-human direction as it followed the thread of thought and completed the argument that I started to develop in Chapter Seven and Chapter Eight. In practice, this chapter explored how different agricultural products or commodities as non-human objects take territorial, material and expressive roles in the assemblage and affect the formation of networks and aspects of social capital. This chapter argued that by relations non-humans build with other entities, they are able to take a part in triggering agency in establishing and modifying networks. In certain cases, objects may provide a very strong coding to

the agricultural community, create bridging and bonding ties (as introduced in Chapter Three) and attract the local social system to remain in certain stable states. Objects are at the same time constantly changing, developing in various ways – both individually, on an annual basis and by being transformed as species by humans over longer time. Some non-humans – animals that is – have intentional actions but their agency however lies not in single movements and transformations they perform themselves, but much more in how they come together with other components, especially the land and the humans. What is more, non-human objects may be considered drivers and indicators of resilience as they absorb some stresses and pressures – both on a short term and a long term scale – and so stabilise the assemblage by adjusting to severe weather conditions or developing productivity and so adjusting to consumer demands, for instance. By these properties and roles they play in the assemblage, objects drive human actions, and determine how and why people come together: objects are an essential component in the relationship between community resilience and social capital.

It is at this point that the connection between community resilience, social capital and assemblages crystallizes. The community imagined as an assemblage will not only include humans (faming families, day-labourers, traders, farm experts etc.) but the non-humans as well. The networks of humans shaping forms of social capital are 'anchored' and to a certain extent, are affected by the relations of humans and non-humans. Although some networks may seem to be stabilized by farming practices, they are able to transform in more or less calculable ways, components may change or be replaced for example, and this idea of assemblages can be captured by the Deleuzean concept of the 'lines of flight'. Naturally, such rearrangements can have an effect on how the local community is structured, how certain aspects of social capital manifest themselves. The intensification of agriculture may require more labour which can reshape original bonding and especially bridging structures and strengthen inclusion and exclusion perhaps. The changes in properties of animals may also have an impact on the human sphere, and change how people form groups.

Thinking in terms of assemblages also adds to our understanding of the resilience of communities and its relation to social capital as it reveals some more unexpected arrangements and contingencies. The human-object relation is not secure in

the case of the watermelon – and especially as shown in the story when unripe watermelon was sold –, and such relatively marginal connections may emerge in a very short period of time that lead to the complete collapse of the existing network of humans and non-humans and the components of the assemblage to rearrange. In such a case it is also the 'dark side of social capital' and the infringement of the rules of the community we may apply. Other ideas related to classical schools of social capital such as Bourdieu's habitus or cultural background, personal life histories, experiences and other social dispositions may also add to our understanding of the events but they cannot fully explain why these social ties form and change the network. It is a network approach to social capital and taking into account human and non-human relations such as materiality and the people's expectation tied to the watermelon that play an important role in triggering such actions. In this case, focusing on approaches to resilience – we can also think of shocks being driven internally by the community members themselves. In terms of relationship between the concept of resilience and the assemblage it is a 'lubrication' that appears in the assemblage: there are certain 'surfaces' of relations that are more prone to become a driver of change and rearrangement of the components than others.

X. CONCLUSIONS

The overarching aim of this thesis was to contribute to scholarship on resilience, and community studies in general, by developing a more relational approach to rural community resilience that engages with assemblage theory to extend the scope of conventional analyses. In this quest relational approaches applied within community studies and social capital literature have been extended by assemblage theory of Delezue and Guattari and its interpretation by DeLanda. The analytical framework deployed served as the link to think through how community assemblages are subject to changes in their networks of relations. This thesis also asked how resilience can be conceptualized and how resilience may be considered as an implicit property of rural communities performed through daily practices of farming.

The main contribution of this research is that the concept of rural community resilience has been explored and placed in relation to other important concepts of human geography such as community, social capital, assemblages and agency. While it was found that ideas discussed within community studies and the literature on social capital can explain how network ties establish communities to some extent, this project has gone further by looking at how social relations can be supplemented in the practice of community with non-human agency and more-than-social relations.

The approach has been developed through the course of the thesis. In Chapter Two, the concepts of resilience and community resilience were introduced, defined and critiqued as they appear in the academic and policy oriented literature. This literature advised that there are very different approaches to community resilience and in general they are based on normative assumptions. Resilience is maintained by coping strategies that mobilise social relations and so social capital was found as a key factor of resilience. Chapter Three placed the current research within community studies and defined how communities are understood in this project. As community studies have implicitly been engaged with social relations and the literature on resilience also suggested social relations to be an important concept, the third chapter revisited various

approaches to social capital. In doing so, it explained why this thesis goes further and looks beyond social relations, and why it considers non-humans to be important within social relations within an assemblage approach. Chapter Four gave a detailed account to assemblage theory, a relational approach that serves as a conceptual link between resilience, community and social capital and thus, could support my claims on network formations and agency. Chapter Five introduced the data collection methods and the two case-studies that aimed to illustrate the connections between different concepts. This means that although this work mentioned some, it did not devote especial attention to analysing policies and management techniques and it was not an aim of this study to find solutions to specific problems of the communities scrutinised. The first empirical chapter, Chapter Six provided a situational analysis for the case-studies and demonstrated how this thesis acknowledges readings of resilience based on active social agency of humans in practice, but why it finds it useful to think through how resilience is performed non-intentionally through human-non-human relations reproduced in daily practices. Chapter Seven, Eight and Nine gradually built up the assemblage and introduced how humans, the land and the agricultural commodities can be considered in an assemblage approach, how they are tied to each other through relations and how these more-than-social relations manifest themselves in shaping social relations, social capital and community resilience. Chapter Seven was a transition chapter that extended human relations, Chapter Eight discussed territorialisation and reterritorialization processes and while Chapter Nine has shown how non-human agency supports the more-than-social relations.

In this final Conclusions chapter my main aim is to answer the research questions set out at the beginning of this thesis. As part of this discussion, I first revisit and reconnect the main concepts applied in this thesis and recap the main findings of the earlier chapters. I also indicate the most novel findings and contributions of the study to the literature and wider academic debates. I then discuss the answers given to individual research questions. In the end of this chapter, I highlight the fields of inquiry that emerged during the work and that could form the focus for further investigation. Finally, I include a brief summary of recommendations derived from the findings.

9.1. Rethinking the connections between resilience, community studies and social capital

Resilience is an important and popular concept as it denotes the potential of various subjects to endure and carry on functioning in a world characterized by uncertainty. Compared to the concept of sustainability that has a meaning close to that of resilience, the former is more tangible, as it is able to focus on processes on the short term and consider questions that require rapid answers.

The research outlined within this thesis differs from previous works as it attempts to treat resilience as a concept primarily with an analytical value. By thinking in terms of resilience without a direct political imperative, we shall be able to understand why and how communities are able to bounce back and remain stable in certain ways but at the same time to transform in other directions. By doing so, we shall also understand what the features of and processes within communities are that support the maintenance of function and identity, and what are those processes that support irreversible processes of change (the constant variable to which we compare whether transformation has happened is the function, structure and identity of the farming community and the culture most of all). Again, this research encourages the conveyance of more subjective analysis and critical discourse where resilience shall not primarily be regarded as a neo-liberal project. Instead, it suggests that resilience can be viewed much more as a system of processes and a phenomenon constantly reproduced by rural community members through unintentional, conflicting actions that often lack purposeful contribution to resilience and awareness of further consequences in community life. Whereas a number of writers have identified a spectrum of concepts in the resilience literature and have suggested overstepping conceptual gaps between reactive to proactive human agency or a structure-agency divide (e.g. Skerratt 2013, Darnhofer et al. 2016), the current research aims to take a step further. Here our aim is to think through how works on community studies, social capital and non-human agency can be tapped into by resilience thinking and how ideas that resonate with resilience thinking have been applied implicitly within the works of rural geographers before the concept became popular.

Despite the many critiques and problematic points it has, this research suggests that resilience has merit and is a concept of analytical value when applied with consideration. In this thesis resilience appears in three forms. Firstly, resilience can be used as a metaphor where it denotes a property of communities without operationalisation of the concept and it is not elaborated in details but imbued with positive attachment and normative assumptions – as seen in the report of Roberts (2014) for example. Resilience is 'good' in this sense and means stability and a condition or preferred state of being that can be achieved. Based on the critiques of this approach has a narrower understanding of resilience been developed that has more analytical value and can be operationalised much better. Following Carpenter et al. (2001) thinking about 'resilience of what to what' means thinking of the effects of pressures and drivers of change that affect well defined subjects. When speaking of communities' resilience to effects of climate change as seen in the Wales RDP (2014) for example, resilience can even be made quantifiable. This is the meaning in which it can make sense to speak of 'something being resilient to' pressures and to consider 'building' or 'strengthening' resilience. A third approach that this research advocates would focus instead on 'what is meant to be preserved', how can the subject of the research be defined, what its key parameters are, how it is constructed, reproduced, and so think through what are the ways it is able to restructure. This project regards this as an approach that is analytical instead of normative and is able to help us think in terms of the forces that stabilize the community – and the origins of agency – but also helps to unpack why rural communities are changing and what are the forces behind these processes. This approach is close to the one of SES but is not based on scientific analysis, instead focuses on human-non-human relations and this project has more relevance to studies of sociological phenomena. A contribution of this thesis therefore is also that it tests how assemblage theory can help us understand resilience.

Unlike many previous approaches to community resilience, in which the ties enacted through daily community practices are represented primary as passive, this research acknowledges the active relational agency of such network ties. Assemblage theory is used as the analytical framework to investigate how relational network ties are established and how they have an agency that shapes resilience. According to the

assemblage theory approach developed by Deleuze & Guattari (1988) and its interpretation by DeLanda (2006), components of the community assemblage are tied together by relations, which resonates both with ideas applied within resilience, social capital and the wider community studies literature. Assemblage theory also offers an analytical view on how components may be 'unbuckled' from one assemblage and become constitutive parts of others, establishing new forms of rural assemblages. The analysis of the relations between humans and non-humans are supported by ideas borrowed from more-than-human, plant and animal geographies.

Assemblage theory is used as a tool in this thesis and so it is not an aim of this research to add to Deleuze and Guattari's or DeLanda's works, the goal instead is to see how these are able to contribute to resilience scholarship and community studies. Assemblage is not a concept used as a replacement of community but it is the network of a community of humans and the non-humans people interact with. One advantage of an assemblage approach is that it is able to think about a rural community being built up of components and how it is able to restructure in space and time. Social capital also resonates with the idea of assemblage as both are engaged with the operation of networks and the relations between certain entities. Another advantage of assemblage approach is that it hints at how the elements play a role in stabilizing or changing the assemblage, how their agency can be grasped. As opposed to readings of agency where it is practiced only by humans, here its distribution becomes more 'even'. Humans are 'deprived' from a certain 'amount' of agency as it is not their deliberate actions that are in focus: it is the ways of life and daily practices – that are determined by materiality and coding of components and their relations – that give agency to people. At the same time, non-humans play a larger role in shaping agency through the relations they have with humans.

Another main contribution of this research to scholarship was to think through how social capital is a concept that can be regarded as an anchor in the literature when discussing resilience. According to its most simple definition, social capital means certain properties of the society that someone can capitalize on or social peculiarities that have other consequences. This thesis acknowledges that numerous approaches to social capital are able to highlight many aspects of communities (trust, cooperation, ties,

networks, inclusion-exclusion etc.) but this project suggests that it is the networks and linkages of relations – and potential relations – that shall primarily be considered as social capital. An addition of this project to scholarship on social capital is that it analyses how networks of humans are result of and are affected by the relations of humans and non-humans. In terms of its relation to resilience, the classical schools of social capital are useful when thinking through how groups such as communities are established and how they become stabilised (such as sense of community and the circles of cooperation). However, it is a network approach to social capital – that includes human and non-human relations – that adds to our understanding about how and why communities operate and are changing. The networks here are understood as forming within assemblages and network links carry qualitative values as they may convey a level of stability, potential, and ephemerality that can have wider impacts on the community level, as seen in the case of the unripe watermelon.

The case-studies of this research were farming communities from Hungary and Wales, the watermelon producing community of Medgyesegyháza and the upland sheep rearing community of the Cambrian Mountains, respectively. The aim of working with such different case-studies was to enable illustration of linkages between theories, and think through conceptual questions thesis is focusing on and also to highlight how concepts may be applicable to rural communities in general. Therefore, the context was not of significant importance, it is not answering specific local problems or reviewing how resilience appears in local policies that were in focus. The communities in this thesis were defined as communities of practice where identity and the networks of humans (such as the model of family farming, reciprocal work, day-labourers etc.) were shaped by the people living in the region and their relations to non-humans such as the agricultural commodities (watermelon and the lambs). How communities operate largely depend on and can be described by the concept of social capital (discussed in the following paragraph). Although resilience (and being resilient) can mean many things – in light of individual interests present in the communities and rural development initiatives – in this Human Geography focused research it is primarily the abilities for the continuation of these communities: the continuation of a particular way of life embedded in structures, relations, practices and identity.

9.2. Answering the research questions

"What is the significance of relational agency in community resilience?"

Resilience is a concept implicitly engaged with relations, as it focuses on the dynamic processes and interconnections of individuals within their communities, and communities within their wider environments. Although changing social relations and social networks have been a subject of community studies and research on social capital, community resilience emerged as a specific field in sociology due to both its attention on dynamics of change and its interest in the capacities and agency of people in controlling their relations. As aspects of social capital such as social network analysis have always been able to unfold how things work in the community to a certain extent, within the agenda of resilience, they have been utilised to put emphasis on how people capitalise on social relations by transforming them into sources of agency. Such an approach would concentrate on humans and their social relations only.

Broadening the perspective and thinking in terms of assemblages would include more-than-social relations and the agency of non-humans. This has a number of implications on how we may think about community resilience. Firstly, agency captured within the scope of our framework would be generated beyond the awareness and intention of humans, secondly, non-human and human relations would mean thinking in terms of drivers of change that are generated within the community – some of which may be regarded as malign –, thirdly, social relations would be understood in terms of and as being influenced by the more-than-social relations, and fourthly, such an approach would provide a better understanding concerning how the community has been established and stabilised through daily practices.

Answering the five sub-questions

"1) How has relationality within rural communities been addressed by rural geographers and sociologists, what are the strength and limitations of these relational approaches?"

Community studies have implicitly been engaged with social relations as they were engaged with territorial, structural or symbolic assemblages and the development of a focus on relational – a such as scalar – properties within communities and a network approach to communities has explicitly become interested in communities as relational formations. The past four decades has seen a growing popularity of research on social capital that is also interested in the potential resources lying in social relations. While traditional community studies focused on transformation of communities, and therefore, tacitly resilience, they did not directly examine power dynamics and the multitude of forces that drive change or maintain the stability of the community. The social capital literature has engaged with some of these capacities of social relations, but by nature, considered certain social relations as beneficial for certain groups only and from limited perspectives that meant that the multitude of interests present in a community could not be grasped. At the same time, social capital is not engaged with more-than-human agency and how the agency of non-humans is able to drive social relations.

"2) How do relationships within the community contribute to resilience and what are the limitations of looking at cooperation through readings of social capital?"

The literature on community resilience has been engaged with various forms of social relations labelled under social capital that were treated as factors that supports the resilience of communities. The literature treated social and other capitals under different conceptual headings erasing the link that more-than-social relations may offer to social networks. The role of social networks lay mainly in its ability to mobilize leadership, effective decision-making, active agents, collective action, and reciprocal links, and also

to provide access to other resources such as knowledge in times of need. Looking at resilience through the lens of social capital meant that resilience was viewed an intentional coping process, linked to certain pressures and community goals.

Social capital embraced elements of both structure and agency: individual actions based on habitus or personal preferences and structural properties of society such as the role of institutions have been mixed within the concept of social capital. The way social relations have been used in the literature that does not fully unpack what the source of certain aspects of social relations are, how they are reproduced through daily activities of farming in non-intentional ways and how they become responsible for the establishment and stabilization of the community itself. In addition, the treatment of social capital within community resilience literature has been overly positive and has hidden the power struggles and the multitude of interests that are present in communities. This meant that forces generated from within the community through social relations, but which are nevertheless able to transform the complete network in ways considered as malign, have been excluded from these accounts.

"3) How do the identities and subjectivities of humans emerge from their social relationships?"

This research has found that farmers and members of the rural community form an identity as food producers. The social networks that they take part in and the social relations that they have with other people are largely influenced by the relations they have with land and commodities. This thesis argues that humans have material properties such as finite physical abilities, and that the specific human-land connections and human-commodity relations are result of the personal responsibility farmers feel towards land management and food production. Both of these have an imprint on the identity and the social organization of the community and mark out the ways in which farmers follow practices and carry out certain actions.

"4) How do relations to the land contribute to the territorialisation of the communities?"

Rural communities have historically been defined as groups of farmers associated with a particular place, and often following a particular type of farming within that geographical landscape. The case-studies have shown examples where the communities of practice and the territorial community have become less aligned with the two assemblages becoming disassociated in the past decades. It is the family farm that has remained as the site that links humans, farmland and commodities together and which are the site of reproduction of rural communities of practice. This resonates with the concept of consubstantiality (Gray 1996; 1998) introduced in the thesis.

According to the theoretical framework territorialisation grasps both the relations and arrangements of the components and displays how the rural communities are geographically located in the countryside. In this research, land is not purely the site and indicator of Deleuzean and DeLandean territorialisation and deterritorialisation but it is also considered as a vital component of the rural assemblage. The land has material properties determined by certain natural conditions that mark how it can be successfully used but it also has expressive properties in the form of legislations etc. that mean that there are restricted ways in which it can be related to other components. Some of the components land is associated with can be replaced literally on the land itself and the fact that there are limited options for how the assemblage is able to spatially reorganise also strongly resonate with the 'lines of flight' concept of Deleuze.

"5) How can the agency of non humans within community relations be captured?"

A key concern of this thesis is how community resilience is driven by the human and non-human relations. This research argues that more than social relations that the non-humans build with other entities within the assemblages are able to take a part in triggering agency in establishing and modifying social relations and social networks. Following assemblage theory, agency lies not only in single movements and transformations that non-humans perform on their own, but much more in how they

come together and establish relations with other components, especially the land and the humans. In this sense, networks of humans that shape various forms of social capital are 'anchored' and to a certain extent, are affected by the relations of humans and non-humans. Non-humans therefore are considered more than indicators of resilience. Instead, they provide a level of stability and are drivers of change.

This project also argues that the agency of non-humans can be grasped by rethinking the material and expressive properties of the non-human components that form their affordances and possible relations they may develop. Specific farming practices may, in general, provide function and identity for communities, as the commodities are produced in calculable ways. There are contingencies and possible arrangements embedded within the material and symbolic properties of the non-humans and these carry the ability to reconnect them with components in rather unexpected or perhaps unfavourable ways. Thinking in terms of assemblages, some of these unexpected rearrangements may emerge within more than social relations in a short period of time and result in complete reorganization of the social networks.

9.3. Limitations and further recommendations of the research

This research aimed to add to our understanding of community resilience may be addressed by relational approaches and in a more practical sense, this theoretical connection helps us capture how resilience is performed by daily practices. Although the case studies were designed to follow the nature of the research and come to findings that are not context-specific, the research was still constrained to rural farming communities engaged in commodity production and in the market economy settings of the European Union. As the studies were built on a critique of the existing resilience literature that used the concept in a normative way, this work did not concentrate on local politics and policy documents, even though it acknowledged that it is evident that that communities are highly driven by policies and planning.

Also, it seemed that the Deleuzean approach – and this includes the works of his followers such as Manuel DeLanda – do find agency as a key concept in assemblages, they cannot operationalise and fully unpack the potential of assemblage-thinking in

terms of how agency is triggered by the relations of the components. Agency, capacity, force, power, assembling, acting etc. are all related terms that assume an often unintentional role in triggering or conducting a process of change. Whilst this study has primarily applied a Deleuzean approach to assemblage, further insights might be gained by drawing on other assemblage perspectives based on Foucault or Latour. Concentrating on the role of certain non-humans in agency, we may need to reach for other theories and think more in a way Callon (1986) has done so in his work on scallops (mentioned in Chapter 8). Some components of Actor-Network Theory can be used, therefore, as 'supportive' pieces of theories that supplement assemblage theory. Answering these further questions established during this work, we may need to follow up on the works of writers such as Bingham (1996), Hinchliffe (2007; 2010), Hinchliffe et al. (2013) that add to the theories on agencies. These works explore how placing non-humans in certain environments may trigger wider modifications, in case they do not fulfil the role imagined for them by humans. Thus, I call for further investigation into how the watermelons and lambs may have a non-intentional agency in conducting and transforming human relations.

The aim of this study was to investigate how rural communities perform resilience without directly aiming at providing normative outputs and practical guidance to planning and policy. The findings of this work do imply information useful to future exploration of community resilience in terms of policy, however. This means these recommendations are not strictly defined measures on 'how to make a community more resilient' or suggestions on a widely applicable analytical framework but pillars instead that act as fields of interests one might want to take into account horizontally throughout an analysis and a resilience-building process. Community resilience approached as being formulated by relational agency that can be captured by an assemblage approach shall by definition devote significant attention to those actors and actants that are often considered as powerless objects – instead of being subjects – by the orthodox resilience approaches. Opposed to the traditional school of resilience that prioritise social relations and praise the agency of humans, institutions and large scale processes, such as global markets, this study suggests that the very down-to-earth practices and entities are what determine what resilience means to communities. In this respect of especial importance

are the non-human components of the assemblage that reproduce the community though the farming process which shall be captured by policy-makers. At a first glance, non-humans such as the land or the commodities are taken care of by farmers but these cannot be wholly controlled by people, in fact, they have an agency in relation to humans. Although non-humans such as commodities are components that are governed and considered by farmers, local decision-makers or the state administration in different ways, it is a question of who is actually responsible for their agency. As components of the rural assemblage may have a form of power triggered via the changing relations, it is often partially a non-human that determines how conflicts erupt within the community.

BIBLIOGRAPHY

Arce, A. & Marsden, T. (1993): The social construction of international food: a new research agenda. *Economic Geography*, 69: 293-311.

ADAS (2008): Literature Review on The Practice of Hefting. 'Assessment of the impact of hefting (heafing or learing). – BD1242', Science and Research Projects, Department for Environment, Food and Rural Affairs. [on-line] URL http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=15631 [accessed 06 June 2015].

Adey, P. & Anderson, B. (2011): Event and anticipation: UK Civil Contingencies and the space – times of decision. *Environment and Planning A*, 43: 2878-2899.

Adger, W. N. (2000): Social and Ecological Resilience: Are They Related? *Progress in Human Geography*, 24(3): 347-364.

Adger, W. N. (2003): Social capital, collective action, and adaptation to climate change. *Economic Geography*, 79(4): 387-404.

Adger, W. N. (2006): Vulnerability. *Global Environmental Change*, 16: 268-281.

Adler, P. S. (2015): Community and Innovation: From Tönnies to Marx. *Organization Studies*, 36(4): 445-471.

Aigner, S. M., Flora, C. B., Hernandez, J. M. (2001): The premise and promise of citizenship and civil society for renewing democracies and empowering sustainable communities. *Sociological Inquiry*, 71: 493-507.

Aitchison, J. W. & Hughes, E. J. (1988): The Common Lands of Wales. *Transactions of the Institute of British Geographers*, 13(1): 96-108.

Allan, G. & Phillipson, C. (2008): Community studies today: urban perspectives. *International Journal of Social Research Methodology*, 11(2): 163-173.

Allen, J. (2011): Powerful assemblages? *Area*, 43(2): 148-153.

Almedom, A. (2005): Social capital and mental health: An interdisciplinary review of primary evidence. *Social Science and Medicine* 61: 943-964.

Amin, A. (2005): Local community on trial. *Economy and Society*, 34: 612-633.

Amundsen, H. (2012): Illusions of resilience? An analysis of community responses to change in Northern Norway. *Ecology and Society*, 17(4): 14. 241

Anderson, B., Keanes, M., McFarlane, C., Swanton, D. (2012): On Assemblages and Geography. *Dialogues in Human Geography*, 2(2): 171-189.

Anderson, B. & McFarlane, C. (2011): Assemblage and geography. *Area*, 43(2): 124-127.

Anderson, C. D. & Bell, M. M. (2003): The devil of social capital: a dilemma of American rural sociology. In: Cloke, P. (ed.): *Country Visions*. Essex: Pearson Education, pp. 232-244.

Anderies, J. M., Walker, B. H., Kinzig, A. P., (2006): Fifteen weddings and a funeral: case studies and resilience-based management. *Ecology and Society*, 11(1): 21.

Antonovsky, A. (1979): *Health, Stress and Coping*. San Francisco: Jossey-Bass.

Antonovsky, A. (1996): The salutogenic model as a theory to guide health promotion. *Health Promotion International*, 11(1): 11-18.

Astigarraga, L. & Ingrand, S. (2011): Production flexibility in extensive beef farming systems. *Ecology and Society*, 16(1): 7.

Atterton, J. (2007): 'The strength of weak ties': social networking by business owners in the Highlands and Islands of Scotland. *Sociologia Ruralis*, 47(3): 228-245.

Australian Bureau of Statistics (ABS) (2002): *Measuring Australia's Progress*, Cat. No. 1370.0. Canberra: ABS.

Balazs G., Kappel N., Fekete D. (2011): The rootstock effect in the Hungarian watermelon production. In: Proceedings of 46th Croatian and 6th International Symposium on Agriculture (Ed. M Pospišil), Croatia, pp. 492-495.

Bakker, K. & Bridge, G. (2006): Material worlds? Resource geographies and the 'matter of nature'. *Progress in Human Geography*, 30: 5-27.

Bakucs, L. Z., Fertő, I., Szabó, G. G. (2013): Contractual relationships in the Hungarian milk sector. *British Food Journal*, 115(2): 252-261.

Bandura, A. (2001): Social cognitive theory: an agentic perspective. *Annual Review of Psychology*, 52(1):1-26.

Barad, K. (2007): *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press.

Baranyai, Zs. (2010): Az együttműködés elméleti és gyakorlati kérdései a Magyar mezőgazdasági géphasználatban. PhD Thesis. Gödöllő: Szent István Egyetem, Gazdálkodás és Szervezéstudományok Doktori Iskola.

Barnes, J. (1954): Class and committees in a Norwegian island parish. *Human relations*, 7: 39-58.

Barr, S. & Devine-Wright, P. (2012). Resilient communities: sustainabilities in transition. *Local Environment: The International Journal of Justice and Sustainability*, 17(5): 525-532.

Bauman, Z. (2000): *Liquid Modernity*. Cambridge: Polity Press.

Békés County Regional Development Plan (Békés Megye Területfejlesztési Koncepciója. Helyzetértékelés, helyzetelemzés). Békés Megye Önkormányzat Közgyűlése, 3/2014 (II. 14) KGY.

Bell, M. M. (1994): *Childerley: Nature and Morality in a Country Village*. Chicago: University of Chicago Press.

Bell, C. & Newby, H. (1971): *Community Studies: an introduction to the sociology of the local community*. London: Allen and Unwin.

Bennett, J. (2004): The force of things: Steps towards an ecology of matter. *Political Theory*, 32(3): 347-372.

Bennett, J. (2005): The agency of assemblages and the North American blackout. *Public Culture*, 17(3): 445-465.

Bennett, J. (2010): *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.

Bennett, K., Carroll, T., Lowe, P., Phillipson, J. (2002): *Coping with Crisis in Cumbria: Consequences of Foot and Mouth Disease*. Newcastle Upon Tyne: Centre for Rural Economy Research Report, University of Newcastle Upon Tyne.

Ben-Porath, Y. (1930): The F-Connection: Families, Friends, and Firms and the organization of exchange. *Population and Development Review*, 6: 1-30.

Berkes, F. (2004): Knowledge, learning and the resilience of social-ecological systems. In: The commons in an age of global transition: challenges, risks and opportunities. Proceedings of the Tenth Conference of the International Association for the Study of Common Property, 9-13 August 2004, Oaxaca, Mexico. [on-line]. URL http://dlc.dlib.indiana.edu/dlc/handle/123456789/2385 [accessed 20/01/2013].

Berkes, F. & Folke, C. (1998): Linking social and ecological systems for resilience and sustainability. In: Berkes, F. & Folke, C. (eds.): *Linking social and ecological systems: management practices and social mechanisms for building resilience*. Cambridge: Cambridge University Press, pp. 13-20.

Berkes, F. & Jolly, D. (2001): Adapting to climate change: social-ecological resilience in a Canadian western Arctic community. *Conservation Ecology*, 5: 18.

Berkes, F. & Ross, H. (2013): Community Resilience: Toward an Integrated Approach. *Society & Natural Resources: An International Journal*, 26(1): 5-20.

Bhaskar, R. (1978): *A Realist Theory of Science*. Sussex: The Harvester Press.

Biggs, R., Schlüter, M., Biggs, D., Bohensky, E.L., BurnSilver, S., Cundill, G., Dakos, V., Daw, T. M. (2012): Toward principles for enhancing the resilience of ecosystem services. *Annual Review of Environmental Resources*, 37: 421-448.

Bingham, N. (1996): Objections: from technological determinism towards geographies of relations. *Environment and Planning D: Society and Space*, 14: 635-657.

Blackshaw, T. (2010): *Key concepts in community studies*. London: Sage.

Blomley, N. (2013): Performing property, making the world. *Canadian Journal of Law and Jurisprudence*, 26: 23-48.

Bodorkós B. & Kelemen E. (2006): „Közös lónak túros a háta?"A társadalmi tőke és a részvételi akciókutatás szerepe a Mezőcsáti Kistérség gazdálkodóinak együttműködésében. I. Országos Környezetgazdaságtani Ph.D.-konferencia 2007. november 27.

Bonta, M. & Protevi, J. (2004): *Deleuze and Geophilosophy: A Guide and Glossary*. Edinburgh: Edinburgh University Press.

Bott, E. (1957): *Family and social network*. London: Tavistock.

Bourdieu, P. (1977): *Outline of a theory of practice*. Cambridge: Cambridge University Press.

Bourdieu, P. (1980): Le capital social: notes provisoires. *Actes de la Recherche en Sciences Sociales*, 31: 2-3.

Bourdieu, P. (1984): *Distinction: a social critique of the judgement of taste*. London: Routledge.

Bourdieu, P. (1985): The forms of capital. In: Richardson, J. G. (ed.): *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood, pp. 241-258.

Brand, F.S. & Jax, K. (2007): Focusing the meaning(s) of resilience: resilience as a descriptive concept and a boundary object. *Ecology and Society*, 12(1): 23.

Bridger, J. C. & Luloff, A. E. (1999): Toward an interactional approach to sustainable community development. *Journal of Rural Studies*, 15: 377-387.

Brose, D. A. (ed.) (2015): *Developing a Framework for Measuring Community Resilience. Summary of a Workshop*. Washington D. C.: National Academies Press.

Brown, D. & Kulig, J. (1996/97): The concept of resiliency: Theoretical lessons from community research. *Health and Canadian Society*, 4: 29-52.

Brown, K. (2014): Global environmental change: a social turn for resilience. *Progress in Human Geography*, 38(1): 107-117.

Brough, M., Bond, C., Hunt, J., Jenkins, D., Shannon, C., Schubert, L. (2006): Social capital meets identity: Aboriginality in an urban setting. *Journal of Sociology*, 42: 396-411.

Bryant, L. (1999): The detraditionalization of occupational identities in farming in South Australia. *Sociologia Ruralis*, 39(2): 236-261.

Brown, D. & Kulig, J. (1996/97): The concept of resiliency: Theoretical lessons from community research. *Health and Canadian Society*, 4: 29-52.

Buller, H. (2004): Where the wild things are: the evolving iconography of rural fauna. *Journal of Rural Studies*, 20: 131-142.

Bulmer, M. (1987): *The social basis of community care*. London: Allen & Unwin.

Bunge, M. (1979): *Causality and modern science*. New York: Dover.

Burnside, D. (2007): *The Relationship Between Community Vitality, Viability and Health, and Natural Resources and their Management*. Canberra: National Land and Water Resources Audit.

Burt, R. S. (1992): *Structural holes: The social structure of competition*. Cambridge: Harvard University Press.

Burton, R., Mansfield, L., Schwarz, G., Brown, K., Convery, I. (2006): *Social capital in hill farming: report for the Upland Centre*.

Butler, J. (1990): *Gender trouble: feminism and the subversion of identity*. London: Routledge.

Butler, J. (1993): *Bodies that matter: on the discursive limits of 'sex'*. London: Routledge.

Butler, J. (1997): *The psychic life of power: theories in subjection*. Palo Alto: Stanford University Press.

Butler, J. (2004): *Undoing gender*. London: Routledge.

Cabell, J. F. & Oelofse, M. (2012): An indicator framework for assessing agroecosystem resilience. *Ecology and Society*, 17(1): 18.

Cabinet Office (2010): *Building the Big Society*. London: Cabinet Office.

Cabinet Office (2011): *Strategic National Framework on Community Resilience*. London: Cabinet Office.

Callon, M. (1986): Some elements of a sociology of translation; domestication of the scallops and the fishermen of St Brieux Bay. In: Law, J. (ed.): *Power, Action and Belief: A New Sociology of Knowledge?* London: Routledge and Kegan Paul, pp.196-233.

Callon, M. & Law, J. (1995): Agency and the Hybrid Collectif. *The South Atlantic Quarterly*, 94(2): 481-507.

Callon, M. & Law, J. (1997): After the individual in society: lessons in collectivity from science, technology and society. *Canadian Journal of Sociology*, 22: 165-182.

Cambrian Mountains Society (2006): *Cambrian Mountains – The Heart of Wales. Developing a Strategy for a Sustainable Future*. Aberystwyth: Cambrian Mountains Society.

Cambrian Mountains Initiative: Cambrian Mountains Destination Partnership. Aberystwyth: Cambrian Mountains Initiative. Cambrian Mountains Initiative webpage. [on-line]. URL www.cambrianmountains.co.uk. [accessed 20/01/2014].

Carmarthenshire County Council (2011): Carmarthenshire Local Development Plan (Deposit). Carmarthen: Carmarthenshire County Council.

Carpenter, S. R., Walker, B. H., Anderies, J. M., Abel, N. (2001): From metaphor to measurement: Resilience of what to what? *Ecosystems*, 4: 765-781.

Carpenter, S., Westley, F., Turner, G. (2005): Surrogates for resilience of socialecological systems. Ecosystems, 8: 941-944.

Cash, D. W., Clark, W. C., Alcock, F., Dickson, N., Eckley, N., Guston, D. H., Mitchell, R. B. (2003): Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences*, 100: 8086-8091.

Cash, D. W., Adger, W., Berkes, F., Garden, P., Lebel, L., Olsson, P., Pritchard, L., Young, O. (2006): Scale and cross-scale dynamics: governance and information in a multilevel world. *Ecology and Society*, 11(2): 8.

Castells, M. (1997): *The information age: The power of identity (Vol. 2)*. Oxford: Blackwell.

Castells, M. (1996): *The Rise of the Network Society*. Malden: Blackwell Publishers.

Cater, P. (2006): *Parrot*. London: Reaktion Books Ltd.

Caulkins, D. D. (2009): Grid-group analysis. In: Svendsen, G. T. & Svendsen, G. L. H. (eds.): *The Handbook of Social Capital*. Cheltenham: Edward Elgar, pp. 57-72.

Ceredigion County Council (2013): Ceredigion Local Development Plan (2007 –2022). Aberystwyth: Ceredigion County Council.

Chayanov, A. V. (1966): *The theory of peasant economy*. Homewood: Richard D. Irwin Inc.

Cheney, J. (1994): Ecofeminism and the Reconstruction of Environmental Ethics. In: Warren, K. J. (ed.): *Ecological Feminism*. London: Routledge, pp. 158-178.

Cheshire, L., Esparcia, J., Shucksmith, M. (2015): Community resilience, social capital and territorial governance. *Journal of Depopulation and Rural Development Studies*, 18: 7-38.

Cheshire, L., Meurk, C., Woods, M. (2013): Decoupling farm, farming and place: Recombinant attachments of globally engaged family farmers. *Journal of Rural Studies*, 30, 64-74.

Cicchetti, D. (1993). Developmental psychopathology: Reactions, reflections, projections. *Developmental Review*, 13: 471-502.

Cleaver, F. (2002): Reinventing institutions: bricolage and the social embeddedness of natural resource management. *The European Journal of Development Research*, 14(2): 11-30.

Cloke, P. & Jones, O. (2001): Dwelling, place, and landscape: an orchard in Somerset. *Environment and Planning A*, 33: 649-66.

Cloke, P., Philo, C., Sadler, D. (1991): Approaching Human Geography. London: Chapman.

Coaffee, J. (2013): Rescaling and responsibilising the politics of urban resilience: from national security to local place-making, *Politics*, 33(4): 240-252.

Cocklin, C. & Alston, M. (eds.) (2003): C*ommunity Sustainability in Rural Australia: A Question of Capital?* Wagga Wagga: Academy of the Social Sciences in Australia, Centre for Rural Social Research, Charles Sturt University.

Cohen, A. (1979): The Whalsay croft: traditional work and customary identity in modern times. In: Wallman (ed.): *The social anthropology of work*. London: Academic Press, pp. 249-267.

Cohen, A. (1985): *The Symbolic Construction of Community*. London: Tavistock.

Cohler, B. (1991): The life story and the study of resilience and response to adversity. *Journal of Narrative and Life History*, 1(2&3): 169-200.

Coldwell, I. (2007): New farming masculinities: "more than just shit-kickers", we're "switched-on" farmers wanting to "balance lifestyle, sustainability and coin". *Journal of Sociology*, 43(1): 87-103.

Colussi M. & Rowcliffe, P. (2000): *The Community Resilience Manual. A Resource for Rural Recovery & Renewal*. Port Alberni: Canadian Centre for Community Renewal.

Coleman, J. S. (1986a): Social theory, social research, and a theory of action. *American Journal of Sociology*, 91: 1309-35.

Coleman, J. S. (1986b): *Individual interests and collective action*. Cambridge: Cambridge University Press.

Coleman, J. S. (1988a): Social capital in the creation of human capital. *American Journal of Sociology*. 94: 95-121.

Coleman, J. S. (1988b): The creation and destruction of social capital: implications for the law. *Notre Dame Journal of Law, Ethics, Public Policy*, 3: 375-404.

Coleman, J. S. (1990): *Foundations of Social Theory*. Cambridge: Belknap Press of Harvard University Press.

Coleman, J. S. (2000): Social capital in the creation of human capital. In: Dasgupta, P. & Serageldin, I. (eds.): *Social capital: Multifaceted perspective*. Washington D.C.: The World Bank, pp. 13-39.

Collier, S. J. (2006): Global assemblages. *Theory, Culture & Society*, 23(2-3): 399-401.

Colussi M. & Rowcliffe, P. (2000): T*he Community Resilience Manual. A Resource for Rural Recovery & Renewal*. Port Alberni: Canadian Centre for Community Renewal.

Convery, I., Bailey, C., Mort, M., Baxter, J. (2005): Death in the wrong place? Emotional geographies of the UK 2001 foot and mouth disease epidemic. *Journal of Rural Studies*, 21: 99-109.

Cook, I. (2004): Follow the thing: papaya. *Antipode*, 36(4), 642-664.

Cote, M. & Nightingale, A. J. (2012): Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36: 475-489.

Council of Australian Governments (2011): *National strategy for disaster resilience: building our nation's resilience to disasters.* Canberra: Commonwealth of Australia.

Cox, Jr., L. A. (2012): Community Resilience and Decision Theory Challenges for Catastrophic Events. *Risk Analysis*, 32: 1919-1934.

Cretney, R. (2014): *Resilience for whom? Emerging critical geographies of socio-ecological resilience. Geography Compass*, 8(9): 627-640.

Crow, G. & Allan, G. (1994): *Community Life: An introduction to local social relations.* London: Harvester Wheatsheaf.

Crow, G. & Maclean, C. (2006): Community. In: Payne, G. (ed.): *Social Divisions*. Basingstoke: Palgrave, pp. 352-372.

Crow, G. & Mah, H. (2011): Conceptualisations and meanings of community: the theory and operationalization of a contested concept. AHRC Connected Communities Programme.

Csépai, B. (2015): The ceasefire is over. *European Competition Law Review*, 36 (9): 404-405.

Curtis, S. (2010): Resilience, social capital and social integration. In: Curtis, S. (ed.): *Space, Place and Mental Health*. Aldershot: Ashgate, pp. 93-124.

Cutter, S. L., Barnes, L., Berry, M., Burton, Ch., Evans, E., Tate, E., Webb, J. (2008): A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, 18(4): 598-606.

Dane, F. & Liu, J. (2006): Diversity and origin of cultivated and citron type watermelon (Citrullus lanatus). *Genetic Resources and Crop Evolution*, 54(6): 1255.

Darnhofer, I. (2005): Organic Farming and Rural Development: Some Evidence from Austria. *Sociologia Ruralis*, 45(4): 308-323.

Darnhofer, I., Fairweather, J., Moller, H. (2010): Assessing a farm's sustainability: insights from resilience thinking. *International Journal of Agricultural Sustainability*, 8(3): 186-198.

Darnhofer, I., Lamine, C., Strauss, A., Navarrete, M. (2016): The resilience of family farms: Towards a relational approach. *Journal of Rural Studies*, 44: 111-122.

Davidson, D. J. (2010): The applicability of the concept of resilience to social systems: some sources of optimism and nagging doubts. *Society & Natural Resources*, 23(12): 1135-1149.

Davies, E. & Rees, A. D. (eds.) (1962): *Welsh rural communities*. Cardiff: University of Wales Press

Davoudi, S. (2012): Resilience: a bridging concept or a dead end? *Planning Theory and Practice*, 13(2): 299-307.

Davoudi, S. & Porter, L. (2012): The politics of resilience for planning: a cautionary note. *Planning Theory & Practice*, 13: 329-333.

Day, G. (1998): A community of communities? Similarity and difference in Welsh rural community studies. *The Economic and Social Review*, 29: 233-257.

Deane, R., Pagella, T., Jackson, B., Manley, H., Bradley, S. (2011): Cambrian Mountains adaptive landscapes project: Main case study report. Defra contact CR0449.

DeLanda, M. (2002): *Intensive Science and Virtual Philosophy*. London: Continuum.

DeLanda, M. (2006): *A New Philosophy of Society: Assemblage Theory and Social Complexity*. London: Continuum.

DeLanda, M. (2016): *Assemblage Theory*. Edinburgh: Edinburgh University Press.

Deleuze, G. & Guattari, F. (1972): *L'Anti-Oedipe*. Paris: Les Editions de Minuit.

Deleuze, G. (1986): *Cinema 1: The movement-image*. Minneapolis: University of Minnesota Press.

Deleuze, G. (1988): *Foucault*. Minneapolis: University of Minnesota Press.

Deleuze, G. (1991): *Empiricism and Subjectivity*. New York: Columbia University Press.

Deleuze, G. (1994): Difference and Repetition. New York: Columbia University Press.

Deleuze, G. & Guattari, F. (1983): *Anti- Oedipus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.

Deleuze, G. & Guattari, F. (1986): *Kafka: Toward a Minor Literature*. Minneapolis: University of Minnesota Press.

Deleuze, G. & Guattari, F. (1988): *A thousand plateaus: capitalism and schizophrenia*. London: Athlone Press.

Deleuze, G. & Guattari, F. (1994): *What is Philosoph?* New York: Columbia University Press.

Deleuze, G. & Parnet, C. (1996): *Dialogues*. Paris: Flammarion.

Denevan, W. M. (1983): Adaptation, variation and cultural geography. *The Professional Geographer*, 35: 399-407.

DeVerteuil, G., & Golubchikov, O. (2016): Can resilience be redeemed? Resilience as a metaphor for change, not against change. *City*, 20: 143-151.

Dewsbury, J. D. (2011): The Deleuze-Guattarian assemblage: plastic habits. *Area*, 43(2): 148-153.

Dewsbury, J. D., Harrison, P., Rose, M., Wylie, J. (2002): Enacting geographies, *Geoforum*, 33(4): 437-440.

De Laet, M. & Mol, A. (2000): The Zimbabwe Bush Pump: Mechanics of a fluid technology. *Social Studies of Science*, 30(2): 225-263.

Dicken, P., Kelly, P. F., Olds, K., Yeung, W. C. H. (2001): Chains and networks, territories and scales: towards a relational framework for analyzing the global economy. *Global Networks*, 1(2): 89-112.

Donati, P. (2011): *Relational sociology. A new paradigm for the social sciences*. London: Routledge.

Donati, P. (2014): Social capital and associative democracy: A relational perspective. *Journal for the Theory of Social Behaviour*, 44: 24-45.

Donovan, T. (2002): Community, Assimilation, and the Unfamiliar. *Philosophy and Rhetoric*, 35(3): 244-265.

Durkheim, E. (1997): *The Division of Labor in Society*. New York: The Free Press.

Durkheim, E. (1982): *The rules of sociological method*. New York: The Free Press.

Dwiartama, A. & Rosin, C. (2014): Exploring agency beyond humans: the compatibility of Actor-Network Theory (ANT) and resilience thinking. *Ecology and Society*, 19(3): 28.

Edensor, T. (2006): Performing rurality. In: Cloke, P., Marsden, T., Mooney, P. (eds): *Handbook of rural studies*. London: Sage, 484-495.

Eggins, R., Reynolds K., Cresswell, H., Reid, P. (2004): *A participative negotiation and planning model for improved catchment management*. Canberra: Australian National University, CSIRO, Coraki Consulting, Murray-Darling Basin Commission.

Emery, M. & Flora, C. (2006): Spiraling-Up: Mapping Community Transformation with Community Capitals Framework. *Community Development: Journal of the Community Development Society*, 37(1): 19-35.

Emirbayer, M. (1997): Manifesto for a relational sociology. *American Journal of Sociology*, 103: 281-317.

Emirbayer, M. & Mische, A. (1998): What is agency? *American Journal of Sociology*, 103: 962-1023.

English, J. C. B. & Hicks, B. C. (1992). A system-in-transition paradigm for Healthy Communities. *Canadian Journal of Public Health,* 83(1): 61-65.

Eskridge, A. E., & Alderman, D. H. (2010): Alien invaders, plant thugs, and the southern curse: Framing kudzu as environmental other through discourses of fear. S*outheastern Geographer*, 50(1): 110-129.

European Social Survey (2004) ESS Round 2 – 2004, Norwegian Social Science Data Services.

Fairness for the Uplands webpage. [on-line]. URL http://fairnessfortheuplands.co.uk/index.php/en/ [accessed 22/09/2016].

Featherstone, D. (2011): On assemblage and articulation. *Area*, 43(2): 139-142.

Fernandez, J. W. (1986): *Persuasions and Performances: the Play of Tropes in Culture*, Bloomington: Indiana University Press.

Fine, B. (1994): Towards a political economy of food. *Review of International Political Economy*, 1(3): 519-545.

Fisher, R. (2013): 'A gentleman's handshake': The role of social capital and trust in transforming information into usable knowledge. *Journal of Rural Studies*, 31: 13-22.

Fitzsimmons, M. (1989a): The matter of nature. *Antipode*, 21: 106-120.

Fitzsimmons, M. (1989b): Reconstructing Nature. *Environment and Planning D, Society and Space*, 7: 1-3.

Fitzsimmons, M. & Goodman, D. (1998): Incorporating nature: environmental narratives and the reproduction of food. In: Braun, B. & Castree, N. (eds.): *Remaking Reality: Nature at the Millennium*, London: Routledge, pp. 194-220.

Flora, C., Flora, J., Fey, S. (2004): *Rural communities: Legacy and change* (2nd ed.). Boulder: Westview Press.

Foley, M. W. & Edwards, B. (1999): Is it time to disinvest in social capital? *Journal of Public Policy*, 19: 199-231.

Folke, C., Colding, J., Berkes, F. (2003): Synthesis: building resilience and adaptive capacity in social-ecological systems. In: Berkes, F., Colding, J., Folke, C. (eds.): *Navigating Social-ecological Systems. Building Resilience for Complexity and Change*. Cambridge: Cambridge University Press, pp. 352-387.

Forgács, Cs. (2006): Leadership and the importance of social capital in the transition of cooperatives. A Case study of two cooperatives. *Studies in Agricultural Economics*, 105: 23-38.

Forgrave, A. (2015): All we wanted was fairness, says Welsh moorland farmer. Daily Post. [on-line] URL http://www.dailypost.co.uk/news/local-news/wantedfairness-not-acrimony-says-8617842 [accessed 22/09/2016].

Foucault, M. (1980): *Power/Knowledge: Selected Interviews and Other Writings 1972-1977*. Brighton: Harvester Press.

Foucault, M. (1982): The Subject and Power. *Critical Inquiry*, 8(4): 777-795.

Foucault, M. (1991a): Governmentality. In: Burchell, G., Gordon, C., Miller, P. (eds.): *The Foucault effect: studies in governmentality*. Chicago: University of Chicago Press, pp. 87-104.

Foucault, M. (1991b): Questions of method. In: Burchell, G., Gordon, C., Miller, P. (eds.): *The Foucault effect: studies in governmentality*. Chicago: University of Chicago Press, 73-86.

Foucault, M. (1995): *Discipline & Punish: The Birth of the Prison.* New York: Vintage Books.

Foucault, M. (1998): *The History of Sexuality: The Will to Knowledge*. London: Penguin.

Fox, S. (2000): Communities of Practice, Foucault and Actor-Network Theory. *Journal of Management Studies*, 37(6): 853-868.

Friedmann, H. (1978): World market, state and family farm social bases of household production in the era of wage labour. *Comparative Studies in Society and History*, 20: 545-586.

Friedmann, H. (1980): Household production and the national economy: Concepts for the analysis of agrarian formations. *Journal of Peasant Studies*, 7: 158-184.

Fritz, C. & Williams, H. (1957): The human being in disasters: A research perspective. *Annals of the American Academy of Political and Social Science*, 309: 42-51.

Fukuyama, F. (1995): *Trust: The Social Virtues and the Creation of Prosperity*. New York: The Free Press.

Fukuyama, F. (1996): *The Great Disruption: Human Nature and the Reconstitution of Human Nature*. New York: The Free Press.

Füzér K., Gerő M., Sik E., Zongor, G. (2005): *A társadalmi tőke növelésének lehetőségei fejlesztéspolitikai eszközökkel*. Budapest: TÁRKI.

Füzér K., Gerő M., Sik E., Zongor, G. (2006): Társadalmi tőke és fejlesztés. In: Kolosi, T., Tóth, I. Gy., Vukovich ,Gy. (eds.): *Társadalmi riport 20*. Budapest: TÁRKI, pp. 335-350.

Gale, R., Barg, S., Gillies, A. (eds.) (1995): *Green Budget Reform. An International Casebook of Leading Practices*. London: Earthscan.

Garmestani, A. S., Allen, C. R., Gunderson, L. (2009): Panarchy: discontinuities reveal similarities in the dynamic system structure of ecological and social systems. *Ecology and Society*, 14(1): 15.

Garmezy, N. (1973): Competence and adaptation in adult schizophrenic patients and children at risk. In: Dean, S.R. (ed.): *Schizophrenia: The first ten Dean Award lectures*. New York: MSS Information, pp. 163-204.

Garmezy, N. (1985): Stress-resistant children the search for protective factors. In: Stevenson, J. E. (ed.): *Recent research in developmental psychopathology*. Journal of Child Psychology and Psychiatry Book (Suppl.), 4: 213-233.

Gasson, R. (1973): Goals and values of farmers. *Journal of Agricultural Economics*, 24(3): 521-542.

Gerowitt, B., Bertke, E., Hespelt, S. K., Tute, C. (2003): Towards multifunctional agriculture – weeds as ecological goods? *Weed Research*, 43: 227-235.

Gerrard, N., Kulig J., Nowatzki, N. (2004): What doesn't kill you makes you stronger: determinants of stress resiliency in rural people of Saskatchewan, Canada. *Journal of Rural Health*, 20(1): 59-66.

Gerth, H. H. & Mills, C. W. (1948): *From Max Weber*. London: Routledge and Kegan Paul.

Gibson, C., Ostrom, E., Ahn, T.-K. (2000): The concept of scale and the human dimensions of global change: a survey. *Ecological Economics*, 32: 217-239.

Gibson-Graham, J. K. (2006): *A Postcapitalist Politics*. Minneapolis: University of Minnesota Press.

Giddens, A. (1984): *The constitution of society: outline of the theory of structuration*. Berkeley: University of California Press.

Gillespie, D. & Murty, S. (1994): Cracks in a postdisaster service delivery network. *American Journal of Community Psychology*, 22: 639-660.

Gleeson, B. (2008): Waking fromthe dream: an Australian perspective on urban resilience. *Urban Studies*, 45: 2652-2668.

Goddard, A. (2008): Hefted sheep - a phenomenon cast aside? Introduction. [online] URL http://www.sovereignty.org.uk/features/footnmouth/hefted1.html [accessed 07/06/2015].

Goodman, D. Sorj, B., Wilkinson, J. (1987): *From Farming to Biotechnology: A Theory of Agro-Industrial Development*. Oxford: Blackwell.

Goodman, D. & Redclift, M. (1981): *From Peasant to Proletariat: Capitalist Development and Agrarian Transitions*. Oxford: Basil Blackwell.

Goodman, M. K. (2016): Food geographies I: relational foodscapes and the busy-ness of being more-than-food, *Progress in Human Geography*, 40(2): 257-266.

Goodwin-Hawkins, B. (2015): Mobilities and the English Village: Moving Beyond Fixity in Rural West Yorkshire. *Sociologia Ruralis*, 55: 167-181.

Gotts, N. M. (2007): Resilience, panarchy, and world-systems analysis. *Ecology and Society*, 12(1): 24.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6): 1360-1380.

Granovetter, M. S. (1985). Economic action, social structure and embeddedness. *American Journal of Sociology*, 91: 481-510.

Gray, J. (1996): Cultivating farm life on the Borders: Scottish hill farms and the European Community. *Sociologia Ruralis*, 36: 27-50.

Gray, J. (1998): Family farms in the Scottish Borders: a practical definition by hill sheep farmers. *Journal of Rural Studies*, 14: 431-456.

Gregory, D., Johnston, R., Pratt, G., Watts, M., Whatmore, S. (eds.) (2009): *The Dictionary of Human Geography. 5th Edition*. Oxford: Wiley-Blackwell.

Gunderson, L. H. & Holling, C.S. (2002): *Panarchy: understanding transformations in human and natural systems*. Washington D.C.: Island Press.

Hacking, I. (1986): Making up people. In: Heller, T. C., Sosna, M., Wellbery, D. E. (eds.): *Reconstructing individualism*. Stanford: Stanford University Press, pp. 222-236.

Halfacree, K. H. (2007): Back-to-the-land in the Twenty-First Century – making connections with rurality. *Tijdschrift voor Economische en Sociale Geografie*, 98(1): 3-8.

Haraway, D. (1989): A manifesto for cyborgs: science. Technology, and social feminism in the 1980s. In: Nicholson, L. J. (ed.): *Feminism/Postmodernism*. London: Routledge, pp. 190-233.

Haraway, D. (1991): *Simians, Cyborgs, and Women: the Reinvention of Nature*. New York: Chapman & Hall.

Haraway, D. (1994): A game of cat's cradle: science studies, feminist theory, cultural studies, *Configurations*, 1: 59-71.

Harman, G. (2008): DeLanda's ontology: assemblage and realism. *Continental Philosophy Review*, 41(3): 367-383.

Harris, C., McLaughlin, B., Brown, G., Becker, D. R. (2000): Rural communities in the inland northwest: an assessment of small communities in the interior and upper Columbia River basins. In: Quigley, T. M. (ed.): *Interior Columbia Basin Ecosystem Management Project: Scientific Assessment,* Gen. Tech. Rep. PNWGTR-477, 120. Portland: Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Harrison, C. M. & Burgess, J. (1994): Social constructions of nature: a case study of conflicts over the development of Rainham Marshes, *Transactions Institute of British Geographers NS*, 19: 291-310.

Hart, E. (c. 2004/5). *Hefting in Practice. The Ancient Craft of Grazing the Open Hills*. Private printing.

Harvey, D. (1996): *Justice, Nature, and the Geography of Difference*. Oxford: Blackwell.

Harvey, D. (2009): *Cosmopolitanism and the Geographies of Freedom*. New York: Columbia University Press.

Hassell, R. L., Memmott, F., Liere, D. G. (2008): Grafting Methods for Watermelon Production. *HortScience*, 43(6): 1677-1679.

Hassink, R. (2005): How to unlock regional economies from path dependency? From learning region to learning cluster. *European Planning Studies*, 13: 521-535.

Hawkins, R. L. & Maurer, K. (2009): Bonding, bridging and linking: How social capital operated in New Orleans following Hurricane Katrina. *British Journal of Social Work*, 40(6): 1777-1793.

Head, L. (2012): Conceptualising the human in cultural landscapes and resilience thinking. In: Plieninger, T. & Bieling, C. (eds): *Resilience and the Cultural Landscape: Understanding and Managing Change in Human-shaped Environments*. Cambridge: Cambridge University Press, pp. 65-79.

Head, L. & Atchison, J. (2009): Cultural ecology: emerging human-plant geographies. *Progress in Human Geography*, 33: 236-24.

Head, L., Atchison, J., Phillips, C. (2015): The distinctive capacities of plants: rethinking difference via invasive species. *Transactions of the Institute of British Geographers*, 40(3): 399-413.

Hegney D., Ross H., Baker P., RogersClark C., King C., Buikstra E., Watson-Luke A., McLachlan K., Stallard L. (2008): *Building Resilience in Rural Communities Toolkit*. Toowoomba: The University of Queensland and University of Southern Queensland.

Henriques, J., Hollway, W., Urwin, C., Venn, C., Walkerdine, V. (1984): *Changing the subject: Psychology, social regulation and subjectivity*. London: Methuen.

Herrschel, T. (2007): Between difference and adjustment – The re-/presentation and implementation of post-socialist (communist) transformation. *Geoforum*, 38: 439-444.

Hetherington, K. & Law, J. (2000): After networks. *Environment and Planning D: Society and Space*, 18: 127-132.

Hinchliffe, S. (2007): *Geographies of Nature*. London: Sage.

Hinchliffe, S. (2010): Where species meet. *Environment and Planning D: Society and Space*. 28(1): 34-35.

Hinchliffe, S., Allen, J., Lavau, S., Bingham, N., Carter, S. (2013): Biosecurity and the topologies of infected life: from borderlines to borderlands. *Transactions of the Institute of British Geographers*, 38(4): 531-543.

Hinrichs, C. (2000): Embeddedness and local food systems: notes on two types of direct agricultural market, *Journal of Rural Studies*, 16: 295-303.

Hinrichs, C. (2003): The practice and politics of food system localisation. *Journal of Rural Studies* 19: 33-45.

Hinrichs, C. & Charles, L. (2012): Local Food Systems and Networks in the US and UK. In: Shucksmith, M. & Brown, D. (eds.): *Rural Transformations and Rural Policies in the US and UK*, London: Routledge, pp. 156-176.

Hitchings, R. (2007): How awkward encounters could influence the future form of many gardens. *Transactions of the Institute of British Geographers, NS*, 32: 363-376.

Holling, C. S. (1973): Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 4: 1-23.

Holling, C. S. (1996): Engineering resilience versus ecological resilience. In: Schulze, P. (ed.): *Engineering within Ecological Constraints*. Washington: National Academy Press, pp. 31-44.

Holloway, L., Bear, C., Wilkinson, K. (2014): Robotic milking technologies and renegotiating situated ethical relationships on UK dairy farms. *Agriculture and Human Values*, 31(2): 185-199.

Homeland Security Council (2007): *National Strategy for Homeland Security*. Washington D.C.: Homeland Security Council.

Hopkins, R. (2008): *The transition handbook: From oil dependency to local resilience*. Totnes: Green Books.

Hudson, R. (2010): Resilient regions in an uncertain world: wishful thinking or a practical reality? *Cambridge Journal of Regions, Economy and Society*, 3: 11-25.

Hungarian Competition Authority (2013): Termination order was issued - the end of the watermelon saga. Case number: Vj-62/2012. [on-line] URL http://www.gvh.hu/en/press_room/press_releases/press_releases_2013/8198_en_termination_order_was_issued__the_end_of_the_watermelon_saga.html [accessed 3/3/2016].

Hungarian Government (2014): Magyarország - Vidékfejlesztési Program 2014 – 2020. Budapest: Miniszterelnökség Irányító Hatóság.

Ingold, T. (1995): Building, Dwelling, Living: how people and animals make themselves at home in the world. In: Strathern, M. (ed.): S*hifting Contexts: Transformations in Anthropological Knowledge*. London: Routledge, pp. 57-80.

Ingold, T. (ed.) (1998): *What Is An Animal?* London: Unwin Hyman.

Ingold, T. (2000): *The Perception of the Environment. Essays in Livelihood, Dwelling and Skill*. London: Routledge.

Ingram, J., Gaskell, P., Mills, J., Short, C. (2013): Incorporating agrienvironment schemes into farm development pathways: A temporal analysis of farmer motivations. *Land Use Policy*, 31: 267-279.

Innes, J. E. & Booher, D. E. (1999): Consensus building as role playing and bricolage. *Journal of the American Planning Association*, 65: 9-26.

Iscoe, I. (1974). Community psychology and the competent community. *American Psychologist*, 29: 607-613.

Jackson, P. (2010): Food stories: consumption in an age of anxiety. *Cultural geographies*, 17:2: 147-165.

Jackson, P., Ward, N., Russell, P. (2006): Mobilising the commodity chain concept in the politics of food and farming. *Journal of Rural Studies*, 22: 129-141.

Jackson, P., Ward, N., Russell, P. (2009): Moral economies of food and geographies of responsibility. *Transactions of the Institute of British Geographers*, 34: 12-24.

Johnston, R. J. (1996): *Nature, State and Economy: a Political Economy of the Environment*. Chichester: Wiley.

Johnston, J. (2002). *Restocking a Lake District common, Enact managing land for Wildlife*. P8-9.

Jones, A. & Hughes, S. (2012): *A Business Plan for the Cambrian Mountains Initiative (CMI) 2012 – 2017*. Bristol: Land Use Consultants.

Jones, C. (2004): Networks and learning: communities, practices and the metaphor of networks. *Research in Learning Technology*, 12(1): 81-93.

Jones, M. (2009): Phase space: geography, relational thinking, and beyond. *Progress in Human Geography*, 33(4): 487-506.

Jones, O. (2003): The restraint of beasts: rurality, animality, Actor Network Theory and dwelling. In: Cloke, P. (ed.): *Country Visions*, Harlow: Pearson.

Jones, O. (2006): Non-human rural studies. In: Cloke, P., Marsden, T. and Mooney, P. (eds.): *The Handbook of Rural Studies*. London: Sage, pp. 185-200.

Jones, O. & Cloke, P. (2002): *Tree Cultures: The Place of Trees, and Trees in their Place*, Oxford: Berg.

Jones, O. & Cloke, P. (2008): Non-Human Agencies: Trees in Place and Time. In: Knappett, C. & Lambros, M. (eds.): M*aterial Agency: Towards a Non-Anthropocentric Approach*. Berlin: Springer, pp. 79-96.

Joseph, J. (2013): Resilience as embedded neoliberalism: a governmentality approach. *Resilience*, 1(1): 38-52.

Joyce, I. M. (2013): *The role of grazing animals and agriculture in the Cambrian Mountains: recognising key environmental and economic benefits delivered by agriculture in Wales' uplands*. Aberystwyth: Farmers' Union of Wales.

Kaplan, H. B. (1999): Toward an understanding of resilience: A critical review of definitions and models. In: Glantz, M. D. & Johnson, J. L. (eds.): *Resilience and development: Positive life adaptations*. New York: Kluwer Academic/Plenum, pp. 17-84.

Kadushin, C. (2004): Too much investment in social capital? *Social Networks*, 26: 75-90.

Kaniasty, K. & Norris, F. (2004): Social support in the aftermath of disasters, catastrophes, acts of terrorism: Altruistic, overwhelmed, uncertain, antagonistic, and patriotic communities. In: Ursano, R., Norwood, A., Fullerton, C. (eds.): *Bioterrorism: Psychological and public health interventions*. New York: Cambridge University Press, pp. 200-229.

Kaspar, H. & Landolt, S. (2014): Flirting in the field: shifting positionalities and power relations in innocuous sexualisations of research encounters. *Gender, Place & Culture: A Journal of Feminist Geography*, 23(1): 107-119.

Kautsky, K. (1925): *The labour revolution*. London: George Allen & Unwin.

Kautsky, K. (1988): *The Agrarian Question*. Winchester: Zwan Publications.

Kay, R., Shubin, S., Thelen, T. (2012): Rural realities in the post-socialist space. *Journal of Rural Studies*, 28(2): 55-62.

Keating, N. C. & Little, H. M. (1994): Getting into it: farm roles and careers of New Zealand women. *Rural Sociology*, 59(4): 720-736.

Kelemen E. & Megyesi B. (2007): The Role of Collective Marketing Initiatives in the Hungarian Agriculture. *Eastern European Countryside*, 13: 97-110.

Kendall, G. & Wickham G. (1999): *Using Foucault's methods*. London: Sage.

Kirsch, S. & Mitchell, D. (2004): The nature of things: dead labor, nonhuman actors, and the persistence of Marxism. *Antipode*, 36(4): 687-705.

Kovách, I. (1994): Privatization and family farms in Central and Eastern Europe. *Sociologia Ruralis*, 34: 369-382.

Kovács, K. (2007:) Structures of Agricultural Land Use in Central Europe. In: Heinonen, M, Nikula, J., Kopoteva, I., Granberg, L. (eds.): *Reflecting Transformation in Post-socialist Rural Areas*. Newcastle: Cambridge Scholars Publishing, pp. 87-114.

Kulig, J., Edge, D. S., Joyce, B. (2008): Understanding Community Resiliency in Rural Communities Through Multimethod Research. *Journal of Rural and Community Development*, 3(3): 77-94.

Kun, I. (2006): Vélemény. [on-line]. URL http://hvg.hu/velemeny/200622HVGFriss146. [accessed 8/10/2015]

Land Use Consultants (2008): *The potential for a pilot sustainable rural development initiative for the Cambrian Mountains: Summary report*. Bristol: Land Use Consultants.

Land Use Consultants & Catrin Ellis Associates (2013): *Cambrian Mountains Initiative: Landscape and Ecosystems Futures and Perceptions in the Cambrian Mountains*. Bristol: Land Use Consultants.

Lankester, A. (2012): Self-perceived Roles in Life and Achieving Sustainability on Family Farms in North-eastern Australia. *Australian Geographer*, 43(3): 233-251.

Latour, B. (1993): *We have never been modern*. Cambridge: Harvard University Press.

Latour, B. (1987): *Science in Action - How to follow scientists and engineers through society*. Cambridge: Harvard University Press.

Latour, B. (1999): *Pandora's hope: essays on the reality of science studies.* Cambridge: Harvard University Press.

Latour, B. (2002): Cosmopolitiques, quels chantiers? In: Collin, J.-F. (ed.): *La nature n'est plus ce qu'elle etait*, Paris: Cosmopolitiques 1, pp. 15-26.

Latour, B. (2005): *Reassembling the social: an introduction to Actor-Network Theory*. Oxford: Oxford University Press.

Lave, J. & Wenger, E. (1991): *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Law, J. & Mol, A. (2008): The actor-enacted: Cumbrian sheep in 2001. In: Knappett, C. & Malafouris, L. (eds): *Material Agency: Towards a Non-Anthropocentric Approach*. Berlin: Springer, pp. 57-78.

Lawrence, A. & Wood-Gush, D. (1998): Home-range behaviour and social organisation of Scottish Blackface sheep. *Journal of Applied Ecology*, 25 (1): 25-40.

Lebel, L., Anderies, J. M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T. P., Wilson, J. (2006): Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society*, 11(1): 19.

Lee, J., Arnason, A., Nightingale, A., Shucksmith, M. (2005): Networking, social capital and identities in European rural development, *Sociologia Ruralis*, 45(4): 269-283.

Legg, S. (2011): Assemblage/apparatus: using Deleuze and Foucault. *Area*, 43(2): 128-133.

Lehto, E. & Oska, J. (2009): Networks for local development: Aiming for visibility, products ad success. . In: Vergunst, J., Shucksmith, M., Arnason, A. (eds.) *Comparing Rural Development - Continuity and Change in the Countryside of Western Europe*. Farnham: Ashgate, pp. 17-46.

Lendvay, M. (2013a): Rethinking rural community resilience. Conference presentation. XXVth Congress of the European Society for Rural Sociology, 29 July-1 August 2013,

Florence, Italy. E-proceedings of the XXVth congress of the European Society for Rural Sociology (ESRS), p. 121.

Lendvay, M. (2013b): Debates in resilience: Capturing the role of intangible infrastructures. In: Kapferer, E., Koch, A., Sedmak, C. (eds.): *Strengthening Intangible Infrastructures*. Newcastle: Cambridge Scholars Publishing, pp. 161-176.

Lendvay, M. (2016a): Post-socialist community and local knowledge: Ethnographies of watermelon production in Hungary. In: Kapferer, E., Koch, A., Sedmak, C. (eds.): *Appreciating Local Knowledge*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Lendvay, M. (2016b): Resilience in post-socialist context: The case of a watermelon producing community in Hungary. Hungarian Geographical Bulletin, 65(3): 255-269.

Lendvay, M. (2017): Non-human components as agents in the social assemblage. In: Kapferer, E., Koch, A., Sedmak, c. (eds.): Rethinking social capital. Newcastle upon Tyne: Cambridge Scholars Publishing.

Li, T. M. (2007a): Governmentality. *Anthropologica*, 49(2): 275-281.

Li, T. M. (2007b): Practices of assemblage and community forest management. *Economy and Society*, 36(2): 263-293.

Li, T. M. (2014): What is land? Assembling a resource for global investment. *Transactions of the Institute of British Geographers*, 39: 589-602.

Li, T. M. (2015): Transnational Farmland Investment: A Risky Business. *Journal of Agrarian Change*, 15(4): 560-568.

Li, Y., Savage, M., Pickles, A. (2003): Social change, friendship, and civic participation. *Sociological Research Online*, 8: 412-435.

Liepins, R. (1998): The gendering of farming and agricultural politics: a matter of discourse and power. *Australian Geographer*, 29(3): 371-388.

Liepins, R. (2000). New energies for an old idea: reworking approaches to 'community' in contemporary rural studies. *Journal of Rural Studies*, 16(1): 23-35.

Lin, N. (2001): *Social capital: A theory of social structure and action*. New York: Cambridge University Press.

Lippai, J. (2006): *A Posoni kert*. Budapest: Pytheas Kiadó és Nyomda.

Little, J. & Austin, P. (1996): Women and the rural idyll. *Journal of Rural Studies*, 12(2): 101–111.

Lobley, M. & Potter, C. (1998): Environmental stewardship in UK agriculture: a comparison of the Environmentally Sensitive Area programme and the Countryside Stewardship Scheme in South East England. *Geoforum*, 29(4): 413-432.

Longstaff, P. (2005): *Security, resilience, and communication in unpredictable environments such as terrorism, natural disasters, and complex technology*. Syracuse: Author.

Low, S. M. (1992): Symbolic ties that bind: place attachment in the Plaza. In: Altman, I. & Low, S. M. (eds.): *Place Attachment*. New York and London: Plenum Press. pp. 165-185.

Lowe, P., Clark, J., Seymour, S., Ward, N. (1997): *Moralizing the Environment: Countryside Change, Farming and Pollution*. London University of London Press.

Lowe, P., Edwards, S., Ward, N. (2001): The foot and mouth crisis: issues for public policy and research. Working Paper 64. Newcastle upon Tyne: Centre for Rural Economy, University of Newcastle upon Tyne.

Lowe, P., Murdoch, J., Ward, N. (1995): Networks in rural development: beyond exogenous and endogenous models. In: van der Ploeg, J. D. & van Dijk, C. (eds.): *Beyond modernization*. Assen: Van Gorcum, pp. 87-106.

Ludwig, D., Walker B., Holling, C. S. (1997): Sustainability, stability, and resilience. *Conservation Ecology*, 1(1): 7.

Luthar, S. S. & Cicchetti, D. (2000): The construct of resilience: implications for interventions and social policies. *Developmet and Psychopathology*, 12(4): 857-885.

Luthar, S. S., Cicchetti, D., Becker, B. (2000): The construct of resilience: A critical evaluation and guidelines for future work. Child Devevelopment, 71(3): 543-562.

MacKian, S. (2009): The art of geographic interpretation: Making sense of qualitative data. In: DeLyser, D., Aitken, S., Crang, M., Herbert, S., McDowell, L. (eds.): *The*

SAGE Handbook of Qualitative Research in Human Geography. London: Sage, pp. 359-372.

MacKinnon, D. & Derickson, K. D. (2012): From resilience to resourcefulness: A critique of resilience policy and activism. *Progress in Human Geography*, 13: 329-333.

Macnaghten, P. & Urry, J. (1998): *Contested Natures*. London: Sage.

McNay, L. (2000): *Gender and agency: reconfiguring the subject in feminist and social theory*. Cambridge: Polity Press.

McNay, L. (2004): Agency and experience: gender as a lived relation. *Sociological Review*, 52: 175-90.

Magis, K. (2010): Community Resilience: An Indicator of Social Sustainability. *Society & Natural Resources*, 23(5): 401- 416.

Magurie, B. & Cartwright, S. (2008): *Assessing a community's capacity to manage change: A resilience approach to a social assessment*. Canberra: Australian Government Bureau of Rural Sciences.

Mann, S. (2007): Tracing the process of becoming a farm successor on Swiss family farms. *Agriculture and Human Values*, 24(4): 435-443.

Manyena, S. B., O'Brien, G., O'Keefe, P. and Rose, J. (eds.) (2011): Disaster resilience: a bounce back or bounce forward ability? *Local Environment: The International Journal of Justice and Sustainability*, 16(5): 417-424.

Marcus, G. E. & Saka E. (2006): Assemblage. *Theory, Culture & Society*, 23(2-3): 101-106.

Marsden, T. K. (1998): Economic perspectives. In: Ilbery, B. (ed): *The Geography of Rural Change*. Harlow: Longman.

Marsden, T. K. (2003): *The Condition of Rural Sustainability*. Assen: Royal van Gorcum.

Marsden, T. K. (2009): Mobilities, vulnerabilities and sustainabilities: exploring pathways from denial to sustainable rural development. *Sociologia Ruralis*, 49 (2): 113-131.

Marsden, T. K. & Sonnino R. (2008): Rural development and the regional state: Denying multifunctional agriculture in the UK. *Journal of Rural Studies*, 24: 422-431.

Marston, S. A., Jones, J. P., Woodward, K. (2005): Human geography without scale. *Transactions of the Institute of British Geographers*, *30*(4): 416-432.

Martens, P. & Rotmans, J. (eds.) (2002): *Transitions in a globalising world*. Lisse: Swets and Zeitlinger.

Martin, R. (2012): Regional economic resilience, hysteresis and recessionary shocks. *Journal of Economic Geography*, 12: 1-32.

Martin, R. & Sunley, P. (2006): Path dependence and regional economic evolution. *Journal of Economic Geography*, 6: 395-437.

Martin-Breen, P. & Anderies, J. M. (2011): *Resilience: A Literature Review*. The Rockefeller Foundation. [pdf] [on-line]. URL: http://www.rockefellerfoundation.org/news/publications/resilience-literaturereview. [accessed 14/01/2013].

Marx, K. (1867): *Capital: A Critique of Political Economy*. Moscow: Progress Publishers.

Marx, K. (1973). *Grundrisse: Foundations of the critique of political economy*. Harmondsworth: Penguin.

Massey, D. (1994): *Space, class and gender*. Cambridge: Polity.

Massey, D. (1995): The conceptualization of place. In: Massey, D. & Jess, P. (eds): *A place in the world*. Oxford: Oxford University Press, pp. 45-85.

Massey, D. (2004): Geographies of responsibility, *Geografiska Annaler B*, 86(1): 5-18.

Massey, D. (2005): *For Space*. London: Sage.

Masten, A. S. & Obradovic, J. (2008): Disaster preparation and recovery: lessons from research on resilience in human development. *Ecology and Society*, 13(1): 9.

Mastnak, T., Elyachar, J., Boellstorff, T. (2014): Botanical decolonization: rethinking native plants. *Environment and Planning D: Society and Space,* 32(2): 363-380.

Maton, K., & Salem, D. (1995): Organizational characteristics of empowering community settings: A multiple case study approach. *American Journal of Community Psychology*, 23: 631-656.

Maynard, D. & Maynard, D. N. (2012): Cucumbers, melons and watermelons. In: Kiple, K. F. & Ornelas, K. C. (eds.): *The Cambridge World History of Food*, Part 2. Cambridge: Cambridge University Press, pp. 289-313.

McConnachie, A. (2008): The Social and Environmental Crisis in the British Uplands. [on-line] URL www.sovereignty.org.uk/features/articles/aculture4.html [accessed 13/08/2016]

McFarlane, C. & Anderson, B. (2011): Thinking with assemblage. *Area*, 43(2): 162-164.

McFarlane, C. (2011): The city as assemblage: dwelling and urban space. *Environment and Planning D: Society and Space*, 29: 649-671.

McIntosh, A., Stayner, R., Carrington, K., Rolley, F., Scott, J., Sorensen, T. (2008): *Resilience in Rural Communities: Literature Review*. Armidale: University of New England.

Megyesi, B., Kelemen, E., Schermer, M. (2011): Social Capital as a Success Factor for Collective Farmers Marketing Initiatives. *International Journal of Sociology of Agriculture and Food*. 18(1): 89-103.

Midmore, P. & Moore-Colyer, R. J. (2005): *Cherished Heartland: Future of the Uplands in Wales*. Cardiff: Institute of Welsh Affairs.

Mikóczy, E. (2016): Oravecz Tamás: A magyar dinnye jövőjét veszélyezteti a nyomottan alacsony felvásárlási ár. Békéscsabai Médiacentrum. [on-line] URL

http://www.behir.hu/2016/07/29/oravecz-tamas-magyar-dinnye-jovojetveszelyezteti-nyomottan-alacsony-felvasarlasi-ar [accessed 21/09/2016].

Mitchell, T. (2002): *Rule of experts: Egypt, Technopolitics, Modernity*. Berkeley: University of California Press.

Mohan, G. & Mohan, J. (2002): Placing social capital. *Progress in Human Geography*, 26(2): 191-210.

Moles, K (2009): *Deep rural localities*. [Project Report]. Cardiff: Welsh Assembly Government.

Molnár B., Szalai F., Nagy L. (1960): *A dinnye termesztése*. Budapest: Mezőgazdasági Kiadó.

Monod, J. (1997): *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology*. New York: Vintage Books.

Morgan, S. L., Marsden, T., Miele, M., Morley, A. (2010): Agricultural multifunctionality and farmers' entrepreneurial skills: a study of Tuscan and Welsh farmers. *Journal of Rural Studies*, 26(2): 116-29.

Morrissey, S. & Reser, J. (2007): Natural disasters, climate change and mental health considerations for rural Australia. *Australian Journal of Rural Health*, 15: 120-125.

Morrow, V. (1999): Conceptualising social capital in relation to the well-being of children and young people: a critical review. *Sociological Review*, 47: 744–66.

Muller, M. (2015): Assemblages and Actor-networks: Rethinking socio-material power, politics and space. *Geography Compass*, 9(1): 27-41.

Murdoch, J. (1994): Some comments on 'nature' and 'society' in the political economy of food. *Review of International Political Economy*, 1: 571-577.

Murdoch, J. (1997): Inhuman/nonhuman/human: actor-network-theory and the prospects for a nondualistic and symmetrical perspective on nature and society. *Environment and Planning D: Society and Space*. 15: 731-756.

Nagy J. (1997): *Dinnye uborka, tök*. Budapest: Mezőgazdasági Szaktudás Kiadó.

Nagy J. (2000): *A dinnye és termesztése*. Budapest: Mezőgazdasági Szaktudás Kiadó.

Nancy, J. (1991): *The Inoperative Community*. Minneapolis: University of Minnesota Press.

Narayan, D. (1999). *Bonds and Bridges: Social Capital and Poverty*. Washington: World Bank, Report no. 2167.

Nealon, J. T. (2015): *Plant Theory: Biopower and Vegetable Life*. Stanford: Stanford University Press.

Newby, H. (1987): *Emergent issues in theories of agrarian development*. Arkleton Trust Occasional Paper. Arkleton Trust.

Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., Pfefferbaum, R. (2008): Community resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness. *American Journal of Community Psychology*, 41: 127-150.

Norton, B. G. (1998): Improving ecological communication: the role of ecologists in environmental policy formation. *Ecological Applications*, 8(2): 350-364.

Olwig, K. R. (2013): Heidegger, Latour and the reification of things: the inversion and spatial enclosure of the substantive landscape of things – the Lake District case. *Geografiska Annaler: Series B, Human Geography*, 95(3): 251-273.

Paasi, A. (2004): Place and region: looking through the prism of scale. *Progress in Human Geography*, 28(4): 536-546.

Pahl, R. (1966): The Rural-Urban Continuum. *Sociologia Ruralis*, 6(3): 299-329.

Pahl, R. (1984): *Divisions of Labour*. Oxford: Basil Blackwell.

Pahl, R. (2005): Are all communities communities in the mind? *Sociological Review*, 53: 621-640.

Paine, R. P. B. (1982): *Dam a river, damn a people?* IWGIA Document, 45, Copenhagen: IWGIA.

Panelli, R. & Welch, R. (2005): Why community? Reading difference and singularity with community. *Community Environment and Planning A*, 37: 1589-1611.

Parr, A. (2005): *The Deleuze dictionary*. Edinburgh: Edinburgh University Press.

Pearce, D. & Williams, E. (eds.) (2010): *Seeds for Change: Action Learning and Innovation*. Aberystwyth: Menter a Busnes.

Pearce, F. (2015): *The New Wild: Why invasive species will be nature's salvation*. Boston: Beacon Press.

Pendall, R., Foster, K. B., Cowell, M. (2010): Resilience and regions: building understanding of the metaphor. *Cambridge Journal of Regions, Economy and Society*, 3: 71-84.

Perkins, D., Hughey, J., Speer, P. (2002): Community psychology perspectives on social capital theory and community development practice. *Journal of the Community Development Society*, 33: 33-52.

Perkins-Veazie, P., Collins, J. K., Davis, A. R., Roberts, W. (2006): Carotenoid content of 50 watermelon cultivars. *Journal of Agricultural Food Chemistry*, 54: 2593-2597.

Peterson, A. L. (2001): *Being Human: Ethics, Environment, and Our Place in the World*. Berkeley: University of California Press.

Pfefferbaum, B., Reissman, D., Pfefferbaum, R., Klomp, R., Gurwitch, R. (2005): Building resilience to mass trauma events. In: Doll, L., Bonzo, S., Mercy, J., Sleet, D. (eds.): *Handbook on injury and violence prevention interventions*. New York: Kluwer Academic Publishers.

Phillips, J. (2006): Agencement/Assemblage. *Theory, Culture & Society*, 23(2-3): 108-109.

Phillips, M. (1998): The restructuring of social imaginations in rural geography. *Journal of Rural Studies*, 14: 121-153.

Philo, C. & Wolch, J. (1998): Through the geographical looking glass: Space, place and society-animal relations. *Society and Animals*, 6(2):103-118.

Philo, C. & Wilbert, C. (2000): Animal spaces, beastly places. In: Philo, C. & Wilbert, C. (eds.): *Animal Spaces, Beastly Places*. London: Routledge.

Pike, A., Dawley, S., Tomaney, J. (2010): Resilience, adaptation and adaptability, Cambridge Journal of Regions, *Economy and Society*, 3(1): 59-70.

Polanyi, K. (1944): *The great transformation*. New York: Farrar & Rinehart.

Portes, A. (1998): Social Capital: its origins and applications in modern sociology. *Annual Review of Sociology*, 24: 1-24.

Portes, A. & Landolt., P. (1996): Unsolved mysteries: the Tocqueville files II. *The American Prospect*, pp. 718-721.

Potter, C. & Lobley, M. (1993): Helping small farms and keeping Europe beautiful: A critical review of the environmental case for supporting the small family farm. *Land Use Policy*, 10(4): 267-279.

Powys County Council (2015): Powys Local Development Plan 2011 – 2026 (Deposit draft). Llandrindod Wells: Powys County Council.

Pritchard, B., Burch, D., Lawrence, G. (2007): Neither "family" nor "corporate" farming: Australian tomato growers as farm family entrepreneurs. *Journal of Rural Studies*, 23(1): 75-87.

Proctor, A., Donaldson, A., Phillipson, J., Lowe, P. (2012): Field expertise in rural land management. *Environment and Planning A*, 44: 1696-1711.

Putnam, R. (1993a): *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.

Putnam, R. (1993b): The prosperous community. *The American Prospect*, 4(13): 35-42.

Putnam, R., (2000): *Bowling Alone – the Collapse and Revival of American community*. New York: Touchstone Books.

Quarantelli, E. (1989): Characteristics of citizen groups which emerge with respect to hazardous waste sites. In: Peck, D. (ed.): *Psychosocial effects of hazardous toxic waste disposal on communities*. Springfield: Charles C Thomas Publisher, pp. 177-195.

Rapport, N. (1993): *Diverse World Views in an English Village*. Edinburgh: Edinburgh University Press.

Reed, E. (1988): The affordances of the animate environment: social science from the ecological point of view. In: Ingold, T. (ed.): *What is an Animal?* London: Unwin Hyman, pp. 110-26.

Rees, A. D. (1950): *Life in a Welsh Countryside*. Cardiff: University of Wales Press.

Rex, J. & Moore, R. (1967): *Race community and conflict: a study of Sparkbrook*. London: Oxford University Press

Rhoads, D. (1994): Resiliency research: An exploration of successful coping patterns. The student monography: Original articles by Student Gammans. *Eta Sigma Gamma Monograph Series*, 12(1): 50-58.

Riley, M. (2011): Turning farmers into Conservationists? Progress and prospects. *Geography Compass*, 5 (6): 369-389.

Risan, L. C. (2005): The boundary of animality. *Environment and Planning D:Society and Space*, 23: 787-793.

Rival, L. (2009): *The resilience of indigenous intelligence*. In: Hastrup, K. (ed.): The Question of Resilience: Social Responses to Climate Change. Viborg: Det Kongelige Danske Videnskabernes Selskab, pp. 293-313.

Rivera, G. & Cox, A-M. (2016): An Actor-Network Theory perspective to study the non-adoption of a collaborative technology intended to support online community participation. *Academia Revista Latinoamericana de Administracion*, 29(3): 347-365.

Robbins, P. (2007): *Lawn people: How grasses, weeds, and chemicals make us who we are*. Philadelphia: Temple University Press.

Roberts, K. (2014): Independent Review into the Resilience of Farming in Wales. [on-line] URL http://gov.wales/docs/drah/publications/140128reviewresiliencewelshfarmingen.pdf [accessed 29/2/2016].

Rodgers, C. P. (2013): *The Law of Nature Conservation*. Oxford: Oxford University Press.

Rodgers, C. P., Straughton, E. A., Winchester, A. J. L., Pieraccini, M. (2011): *Contested Common Land: Environmental Governance Past and Present*. London: Earthscan.

Rodin, J. (2014): *The resilience dividend: Being strong in a world where things go wrong*. New York: Rockefeller Foundation.

Rose, G. (1997): Performing inoperative community: the space and the resistance of some community projects. In: Pile, K. & Keith, M. (eds.): *Geographies of Resistance*. London: Routledge, pp. 184-202.

Ross, H. & Berkes, F. (2013): Community resilience: a rejoinder to Debra J. Davidson. *Society & Natural Resources*, 26(1): 25-29.

Ross, H. & Carter, R. W. (2011): Natural disasters and community resilience. *Australasian Journal of Environmental Management*, 18(1): 1-5.

Ross, H., Cuthill, M., Maclean, K., Jansen, D., Witt, B. (2010): *Understanding, enhancing and managing for social resilience at the regional scale: opportunities in North Queensland. Report to the Marine and Tropical Sciences Research Facility*. Cairns: Reef and Rainforest Research Centre Limited.

Rothstein, B. (2005): *Social traps and the problem of trust*. Cambridge: Cambridge University Press.

Ruhl, J. B. (2011): General design principles for resilience and adaptive capacity in legal systems - with applications to Climate Change Adaptation. *North Carolina Law Review*, 89(5): 1373-1403.

Rutland, T. & Aylett, A. (2008): The work of policy: actor networks, governmentality, and local action on climate change in Portland, Oregon. *Environment and Planning D: Society & Space*, 26: 627-646.

Rutter, M. (1979): *Protective factors in children s responses to stress and disadvantage*. In Kent, M. W. & Rolf, J. E. (eds.): Primary prevention in psychopathology: social competence in children. Hanover: University Press of New England, pp. 49-74.

Rutter, M. (1990): *Psychosocial resilience and protective mechanisms*. In: Rolf, J., Masten, A. S., Cicchetti, D., Neuchterlein, K. H., Weintraub, S. (eds.): Risk and

protective factors in the development of psychopathology. New York: Cambridge University Press, pp. 181-214.

dos Santos, F. T. & Partidario, M. R. (2011): SPARK: Strategic Planning Approach for Resilience Keeping. *European Planning Studies*, 19(8): 1517-1536.

Salamon, S. (2003): *Newcomers to Old Towns: Suburbanization of the Heartland*. Chicago: University of Chicago Press.

Salazar, C. (1995): From contract to status: an ethnography of farm work in the West of Ireland. *Sociologia Ruralis*, 35(2): 173-186.

Sassen, S. (2008): Neither global nor national: novel assemblages of territory, authority and rights. *Ethics & Global Politics*, 1(1-2): 61-79.

Savage, M., Bagnall, G., Longhurst, B. (2005): *Globalization and belonging.* London: Sage.

Sayer, R. A. (1984): Method in social Science: a realist approach. London: Hutchinson.

Schwind, K. (2009): *Community Resilience Toolkit. A Workshop Guide for Community Resilience Planning*. Oakland: Bay Localize.

Scott, M. (2013): Resilience: a Conceptual Lens for Rural Studies? *Geography Compass*, 7(9): 597-610.

Serageldin, I. (1996): Sustainability as Opportunity and the Problem of Social Capital. *Brown Journal of World Affairs*, 3: 187-203.

Seres A., Felföldi J., Szabó M. (2011): Hazai zöldség-gyümölcs TÉSZ-ek kisarutermelőket integraló szerepe a nagy kereskedelmi láncoknak történő értékesítésben. *Gazdálkodás*, 55(3): 266-284.

Seres A., Felföldi J., Juhász A., Kozak A., Szabó M. (2012): *A zöldséggyümölcs kisárutermelők, a TÉSZ-ek és a nagy kereskedelmi láncok kapcsolatai*. Budapest: Agroinform Kiadó.

Seymour, M. & Wolch, J. (2010): "A Little Bird Told Me...": Approaching Animals Through Qualitative Methods. In: DeLyser, D. (ed.): *The Sage Handbook of Qualitative Geography*. London: Sage, pp. 305-320.

Shaw, K. (2012): "Reframing" resilience: challenges for planning theory and practice. *Planning Theory & Practice*, 13: 208-312.

Sheehan, R. & Vadjunec, J. M. (2012): Placing community through actor-network theory in Oklahoma's 'No Man's Land'. *Social & Cultural Geography*, 13(8): 915-936.

Sherrieb, K., Norris, F. H., Galea, S. (2010): Measuring capacities for community resilience. *Social Indicator Research*, 99: 227-247.

Shortall, S. (1992): Power analysis and farm wives: an empirical study of the power relationships affecting women on Irish farms. *Sociologia Ruralis*, 32(4): 431-451.
Shortall, S. (2004): Social or Economic Goals, Civil Inclusion or Exclusion? An analysis of rural development theory and practice. *Sociologia Ruralis*, 44 (1): 109-123.

Shortall, S. (2008): Are rural development programmes socially inclusive? Social inclusion, civic engagement, participation, and social capital: exploring the differences. *Journal of Rural Studies*, 24: 450-457.

Shucksmith, M. (2000): Endogenous development, capacity building and social inclusion : perspectives from the UK experience of LEADER. *Sociologia Ruralis*, 40(2): 208-218.

Shucksmith, M. (2010): Disintegrated rural development? Neo-endogenous rural development, planning and place-shaping in diffused power contexts. *Sociologia Ruralis*, 50: 1-14.

Shucksmith, M. (2012): *Future Directions in Rural Development?* Dunfermline: Carnegie UK Trust.

Silk, J. (1999): The dynamics of community, place, and identity. *Environment and Planning A*, 31(1): 5-17.

Skerratt, S. (2013): Enhancing the analysis of rural community resilience: evidence from community land ownership. *Journal of Rural Studies*, 31: 36-46.

Skerratt, S. & Steiner, A. (2013): Working with communities-of-place: complexities of empowerment, *Local Economy*, 28 (3): 320-338.

Smith, D. W. (2012): *Essays on Deleuze*. Edinburgh: Edinburgh University Press.

Smith, E. & Marsden, T. K. (2004). Exploring the 'limits to growth' in UK organics: beyond the statistical image. *Journal of Rural Studies*, 20(3): 345-357.

Sontag, S. (1978): *Illness as a metaphor*. Middlesex: Penguin.

Srnicek, N. (2007): *Assemblage Theory, Complexity and Contentious Politics – The Political Ontology of Gilles Deleuze*. Unpublished Master's Thesis, London: University of Western Ontario.

Stacey, M. (1969): The myth of community studies. *British Journal of Sociology*, 20(2): 134-147.

Star, S. L., & Griesemer, J. R. (1989): Institutional ecology, 'translations,' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-1939. *Social Studies of Science*, 19: 387-420.

Steiner, A. & Markantoni, M. (2014): Exploring Community Resilience in Scotland through Capacity for Change. *Community Development Journal*, 49(3): 407-425.

Stenning, A. & Hörschelmann, K. (2008): History, Geography and Difference in the Postsocialist World: Or, Do We Still Need Post-Socialism? *Antipode*, 40(2): 312-335.

Stirling, A. (2007): A general framework for analysing diversity in science, technology and society. *Journal of the Royal Society Interface*, 4: 707-719.

Stirling, A. (2014): From Sustainability, through Diversity to Transformation: Towards More Reflexive Governance of Vulnerability. In: Hommels, A., Mesman, J., Bijker, W. (eds.): *Vulnerability in Technological Cultures: New Directions in Research and Governance*. Cambridge: MIT Press, pp. 305-332.

Suess-Reyes, J. & Fuetsch, E. (2016): The future of family farming: A literature review on innovative, sustainable and succession-oriented strategies. *Journal of Rural Studies*, 47: 117-140.

Sutherland, L-A., Burton, R. J. F., Ingram J., Blackstock, K., Slee, B., Gotts N. (2012): Triggering change: Towards a conceptualisation of major change processes in farm decision-making. *Journal of Environmental Management*, 104: 142-151.

Svendsen, G. L. H. (2006): Studying Social Capital in situ: a qualitative approach. *Theory and Society*, 35(1): 39-70.

Svendsen, G. L .H. & Svendsen, G. T. (2003): On the wealth of nations: Bourdieuconomics and social capital. *Theory and Society*, 32: 607-31.

Svendsen, G. T. & Svendsen, G. L. H. (eds.) (2009): *The Handbook of Social Capital*. Cheltenham: Edward Elgar.

Swyngedouw, E. (1997): Neither global nor local: 'glocalization' and the politics of scale. In: Cox, K. (ed.): *Spaces of globalization: reasserting the power of the local*. New York: Guilford Press, pp. 137-166.

Szabó, F. (ed.) (1993): *Medgyesegyháza 1893-1993. Tanulmányok a nagyközséggé alakulás centenáriuma tiszteletére*. Medgyesegyháza: Medgyesegyháza Nagyközség Polgármesteri Hivatala.

Szabó, G. G. (2009): The importance and role of trust in agricultural producer owned organizations. Conference on "Transition in Agriculture – Agricultural Economics in Transition VI". Institute of Economics, Hungarian Academy of Sciences, Budapest, 6-7 November, 2009.

Szabó, G. G. (2012): *Support for Farmers' Cooperatives; Case Study Report: Performance and sustainability of new emerging cooperatives in Hungary*. Wageningen: Wageningen UR.

Szamosi, Cs. (2005): Dinnyefélék szaporítása. *Kertészet és Szőlészet*, 54(18): 21.

Szarvas, Sz. (2011): Az összefogás megmentheti a magyar dinnyepiacot. [on-line] URL http://gazdakor.agro.hu/index.php?id=90&tx_ttnews%5Btt_news%5D=793 [accessed 3/3/2016].

Szreter, S. & Woolcock, M. (2004): Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*, 33(4): 650-667.

Taylor, C. (2006): Return to Akenfield: Portrait of an English Village in the Twenty-First Century. London: Granta.

Taylor, R., Jones, A., Edwards-Jones, G. (2010): *Measuring holistic carbon footprints for lamb and beef farms in the Cambrian Mountains Initiative*. CCW Policy Research Report No. 10/8.

Takács I, Takácsné György K., Baranyai Zs. (2012): The role of trust in cooperation between farmers – The outcomes of a survey in Bekes county. *Applied Studies in Agribusiness and Commerce*, 6: 813-840.

The Conservative Party (2010): *Big Society, Not Big Government: Building a Big Society*. London: Conservatives.

Thrift, N. (1996): *Spatial Formations*. London: Sage.

Thrift, N. (1997): The still point: resistance, expressive embodiment and dance. In: Pile, S. & Keith, M. (eds.): *Geographies of Resistance*. London: Routledge, pp. 124-151.

Thrift, N. (2000a): Afterwords. *Environment and Planning D: Society and Space*, 18: 213-255.

Thrift, N. (2000b): Dead or alive? In: Cook, I. Crouch, D. Naylor, S., Ryan, J. (eds.): *Cultural Turns/Geographical Turns: Perspectives on Cultural Geography*. Harlow: Prentice-Hall, pp. 1-6.

Tierny, K. (2015): Resilience and the neoliberal project: Discourses, critiques, practices –and Katrina. *American Behavioral Scientist*, 59(10):1327-1342.

Tönnies, F. (1940): *Fundamental Concepts of Sociology (Gemeinschaft und Gesellschaft)*. New York: American Book Co.

Tregear, A. & Cooper, S. (2016): Embeddedness, social capital and learning in rural areas: The case of producer cooperatives. *Journal of Rural Studies*, 44: 101-110.

Ungar M. (2004): A Constructionist Discourse on Resilience: Multiple Contexts, Multiple Realities among At-Risk Children and Youth. *Youth Society*, 35: 341.

Ungar, M., Brown, M., Leibenberg, L., Cheung, M., Levine, K. (2008): Distinguishing differences in pathways to resilience among Canadian youth. *Canadian Journal of Community Mental Health*, 27: 1-13.

Uphoff, N. (1999): Understanding Social Capital: Learning from the Analysis and Experiences of Participation. In: Dasgupta P. & Seregeldin, I. (eds.): *Social Capital: A Multifaceted Perspective*. Washington D.C.: World Bank, pp. 215-225.

Van der Ploeg, J. D. & Marsden, T. (eds.) (2008): *Unfolding Webs: the dynamics of regional rural development*. Assen: Van Gorcum.

Vandermeer, J. H. & Perfecto, I. (2012): Syndromes of production in agriculture: prospects for social-ecological regime change. *Ecology and Society*, 17(4): 39.

Varga, Zs. (2010): The post-Socialist transformation of land ownership in Hungary. In: Congost, R. & Santos, R. (eds.): *Contexts of Property in Europe. The Social Embeddedness of Property Rights in Land in Historical Perspective*. Turnhut: Brepols, pp. 267-285.

Vergunst, J., Arnason, A., Macityre, R., Nightingale, A. (2009): Using environmental resources.: Networks in food and landscape. In: Vergunst, J., Shucksmith, M., Arnason, A. (eds.): *Comparing Rural Development - Continuity and Change in the Countryside of Western Europe*. Farnham: Ashgate, pp.143-170.

Vergunst, J., Shucksmith, M., Arnason, A. (eds.) (2009): *Comparing Rural Development - Continuity and Change in the Countryside of Western Europe*. Farnham: Ashgate.

Vesala, H. T. & Vesala, K. M. (2010): Entrepreneurs and producers: identities of Finnish farmers in 2001 and 2006. *Journal of Rural Studies*, 26(1): 21-30.

Walker, B. (2012): A commentary on "Resilience and water governance: adaptive governance in the Columbia River Basin". *Ecology and Society*, 17(4): 29.

Walker, B. H., Gunderson, L. H., Kinzig, A. P., Folke, C., Carpenter, S. R., Schultz, L. (2006): A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society*, 11(1): 13.

Walker, J. & Cooper, M. (2011): Genealogies of resilience: From systems ecology to the political economy of crisis adaptation. *Security Dialogue*, 42: 143-160.

Wandersman, A. & Florin, P. (2000): Citizen participation and community organizations. In: Rappaport, J. & Seidman, E. (eds.): *Handbook of community psychology*. Dordrecht: Kluwer Academic Publishers, pp. 247-272.

Warren, K. J. (ed.) (1994): *Ecological Feminism*. London: Routledge.

Warren, R. (1963): *The community in America*. Chicago: Rand McNally.

Weber, M. (1976): *The Agrarian Sociology of Ancient Civilizations*. London: New Left Books.

Wellman, B. (1979): The community question. *American Journal of Sociology*, 84: 1201-1231.

Wellman, B., & Frank, K. (2001): Network capital in a multilevel world: Getting support from personal communities. In: Lin, N., Cook, K. & Burt R. (eds.): Social capital: Theory and research. New York: Aldine de Gruyter, pp. 233-273.

Welsh Assembly Government (2004): *Wales Spatial Plan*. Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2008): Ex Post Evaluation of the Rural Development Plan 2000-2006 (Ekos). Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2010): Mid Term Evaluation of the Wales Rural Development Plan 2007-13 (ADAS). Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2014): Wales Rural Development Plan 2014-2020. Cardiff: Welsh Assembly Government.

Welsh, M. (2013): Resilience and responsibility: governing uncertainty in a complex world. *Geographical Journal*, 180: 15-26.

Welsh Mountain Sheep Society webpage. [on-line] URL http://www.welshmountainsheep.co.uk/index.php/en/the-breed/cross-breeding [accessed 02/01/2016]

Werner, E. E., Bierman, J. M., French, F. E. (1971): *The Children of Kauai: A Longitudinal Study from the Prenatal Period to Age Ten*. Honolulu: University of Hawaii Press.

Whatmore, S. (1999): Rethinking the 'human' in human geography. In: Massey, D., Allen, J., Sarre, P. (eds): *Human Geography Today*. Cambridge: Polity Press, pp. 22-41.

Whatmore, S. (2002): *Hybrid Geographies: Natures, Cultures, Spaces*. London: Sage.

Whatmore, S. & Thorne, L. (1998): Wild(er)ness: reconfiguring the geographies of wildlife, *Transactions of the Institute of British Geographers*, 23(4): 435-54.

Whatmore, S. & Thorne, L. (1998): Wild(er)ness: Reconfiguring the geographies of wildlife. *Transactions of the Institute of British Geographers*, 23(4): 435-454.

Wilding, N. (2011): *Exploring community resilience in times of rapid change*. Dunfermline: Fiery Spirits Community of Practice.

Wilkie, R. (2005): Sentient commodities and productive paradoxes: the ambiguous nature of human-livestock relations in Northeast Scotland, *Journal of Rural Studies*, 21: 213-230.

Wilkie, R. M. (2010): L*ivestock/deadstock: working with farm animals from birth to slaughter*. Philadelphia: Temple University Press.

Wilkinson, K. P. (1970): The Community as a Social Field. *Social Forces*, 48(3): 311-322.

Wilkinson, K. P. (1972): A Field-Theory Perspective for Community Development Research. *Rural Sociology*, 37(1): 43-52.

Williamson, O. (1975): *Markets and Hierarchies*. New York: Free Press.

Williamson, O. (1981): The Economics of Organization: The Transaction Cost Approach. *American Journal of Sociology*, 87: 548-77.

Wilson, G. A. (2007): *Multi-Functional Agriculture: A Transitional Perspective*. Wallingford: CABI.

Wilson, G. A. (2008): From 'weak' to 'strong' multifunctionality: conceptualizing farmlevel multifunctional transitional pathways. *Journal of Rural Studies*, 24, 367-383.

Wilson, G. A. (2010): Multifunctional 'quality' and rural community resilience. *Transactions of the Institute of British Geographers*, 35 (3): 364-381.

Wilson, G. A. (2012a): *Community Resilience and Environmental Transitions*. London: Routledge.

Wilson, G. A. (2012b): Community resilience, globalization, and transitional pathways of decision-making. *Geoforum*, 43(6): 1218-1231.

Wilson, G. A. (2013): Community resilience, policy corridors and the policy challenge. *Land Use Policy*, 31: 298-310.

Wolch, J. & Emel, J. (eds.) (1998): *Animal Geographies*. London: Verso.

Wolcott, H. F. (1994): *Transforming Qualitative Data: Description, Analysis, and Interpretation*. London: Sage.

Woods, M. (1998): Mad cows and hounded deer: political representations of animals in the British countryside. *Environment and Planning A*, 30(7): 1141-1330.

Woods, M. (1998): Researching rural conflicts: Hunting, local politics and actornetworks. *Journal of Rural Studies*, 14(3): 321-340.

Woods, M. (2000): Fantastic Mr. Fox? Representing animals in the hunting debate. In: Philo, C. & Wilbert, C. (eds.): *Animal Spaces, Beastly Places*. London: Routledge, pp. 182-202.

Woods, M. (2005): *Rural Geography: Processes, Responses and Experiences in Rural Restructuring*. London: Sage.

Woods, M. (2007): Engaging the rural countryside: Globalization, hybridity and the reconstitution of rural place. *Progress in Human Geography*, 31: 485-508.

Woods, M. (2015): Global Economic Restructuring and Place: Nambour in the Global Sugar Assemblage. Manuscript. Trans-Atlantic Rural Research Network (TARRN) Conference, 17-21 May 2015, State College, Pennsylvania, USA.

Woods, M. (2016): Territorialisation and the assemblage of rural place: Examples from Canada and New Zealand. In: Dessein, J., Battaglini, E., Horlings, L. (eds.): *Cultural Sustainability and Regional Development: Theories and practices of territorialisation*. Abingdon: Routledge, pp. 29-42.

Woods, M. (2016): Newtown and the World: Everyday globalisation in a Powys town. 2016 J.D.K. Lloyd Lecture to the Powysland Club, Newtown, May 2016.

Woods, M. & McDonagh, J. (2011): Rural Europe and the world: Globalization and rural development. *European Countryside*, 3(3): 153-163.

Woolcock, M. (1998): Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework. *Theory and Society*, 27(2): 151-208.

Woolcock, M. (2001): The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research*, 2(1): 11-17.

Wrong, D. (1961): The oversocialized conception of man in modern sociology. *American Sociological Review*, 26: 183-93.

Wynne-Jones, S. (2013): Connecting payments for ecosystem services and agrienvironment regulation: An analysis of the Welsh Glastir Scheme. *Journal of Rural Studies*, 31: 77-86.

Yarwood, R. & Evans, N. (2000): Taking stock of farmanimals and rurality. In: Philo, C. & Wilbert, C. (eds.): *Animal Spaces, Beastly Places*. London: Routledge.

Zautra, A., Hall. J. S., Murray, K. (2010): *Resilience: a new definition of health for people and communities*. In: Reich, J. W., Zautra, A. J., Hall, J. S. (eds.): *Handbook of adult resilience*. New York: Guildford Press, pp. 3-34.

APPENDICES

Appendix 1

Table 1. List of cases when participant observation method was applied out as part of the research

Id	Date	Location	Category
Watermelon producing community, Hungary			
1	01.07.2013	Medgyesegyháza	Watermelon festival
2	02.07.2013	Medgyesegyháza	Watermelon loading
3	10-14.08.2013	Kétegyháza	Watermelon picking
4	19.06.2014	Csányoszró	Watermelon season opening session
Upland farming community, Wales			
1	04.04.2014	Tal-y-bont	Sheep inspection
2	10., 24.05.2014	Aberystwyth	Lovesgrove sheep market
3	12.07.2014	Cwmystwyth	Sheep gathering
4	21.07.2014	Builth Wells	Royal Welsh show
5	03.09.2014	Dolgellau	Farming Connect Hill Farmers Forum
6	07.10.2014	Aberystwyth	CMI Board Meeting

Appendix 2

Table 2. List of interviews carried out as part of the research

Id	Date	Location	Category	Post	Voice recording
Watermelon producing community, Hungary					
1	05.07.2013	Medgyesegyháza	expert/farmer	local decision maker, previously watermelon farmer	y
2	16.08.2013	Kétegyháza	farmer	seasonal worker	n
3	23.09.2013	Szolnok	expert	seed supplier	y
4	24.09.2013	Medgyesegyháza	farmer	farmer, previously watermelon farmer	y
5	25.09.2013	Medgyesegyháza	farmer	watermelon farmer	n
6	25.09.2013	Medgyesegyháza	farmer	previously watermelon farmer	y
7	01.10.2013	Budapest	expert	representative of FruitVeB	y
8	09.10.2013	Medgyesegyháza	farmer	trader	y
9	11.10.2013	Medgyesegyháza	farmer	watermelon farmer	y
10	14.10.2013	Dombegyháza	farmer	watermelon farmer, coop leader	n
11	14.10.2013	Medgyesegyháza	farmer	watermelon farmer, local administration	y
12	14.10.2013	Medgyesegyháza	farmer/expert	watermelon farmer, coop leader	y
13	15.10.2013	Nagykamarás	farmer	watermelon farmer	y
14	16.10.2013	Medgyesegyháza	farmer	watermelon farmer	y
15	16.10.2013	Medgyesegyháza	farmer	watermelon farmer	y
16	11.11.2013	Medgyesegyháza	expert	local admisitration	y
17	12.11.2013	Medgyesegyháza	farmer	trader, previously watermelon farmer	y
18	14.11.2013	Medgyesegyháza	farmer	watermelon farmer	y
19	14.11.2013	Medgyesegyháza	farmer	watermelon farmer, pressure group leader	n
20	07.03.2014	Budapest	expert	academic	y
21	10.06.2014	Kunágota	farmer	watermelon farmer	y
22	24.06.2014	Medgyesegyháza	expert	local administration	n
23	03.02.2016	Medgyesegyháza	farmer	peanut farmer	y

		Upland farming community, Wales			
1	04.04.2014	Tal-y-bont	farmer	lowland farmer	y
2	19.05.2014	Gogerddan	expert	FUW administration	y
3	20.05.2014	Aberystwyth	expert	academic	y
4	20.05.2014	Cwmystwyth	farmer	upland farmer, CMI administration	y
5	22.05.2014	Machynlleth	expert	CMI administration	y
6	17.07.2014	Cwmystwyth	farmer	upland farmer, CMI administration	y
7	04.08.2014	Rhayader	farmer	upland farmer	y
8	10.09.2014	Aberystwyth	farmer/expert	lowland farmer, CMI administration	y
9	23.09.2014	Tregaron	n.a.	tourism provider	n
10	25.09.2014	Aberystwyth	expert	NGO	n
11	08.10.2014	Aberystwyth	expert	Farming Connect administration	y
12	30.10.2014	Aberystwyth	expert	Agrisgop administration	y
13	10.11.2014	Aberystwyth	expert	CMI administration	y
14	14.11.2014	Llanddewi Brefi	farmer	upland farmer, CMI administration	y
15	?	Tal-y-bont	farmer	upland farmer, CMI member	y
16	19.11.2014	Aberystwyth	expert	Meat Promotion Wales administration	y
17	20.11.2014	Ponterwyd	farmer	upland farmer, CMI member	y
18	?	Cwmystwyth	farmer	upland farmer	y
19	24.11.2014	Llanddewi Brefi	farmer	upland farmer, CMI member	y
20	26.11.2014	Tal-y-bont	farmer	upland farmer, CMI member	y
21	03.11.2014	Aberystwyth	expert	academic	y
22	12.15.2014	Aberystwyth	expert	CMI administration	y
23	04.02.2015	Gogerddan	expert	CMI administration	y
24	27.02.2015	Aberystwyth	farmer	lowland farmer, local administration	y
25	06.12.2015	Tal-y-bont	farmer/ expert	Upland farmer, Welsh Mountain Sheep Society Ceredigion Representative	y

Appendix 3

Topics and questions the research was focusing on in the first phase of data collection

Personal history and feelings about rural development policies:

- personal history - belonging, attachment to the land, farming and the community;
- feelings regarding the wider political and economic processes surrounding farming;
- feelings regarding the changing farming practices and reasons behind the processes;
- feelings regarding the changing landscape - changes in land use, impacts of climate change;
- feelings regarding changing community spirit – opinion on newcomers, commuters, role of the local chapel, the local market, community gatherings and festivals etc.;
- membership in cooperatives, associations, clubs, interest groups or informal groups;
- feelings regarding taking part in formal cooperation – reasons for joining/not joining the cooperatives and the Watermelon Alliance/Cambrian Mountains Initiative;
- opinion about greening, cross-compliance, agri-environment schemes and ecosystem services / what measures these meant in practice (taking part in such activities and in Wales whether this was Cambrian Mountains ESA, Tir Mynydd, Tir Cynnal, Tir Gofal, or Glastir);
- opinion about the current CAP reform and other policies affecting farmer lives.

Appendix 4

Topics and questions the research was focusing on in the second phase of data collection

Farming community, land and agricultural produce and policies:

I.) Farming and community
- definition of a farmer
- feelings attached to being a 'farmer' – the limits of still being considered a farmer although not producing food
- options for diversifying activities beyond farming – occupation beyond watermelon/sheep production (food producer/land manager/tourism provider etc.)
- imagined role in society - the role of a watermelon/sheep farmer,
- feelings about the changing community spirit (newcomers, commuters, role of the local chapel, the local sheep market, community gatherings and festivals etc.),
- farming practices (human resources and labour force at the farm; the role of family members, neighbours, contractors, sharing economy).

II.) Land and agricultural produce
- land ownership (private ownership, rent, common),
- feelings about what is considered a good practice of land use (food, ecosystem services, energy production),
- feelings about changing landscape (intensification, afforestation, windfarms, crops, land use change),
- breeds produced on the farm (what the characteristics of the watermelon/lamb breed produced on the farm are and why it is beneficial to concentrate on these types).

III.) Policies
- the types of documentation carried out about the farmland, human resources and produce / the organisations provided with information and the type of this data,

- institutions, administrative bodes the farmer is in direct connection with via farm experts / rural managers,
- opinion about policies influencing land use and farming– incentives influencing markets, ecological regulations and incentives.

Appendix 5

The framework of the Cambrian Mountains Farmers Community Interest Company

- Produce Marketing: In short, working with land managers and producers the aim is to add value to local produce through the development of a range of products of the Cambrian Mountains backed up by strong branding based on sustainable development principles (including the Cambrian Mountains Lamb Producer Group);

- Community Enterprise: Developing the resilience of local communities and the promotion of business development opportunities based around the natural resources of the region;

- Ecosystems: Valuing the local environment and the ecosystems goods and services that it provides, linked to the development of the brand messages of the Cambrian Mountains offer;

- Tourism: Promoting the development of the tourism offer of the region based around the special landscape and sense of place the area has to offer, and which again serves to under pin the Cambrian Mountains branding; and,

- Built Environment and Heritage: Working to promote understanding of the character and heritage of our communities and buildings, and new economically sustainable uses for heritage structures.

Appendix 6

The regulations of the Cambrian Mountains Lamb Group developed by the farmers (cambrianmountains.co.uk)

1. Lambs must be born and reared on the defined LFA of the Cambrian Mountains

2. Finishing is permitted on the above areas under the sole management of CMI members.

3. Members shall go through a 1 year probation period before gaining full membership.

4. Product distribution should take into consideration the number of 'food miles'

5. Only lambs from ewes of Welsh Mountain Lamb is eligible for CMI branding

6. Stock to be reared following extensive farming practices (natural mating only, only approved feeds permitted, no indoor finishing allowed, following the Welsh Chief Veterinary Officer's policies)

7. Members to be part of the Farm Assured Welsh Livestock scheme

8. Members to comply with Single Payment Scheme requirements

9. Members to be part of an Agri-Environment Scheme

10. Members to take part in knowledge transfer project

11. Members to seek renewable energy generation opportunities

12. Members to meet all the audit requirements of Cambrian Mountains Ltd.