



BUILDING MOVEMENTS FOR TRANSFORMATION:
DEFENDING AND ADVANCING AGROECOLOGY IN BRAZIL

LEONARDO VAN DEN BERG

PROPOSITIONS

1. When social movements emerge to oppose neo-liberal modernity, one must always consider the alternatives they are affirming.
(this thesis)
2. While transition works at the service of dominant institutional orders, transformation involves changing them.
(this thesis)
3. Economics should stimulate people and nature not to become dependent on but autonomous from the market.
4. The agricultural sciences should not only focus on knowledge production but also reflect on the ignorance they produce.
5. The model of the university as ivory tower was a bad idea; the model of the university as part of business empires is even worse.
6. A better society starts with cultivating solidarity with peasant, worker, environmental, Indigenous, Black, feminist, and other marginalised groups.

Propositions belonging to the PhD dissertation, entitled

Building movements for transformation: defending and advancing agroecology in Brazil

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in Brazil

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Contents

Chapter 1. General Introduction	1
1.1 Introduction	2
1.2 Sustainability transformation	4
1.3 Social movements and transformation	6
1.4 Agroecology and transformation	7
1.5 Research objectives and questions	8
1.6 Theoretical framework	9
1.7 Methodological design	14
1.8 Outline of thesis	17
Chapter 2. Reassembling nature and culture: Resourceful farming in Araponga, Brazil	19
2.1 Introduction	21
2.2 Resourceful farming: re-assembling 'nature-culture' in a threefold process	22
2.3 Methodology	23
2.4 Resourceful farming in Araponga: a threefold process of re-appreciation, re-grounding and re-positioning	24
2.5. Discussion and conclusion	33
Chapter 3. From managing transitions towards building movements of affect: advancing agroecological practices and transformation in Brazil	34
3.1 Introduction	36
3.2 Affect, social movements and transformation	37
3.3 Case description and methods	39
3.4 The emergence of agroecological practices in the Zona da Mata	39
3.5 Affect, social movements and transformation	44
3.6 Conclusion	47
Chapter 4. 'We go back to the land': Processes of repeasantisation in Araponga, Brazil	48
4.1 Introduction: political and theoretical significance of the Araponga settlement case	50
4.2 The Quest for Land	53
4.3 The quest for production sovereignty	57
4.4 Autonomy as a process	63
4.5 Conclusion	63
Chapter 5. Agroecological peasant territories: resistance and existence in the struggle for emancipation in Brazil	65
5.1 Introduction	67
5.2 Territories: resistance, existence and emancipation	68
5.3. Social movements and the Brazilian state	70
5.4. Resistance in the Zona da Mata, Minas Gerais	72
5. Discussion: peasant territories as sites of and bases for resistance and emancipation	78
5.6. Conclusion	80
Chapter 6. From scaling to building popular movements: the political articulation of agroecology in Brazil	82

6.1 Introduction	84
6.2 Transformation and political articulation	85
6.3 Case description and methodology	86
6.4 Articulating agroecology in Brazil	87
6.5 Scaling and articulation	92
6.6 Conclusion	93
Chapter 7. General discussion and conclusion	94
7.1 Transformation by the agroecology movement in Brazil	95
7.2 Sustainable transformation: from techno-institutional to emancipatory change	98
7.3 Social movements: from opposition to affirmation	99
7.4 Agroecological research collaborations	100
7.5 Building movements for transformation in Brazil and in the Netherlands	101
Summary	104
Acknowledgements	107
References	108

Chapter 1

General Introduction

1.1 Introduction

For several decades, wider societal transformation has been sought by new social movements. These movements, which include *buen vivir*, rights to nature, agroecology, commons, food sovereignty and environmental justice, are challenging neo-liberalism and advancing alternatives that reconnect society to nature and local communities. Many of these alternatives have been developed at the grassroots level. Some are believed to contain a basis that can be used for wider societal transformation. An example is agroecology, which has been developed in various localities across the world, and is now being promoted by international institutions (FAO 2018), governments (Gonzalez et al. 2018, Schmitt 2016), non-governmental organisations (OXFAM Solidarité 2014, Action Aid 2018) social movements (La Via Campesina 2017, Friends of the Earth 2018, Nyeleni 2017) and research institutions (Côte et al. 2018, IPES-Food 2016).

The interest in alternatives as a basis for transformation has been awakened by crises in climate, biodiversity, food, migration, resource degradation and pollution. These crises have been ascribed to the disconnection between society, nature and local communities, caused by two political trends. One of these trends is neo-liberalism which is promoted by national governments, multinational corporations and international organisations such as the World Bank, the International Monetary Fund and the World Trade Organisation through policies and regulations that foster privatisation, commodification, financial deregulation, decentralisation and trade liberalisation (Urry 2000, Davis 2004, Marsden 2009). As a result of these policies and regulations, people and nature have been disembedded from their locality to become part of, and partly subjected to, global commodity markets. These markets prioritize profit, competition and economic values, thereby displacing other forms of exchange, such as those based on reciprocity, cooperation and cultural and environmental values (Sabourin 2017, McMichael 2015). Another political trend is modernisation, which promotes policies, projects, technologies and management practices that divide nature and culture, humans and non-humans, the individual and the communal, and mind and body (Long 2001, Blakie 2000, Bauman 2003, Slater 2004, Escobar 2010, Haraway 1993). For instance, food production is separated from nature conservation, which is mostly seen as a matter of setting aside protected areas and protecting endangered species (Adams and Hutton 2007). As such, modernization excludes practices and knowledges that are based on a more unified, relational understanding of the world.

In agriculture, neo-liberalisation has led to the commodification of agricultural land, inputs, labour and products and their insertion into national or global markets (McMichael 2015). Modernisation has promoted technologies and technical prescriptions that include monocropping, specialisation, chemical fertilisers, improved seeds and agrochemicals (Van der Ploeg 2008). Ever since the start of the Green Revolution in the 1940s, research institutes and governments have engaged in a large-scale effort to push farmers to adopt modern technologies and become part of neo-liberal markets. This has led to the growth and concentration of agribusiness: companies that develop and sell agricultural inputs or agrochemicals, and which control processing, distribution and retail. In effect, agriculture and food production are now to a large extent shaped by commodity markets, agribusiness, and modern prescriptions rather than by local communities and their relation with nature.

While the neo-liberalisation and modernisation of agriculture has increased production in some places, it has also had negative impacts, including biodiversity loss (FAO 2019), land degradation (UNCCD 2017) and climate change (IPCC 2019). It has also been associated with negative societal trends including increasing economic inequality (Marsden 2009), food insecurity (Ghosh 2010), and public health risks (Brulle & Pellow 2006, Lang 2010). Finally, it has negatively impacted local farmers and communities through the degradation of their natural resources (UNCCD 2017), land concentration and grabbing (TNI 2016), debt and dependency among farmers (FAO 2017) and the 'pushing' of farm labour to cities (Bauman 2003, Davis 2004).

To address the negative impacts of agriculture and food production, both non-transformative and transformative initiatives and approaches have emerged (Escobar 2010, Temper et. al. 2018). Non-transformative initiatives and approaches continue to prioritise commodity markets and modern technologies, albeit in forms that are adapted to address environmental or societal concerns as well. They are non-transformative as they exclude other, non-modern and non-neo-

liberal ways of relating to people and nature. Non-transformative approaches include ecological modernisation (Horlings and Marsden 2011), climate smart agriculture (Taylor 2018) and the new green revolution (Holt-Giménez and Altieri 2013). Approaches such as these focus on technologies or management practices to increase resource use efficiency (e.g. fertiliser, pesticides and water), recycle waste or by-products and apply precision-agriculture technologies and biotechnologies. They also promote market incentives or market-correcting mechanisms such as sustainable certification schemes, corporate social responsibility and payments for ecosystem services. While non-transformative responses address some environmental concerns, they devote little attention to problems for which there is no market or to ecological practices that are not economically feasible (Horlings and Marsden 2011). Similarly, they largely ignore how commodity markets and technologies impact society and local populations, particularly issues of inequality, justice and democracy (Taylor 2018, Holt-Giménez and Altieri 2013, Norgaard 2010).

Transformative change challenges hierarchies of power that favour particular agents, knowledges and patterns of accumulation, and advances alternatives based on more horizontal relations between people and nature (Pelenc et al. 2019, Temper et al. 2017, Stirling 2015). In agriculture, transformative initiatives focus on practices shaped by processes of co-production between living farmers and living nature, and prioritise the use of farmers' own knowledge and the improvement of their own resource base, rather than the use of modern knowledge and resources (Van der Ploeg 2008). Examples include agroforests, indigenous breeds and varieties and soil fertility-enhancing measures. These initiatives also focus on the development of nested markets, where the interaction of producers and consumers is not only based on economic values, but also on cultural and ecological values such as taste, animal welfare, landscape and local traditions (Hebinck et al. 2015, Van der Ploeg et al. 2012). Examples include consumer cooperatives, local farmers' markets and community supported agriculture. While transformative initiatives have booked considerable successes at the local level, they devote less attention to processes of transformation at wider levels of society (see Escobar 2010, Van der Ploeg 2008, Wiskerke et al. 2003, for some notable exceptions).

Wider societal transformation has been sought by new social movements such as the agroecology, food sovereignty (Patel 2009), environmental justice (Temper and Martínez-Alier 2017, Martínez-Alier et al. 2016), climate justice (Chatterton et al. 2013) rights to nature (Apostolopoulou and Cortes-Vazquez 2018), degrowth (Demaria et al. 2013) and buen vivir (Gudynas 2011) movements, as well as movements of peasants and indigenous peoples (Borras et al. 2008, Edelman 2001). One can distinguish different domains where social movements engage in processes of transformation. A first domain is that of practice. Social movements engage with people and non-human others, including the soil, trees and micro-organisms, in efforts to construct alternative practices based on principles of agroecology (Rosset et al. 2018), solidary economy (Otsuki and Castro 2020) and commons (Varvarousis 2020). These practices are often developed through approaches that emphasise horizontality between different agents and knowledges, i.e. by way of peasant-to-peasant exchanges (Val et al. 2019), popular pedagogies (Meek et al. 2015) and dialogue of knowledges (Martínez-Torres and Rosset 2014).

A second domain of societal transformation is that of territories, geographical and socio-material spaces that resist neo-liberal modernization and that foster different ways of relating with people and nature (Escobar 2010, Fernandes 2008, Porto-Gonçalves 2006). Communities, peasant organisations, rural workers unions and non-governmental and activist organisations have allied into movements that support local struggles against land grabbing, pollution and deforestation by landlords, agribusiness, extractive industries, dams and large corporations (Prause and Le Billon 2020, Scheidel et al. 2020, Fernandes 2008). They also promote modes of farming (Rosset and Martínez-Torres 2012), marketing (Camacho and Cubas 2011, Pahnke 2015), education (Meek 2015) and land distribution (Stedile and Fernandes 2005) that resist modern, neo-liberal principles of competition, profit, individualism and control over nature, building instead on principles of cooperation, reciprocity, solidarity and respect for nature.

A third domain where social movements engage in transformation is the wider institutional and policy environment. Social movements negotiate with governments, research organisations and other institutional agents by participating in government-civil society councils or committees to request for policies, laws and regulations that support agroecology (Petersen 2013, Schmitt 2016); food sovereignty (Duncan 2015); and rights for women, peasants (Edelman et al. 2011) and Indigenous people (Wiessner 2008). Social movements also advance these issues by making

claims that challenge governments in a more systemic way. This is done through political declarations, demonstrations and acts of civil disobedience. An example is the Nyeleni declaration, which assembles the demands of over 500 social movements and organisations in a declaration that challenges corporate control over food systems (Nyeleni 2007).

While many studies have been conducted on the engagement of social movements within a particular domain, less is known about how social movements simultaneously engage in multiple domains for widespread transformation. The agroecology movement advances transformation in the domains of practice (Gliessman 2014), territory (Rosset and Martínez-Torres 2012) and the wider institutional environment (Molina et al. 2020, Giraldo and Rosset 2017). While the movement is active in different parts of the world, Brazil hosts one of the largest agroecology movements (Costa et al. 2017). Over the past 30 years, the agroecology movement in Brazil has supported the development of alternative practices in urban, temperate, tropical and semi-arid regions (ANA 2017). In these regions, alliances have been formed with researchers, NGOs and organisations of peasants and rural workers, to support territories that advance and defend peasant and agroecological alternatives (Schmitt 2016). Finally, the agroecology movement in Brazil has organised itself in state and national level networks and federations that bring together movements from different territories and other social movements to advocate support for certain policies, and to challenge other policies as well as the authority of the state (Costa et al. 2017, Petersen 2013).

This thesis seeks to gain a new understanding social movement transformation by focusing on the engagement of the agroecology movement in Brazil in the domains of practice, territory and the wider institutional environment. In the next section, I look at how transformation has been addressed in different academic debates. I focus on the literature on sustainability transformation, social movements and agroecology. I then identify knowledge gaps by analysing how this literature addresses transformation in the domains of practice, territory and the wider institutional environment. On the basis of the debates and gaps in the literature, the objectives and research questions of this thesis are formulated.

1.2 Sustainability transformation

The term 'sustainability transformation' has been gaining increasing attention over the past decades from researchers and policy makers. For instance, the Food and Agriculture Organisation of the United Nations (FAO 2018) and the Intergovernmental Panel on Climate Change (IPCC 2019) have stated that transformation in agriculture is necessary to achieve sustainable development goals and to combat climate change. In the literature, the term 'sustainability transformation' is used to describe various approaches including transformational adaptation, societal transformation and transition theory. Most of these approaches can be divided into two groups: socio-ecological or socio-technical system approaches (Smith and Stirling 2008). A third subset of the literature is more focused on issues of power, arguing that socio-ecological or socio-technical system approaches are not transformative as they do not challenge power structures, and proposing a more emancipatory approach to transformation (Pelenc et al. 2019, Temper et al. 2017, Stirling 2015).

Socio-ecological and socio-technical transformation approaches have some commonalities. Both understand the world in terms of complex, dynamic, multilevel systems, and both hold that processes of transformation can be steered. Furthermore, both emphasise processes of learning and experimentation and argue that changes in the relations, practices and institutions that underpin unsustainable socio-ecological systems are necessary for transformation to occur (Feola 2015, Westley et al. 2011, Foxon et al. 2008). These commonalities have led to efforts to combine the two approaches (e.g. Ahlborg et al. 2019, Fischer-Kowalski and Rotmans 2009). Social-ecological transformation approaches include progressive transformation, regime shifts, transformational adaptation and ecosystem services (Feola et al. 2015, Binder et al. 2013). These approaches have a strong ecological focus and draw on concepts and ideas from the study of resilience, adaptive governance and adaptive management (Folke et al. 2010). The goal of transformation lies in changing natural resource management practices and governance institutions so that they sustain nature for future generations (Chapin et al. 2009), foster the resolve to avoid ecological collapse (Folke et al. 2010, Holling 1973) or enhance the provision of

ecosystem services to society (Carpenter and Folke 2006). To reach these objectives, policy interventions that target management and governance practices are often proposed (Westley et al. 2011).

A widely used approach that falls within socio-ecological systems transformation is that of ecosystem services (Binder et al. 2013, Carpenter and Folke 2006). Ecosystem services are defined as the benefits that people derive from nature and are commonly divided into provisioning, regulating, supporting and cultural services (Sereke et al. 2015, Kremen and Miles 2012). The literature on ecosystem services focuses on management practices and their delivery of ecosystem services. Management practices are assessed by looking at how the services or disservices that they provide compete ('trade-offs') or complement ('synergies') with the services provided by other practices (Zhang et al. 2007, Kremen and Miles 2012). Transformation is fostered by following a series of steps (Kull et al. 2015, Primmer and Furman 2012). First, ecosystem services are identified, measured and mapped. Second, they are valued, which may involve processes of learning and stakeholder consultation. Third, outcomes are used to inform policies that provide incentives or set restrictions on particular ways of managing ecosystems. These may include conservation schemes or payment for ecosystem service programmes.

Socio-technical system approaches, on the other hand, have a strong focus on technological innovation. Approaches include the multi-level perspective, strategic niche management, transition management, innovation systems, techno-economic paradigm and socio-metabolic transitions (Lachman 2013, Rotmans and Loorbach 2007, Geels 2002). Socio-technical system approaches start from the premise that persistent problems are inherent to the socio-technical regime. The regime is made up of structure (organisations and institutions), culture (norms and behaviour) and practices (routine and skills). Persistent problems are addressed through socio-technical transitions, which are set in motion by developing innovations and building coalitions with government, private sector and civil society. Eventually, these coalitions implement policy and other incentives, that foster the use of green technologies or efficient eco-management practices.

An approach within the socio-technical system literature that specifically deals with the management of transitions is transition theory. Transition theory divides transition into different stages (Loorbach 2007, Kemp and Rotmans 2005). The first stage involves defining goals, transition pathways and niche experiments. This is often done by a transition coalition that consists of experts, government officials, civil society and business. The second stage involves creating niches, spaces where agents can experiment with innovations. Niches are supported by providing them with financial resources, people with particular skills, access to lobby mechanisms or exemption from particular regulations. 'Frontrunners', who are seen as creative minds, strategists and visionaries, play an important role in niche innovation and in creating linkages with and legitimacy within the dominant regime (Avelino and Wittmayer 2016, Rotmans et al. 2001). The third stage is the reconfiguration of the socio-technical regime through policies, infrastructure investments and market incentives that support the innovation.

While the interventions promoted by socio-technical and socio-ecological approaches address some sustainability concerns, political economist and post-structuralist scholars argue that they do little to promote transformative change (Pelenc et al. 2019, Temper et al. 2018, Kenis et al. 2016, Scoones 2016, Kull et al. 2015, Norgaard 2010, Smith and Stirling 2008). Instead, these approaches promote green-technologies, innovations and eco-management practices that reinforce neo-liberal markets and maintain patterns of economic marginalisation, social exclusion and environmental degradation (Norgaard 2010, Scoones 2016, Kull et al. 2015). Also, socio-technical or socio-ecological processes are often steered and managed by privileged agents. Citizens and other agents who are possibly affected by transformation, are excluded or only addressed in their role as consumers (Kenis et al. 2016). Finally, the search for solutions often relies on expert knowledge, while the knowledge of farmers, citizens and other people is excluded (Ollivier 2018).

To incorporate issues of power, scholars have begun to sketch some of the outlines for a more emancipatory approach to transformation (Pelenc et al. 2019, Temper et al. 2018, Scoones 2017, 2016, Stirling 2015). This approach builds on an understanding of transformation that exposes and problematises the ongoing reproduction of harmful power relations and focuses on more plural, emergent and political re-alignments. In turn, these challenge existing structures of power and promote alternatives based on more horizontal relations between people and nature. Some

of these scholars (Pelenc et. al 2019, Temper et. al. 2018) propose that the research on how social movements foster transformation can advance the development of an emancipatory approach. They argue that social movements, by definition, challenge unequal power relations, and increasingly engage with peasants, citizens or other people on the ground to address their problems and develop alternatives. In the next section, I look at how transformation is addressed in the literature on social movements.

1.3 Social movements and transformation

The previous section examined the literature on transformation and argued that transformational change entails challenging existing power structures and advancing emancipatory alternatives. This section looks at how transformation is addressed in the literature on social movements.

The literature on social movements has a long history which can be traced back to the 1960s. Social movement literature is commonly categorised as belonging to either old and new social movements, and both types are strongly shaped by the intellectual and political cultures in which they were developed (Welsh and Chesters 2011, Buechler 2016). Old social movement theory is strongly influenced by Liberal pluralism and originated in North America, where the civil rights movement demanded inclusion and rights within the existing framework of state and society (Welsh and Chesters 2011). The literature on new social movements draws on Marxist and post-structuralist traditions and originates from Europe, where social movements pursued more systemic and ideological challenges to the way state and society were organised.

The literature on old social movements focuses on motives of individuals for engaging in collective action. It includes social movement theories of collective behaviour, resource mobilisation and political opportunity (Buechler 2016). In the theory on collective behaviour, mobilisations are seen as irregular behaviour caused by individual grievances which result in built-up social strain and transitory outbursts of irrational behaviour at the mass level (e.g. Van Ness and Summers-Effler 2018, Ransan-Cooper 2018,). Resource mobilisation theory, on the other hand, sees mobilisations as rational organised activity in which ordinary individuals can legitimately engage (e.g. Lee 2015). Rational movement entrepreneurs make careful, strategic decisions based on calculation of costs and benefits as a means of acquiring particular resources. In political opportunity theory, movements are not seen as irrational mobs or outcomes of entrepreneurial calculation of resources, but as groups pursuing politics. Expanding political opportunities or political threats, such as the division between elites or diminishing capacities for repression, constitute the most important determinant of collective action (e.g. Prause and Le Billon 2020). While the literature provides insights on possible reasons for people to engage in processes of transformation, it views people's behaviour as deterministic, with mobilisations followed by irrational outbursts, political or resource opportunities. This approach excludes the role of peoples' lived experiences, affects and relations with nature, which may be important in motivating people to challenge existing power relations and advance emancipatory alternatives.

The 'new social movements' literature emerged from the 1960s onwards in response to classical Marxist theories of change, which could not explain new movements of peasants, women and students, or environmental and antinuclear causes (Aslandis 2015, Welsh and Chesters 2011). The constituencies of these movements consist of people that have been marginalised by more advanced phases of capitalist development and by those whose values and needs have begun to shift as a result of the changes brought about by neo-liberalism and modernity (Chesters and Welsh 2011, Della Porta and Diani 2006). Resistance and oppositional consciousness are seen as key to realising transformation. Transformation is sought outside of traditional civil society through an oppositional, rather than inclusive politics towards dominant institutions and the state (Aslandis 2015). This is also illustrated in more recent contributions to the literature on new social movements, many of which have come from political economy and post-structuralism. Scholars in political economy have focused on the engagement of social movements in material conflicts that result from the commoditization and neo-liberal appropriation of land (Wolford 2010), nature (Apostolopoulou and Cortes-Vazquez 2018), natural resources (Scheidel et al. 2020) and farming (Veltmeyer 2019). In post-structuralism, many scholars have focused on social movements as engagements between diverse groups that contest meaning imposed by neo-liberalism (Griggs and Howarth 2019, Nadal 2020, Stavrakakis and Katsambekis 2014).

The literature on new social movements focuses on opposition to neo-liberalism, but devotes less attention to the role of non-oppositional forces in shaping transformation processes (Edelman 2001). Non-oppositional forces are of particular importance in the construction of alternatives (Escobar 2016, Khoo 2015). In the next section, I look at how the literature addresses transformation in one such alternative, namely agroecology.

1.4 Agroecology and transformation

The previous section examined contributions to the literature on social movements. It showed that social movement theory addresses resistance to neo-liberalism. Yet, the literature pays less attention to the construction of alternatives for transformation. This section looks at how transformation is addressed in the literature on the alternative of agroecology.

The term agroecology was first coined by agronomists to denote an ecological alternative to the more chemically and mechanically oriented, industrial approach to agriculture (Méndez et al. 2013). Later, the term was also picked up by development workers to differentiate local ecological practices from those of Green Revolution. Agroecology was also adopted by peasant and other social movements to denote a more systemic struggle against the modernisations and neo-liberalisation of agriculture and food systems. As a result of these differences, agroecology has been termed as science, a practice and a movement (Wezel 2011).

The literature on agroecology can be divided into two subsets: technical and political (Molina et al 2020, Nicholls and Altieri 2018). Technical contributions focus on ecological farming practices, such as cover cropping, agroforestry, mulching, green manuring, and integrated pest management, which produce food while enhancing biodiversity, while conserving the complexity and multi-functionality of agricultural landscapes (Gliessman 2014). Some scholars also look at how agroecological practices can be developed and spread through agricultural extension, research and education. Gliessman (2014), for instance, defines a series of steps, ranging from the reduction of chemical inputs to agroecosystem redesign, for farmers to move from industrial to agroecological farming systems. In a similar vein, Nicholls and Altieri (2018) argue that agroecological practices that perform well in terms of economics and sustainability can serve a 'lighthouse' function of inspiring farmers to take up agroecological practices. Other contributions look at research and education methodologies that foster the creation of agroecological knowledge and practices, including phenomenon- and experiential-based learning (Francis 2013), action research (Lieblein et al. 2012) and curriculum development (Kerr et. al 2019).

In the literature on political agroecology, the overtly technical orientation of agroecology has been contested. A first area that is contested is the development of agroecological practices. Scholars argue that linear approaches that seek to transfer knowledge and practices from scientists to farmers conform to, rather than transform, the dominant regime (Levidow et al. 2014, Holt-Giménez and Alieri 2013). Instead, more horizontal engagements between farmers and other actors and their knowledge system are proposed, i.e. by way of farmer-researcher alliances (Levidow et. al. 2014, Coolsaet 2016), farmer-field schools (Najjar 2013), or dialogue of knowledges (Martínez-Torres and Rosset 2014). Similarly, scholars have argued that innovation processes within communities or other places outside of modern institutions are often deemed irrelevant because they operate according to different values, and that agroecology should take up the task of supporting these processes and making them visible (Petersen 2015). These contributions bring important insights on methodological approaches that co-create knowledge and practices. They pay less attention to the role of affect in bringing people together for purposes of co-creation. Affect refers to bodily sensations that pulls human and non-human agents out of particular relations and motivates them to establish new ones (Singh 2013, Hardt and Negri 2004, Khoo 2015).

A second area of contestation lies in the defence of territories. Scholars have argued that rather than imposing particular knowledge and values, agroecology builds (or should build) on cultural and spiritual values that exist within local communities or territories (Luna et al. 2019, Botelho et al. 2016, Rosset 2012). In turn, these values and territories should be defended from modernisation and neo-liberalisation. Some scholars propose that this can be achieved by forging relations with nature and local communities in ways that create autonomy and reduce dependency

on external knowledge and commodity markets (Van der Ploeg 2020, Petersen 2018, Rosset 2012). Others have argued that the politicisation of peasants and other agents through political training (Rosset et. al 2019), popular pedagogies (Meek 2015) and peasant-to-peasant gatherings (Val et al. 2019) can contribute to the defence of local values and territories. While these studies provide insights on the employment of particular forms of resistance, they tend to depict resistance in singular and reactionary terms, thereby overlooking how multiple forms of resistance can be combined in a more affirmative strategy to advance territorial alternatives. Also, they do not discuss how less oppositional forces advance alternatives by means of what Porto-Gonçalves (2006) and Sherwood (2017) call existence.

A third area of contestation lies in changing the wider institutional environment. It is argued that while particular policies and institutions can support agroecology, they do not necessarily lead to more systemic change. For agroecology to achieve systemic change, it should also address systemic structures that regulate access and control over land, seeds, markets and decision making within the state (Molina 2019, Anderson et. al. 2019, Pahnke 2016, Petersen 2012). Scholars also argue that collaborating with powerful institutional agents creates a risk that agroecology will be co-opted by the dominant regime (Giraldo and Rosset 2017, Giraldo and McCune 2019). To reduce the risk of co-optation and increase agroecology's transformative capacity, it should build alliances between different movements (Holt-Gimenez and Shattuck 2011, Molina 2013) and forge a strong, joint, transformational narrative (Rivera-Ferra 2018). Although these debates have offered insights into the dangers of institutional engagements and the possibilities offered by engaging with other movements, they tend to characterise politics as either conforming to or opposing the dominant regime, thereby overlooking the possibility of articulating (conforming and opposing) forms of politics together. Articulation refers to how local demands are translated into politics that do or do not result in challenges to systems or power (Griggs and Howarth 2008, Laclau and Mouffe 1985).

This thesis seeks to gain a better understanding of transformation in the domains of practice, territory and the wider institutional environment by looking at the agroecology movement in Brazil. In order to do so, the next section first analyses some of the gaps in the literature on transformation, social movements and agroecology, before formulating the research objectives and questions.

1.5 Research objectives and questions

The first section of this chapter argued that transformative change challenges hierarchies of power that favour particular agents, knowledges and patterns of accumulation, and advances alternatives based on more horizontal relations between people and nature. It also showed that social movements pursue transformation in the domains of practice, territory and the wider institutional environment. The sections that followed looked at some of the academic debates in the literature on transformation, social movements and agroecology. These sections showed that the literature often depicts transformation in technical, reactionary or oppositional terms, thereby overlooking the more affirmative dimensions of transformation. This section analyses this gap in our understanding of transformation by focusing on the domains of practice, territory and the wider institutional environment, before formulating research objectives and questions.

The first domain of transformation is practice. Several contributions in the literature prioritise techno-scientific knowledge and economic values in establishing alternative practices. Other contributions describe practices, methodological approaches and collaborations that emphasise horizontality between peoples' knowledges. However, little attention has so far been paid to the role of affect in mediating the formation of alternative practices. Scholars of what has been termed the 'affective turn' in the social sciences have introduced the notion of affect, which focuses on bodily sensations as a force that pulls human and non-human agents out of particular relations and motivates them to establish new ones (Singh 2013, Hardt and Negri 2004, Khoo 2015). This thesis uses the notion of affect to explore how agroecological practices are constructed.

The second domain of transformation is the territory. Social movements advance alternative ways of working and living that are embedded in particular territories and defend them from agents,

ideas and political trends that threaten them. Some of the literature addresses the defence and advancement of alternative ways of working and living by focusing on resistance against macro-level forces, resistance that is embedded in production and resistance in processes of politicisation. These contributions tend to depict resistance in singular and reactionary terms, thereby overlooking how multiple forms of resistance can be combined in a more affirmative strategy to advance territorial alternatives. Another neglected question is how less oppositional forces advance alternatives by means of what Porto-Gonçalves (2006) and Sherwood (2017) call existence. This thesis investigates how social movements employ multiple forms of resistance and existence to defend and advance territorial alternatives.

The third domain of transformation is the wider institutional environment. Social movements seek to change structural patterns of unsustainability and inequality and make them more supportive and receptive to the demands of people on the ground. A large part of the literature focuses on collaborations with policy makers, businesses, and large NGOs, to remove bureaucratic and market obstacles to particular innovations. This position has been challenged by scholars who argue that collaborations with large institutional agents carry a risk of co-optation and reproduce structural, systemic patterns of unsustainability and inequality. This debate tends to characterise politics as either conforming to or opposing the dominant regime, thereby overlooking how different (conforming and opposing) forms of politics can be articulated together in ways that do transform the wider institutional environment. Scholars in the political sciences have used the notion of articulation to denote how engagements between different agents do or do not result in challenges to systems or power (Laclau and Mouffe 1985, Griggs and Howarth 2008). This thesis investigates how the agroecology movement articulates changes to the wider institutional environment.

The objective of this thesis is to investigate how social movements foster transformation in the domains of practice, territory and the wider institutional environment. The thesis will draw on the case of the agroecology movement in Brazil, which has, over the past thirty years, sought to establish alternative practices, defend its territories and change the wider institutional environment. To reach this objective three main research questions are addressed:

1. What is the role of affect in establishing agroecological practices in Brazil?
2. How does the agroecology movement in Brazil defend and advance territorial alternatives?
3. How does the agroecology movement in Brazil articulate changes to the wider institutional environment?

1.6 Theoretical framework

To obtain an understanding of how social movements foster transformation in the domains of practice, territory and the wider institutional environment, this thesis builds on a post-humanist perspective and draws on concepts from post-humanism, agrarian political economy and post-structuralism. In this chapter, I first describe these different theoretical traditions and discuss their commonalities and differences, arguing that they share a relational and materialist ontological basis that allows concepts from these theoretical strands to be combined and inserted in a post-humanist framework of assemblages. In the following section, I describe the concepts of affect, resistance and articulation. I combine the latter two concepts, which stem from political economy and post-structuralism, with post-human notions of existence and grievances, arguing that these combinations offer a unique perspective that views change in terms of opposition to structures of power and affirmation. I end this chapter by embedding the three concepts in the analytical framework of assemblages, which forms the theoretical basis of this thesis's understanding of transformation.

1.6.1 Post-humanism, political economy and post-structuralism

This section describes the theoretical traditions of post-humanism, political economy and post-structuralism. I first describe how each of these traditions understands reality and its ordering. I then compare these traditions, arguing that while there are important differences, particularly

with regards to hierarchy, these traditions share ontological assumptions that allow concepts derived from them to be combined and inserted in a post-humanist framework of assemblages.

Critical post-humanism

Critical post-humanism understands reality as constituted by relations and interaction between human and non-human agents. It posits that this relationality is flat, affective and inclusive of non-humans (Braidotti 2013, Massumi 2002, Deleuze and Guattari 1983). A flat relationality rejects hierarchy, asserting that an agent or relation is never defined by another, but is instead defined by the multiple relations in which it is situated. This does not mean that post-humanism denies antagonism; rather, it reworks it within the specificity of an agent's locations and the complex web of relations that compose this agent. In these relations, post-humanism stresses affect as an autonomous force that both constitutes and mediates the formation of social relations. The power to affect and be affected applies not only to human but also non-human agents. This means that humans are not believed to act on matter, but rather humans and non-humans are agential actors in the world as the latter continuously comes into being (Barad 2007, Braidotti 2013).

As a result of understanding reality as flat and affectively constructed, post-humanism strongly emphasises affective alignments of agents or assemblages as an ordering principle (Braidotti 2013, Delanda 2006). Conceptualising agents, including non-human ones, as primarily affective means that these have an immanent potential for self-assembly by forming affective associations with other agents. This also applies when agents encounter more powerful agents or assemblages: rather than opposing or submitting to powerful agents or constellations, less powerful ones may respond by subversively detaching from them and affectively attaching to others. As such, primacy is given to positive affirmation as an ordering force, in the sense that post-humanism emphasises the construction of sustainable alternatives, rather than negatively opposing powerful agents. As a result of the encounter with powerful agents, ordering is never complete but in continuous flux and in the process of becoming.

Agrarian political economy

In agrarian political economy, reality is viewed as being constituted by relations (Van der Ploeg 2020, Goodman 2008). These relations include both humans and materials that are held together in processes of production (Moore 2015). This is especially visible in labour process theory, which focuses on the relations within production. Such relations can be classified into two main types. First is the relation between people and things, which constitutes the means of production. This relation emphasises the interaction between people and the material nature of agriculture, which has been referred to by Marx as 'man's inorganic body' (Goodman 2008: 185). Second is the relation between people who control the means of production and those who do not, which regulates the social division of the wealth produced. The relations within production can rely on more reciprocal forms of exchange with nature, family and community or on commoditised forms of exchange that are linked to input and output markets, such as fertilisers, machinery and food.

In agrarian political economy, ordering is mainly understood to emerge through the commoditisation of the relations of production, as well as through resistance hereto (Van der Ploeg 2010). The ensemble of commoditised relations, and the agents who promote these, make up capitalism, which controls these relations. This control allows for the creation of surplus value, that is, the value that capital can squeeze out of the production process. This creates a gap where agents who have capital accumulate more, while those who do not become increasingly marginalised. However, capitalist control is not absolute. Agents can resist capitalism by altering the production process to rebalance non-commodity and commodity relations in a way that reduces their dependency on the latter (Van der Ploeg 2010, Toledo 1990). They can also sabotage capitalist enterprises (Scott 1987) or push for regulations that stop or limit the impacts of capitalism (O'Brien and Lee 2006).

Post-structuralism

Post-structuralism understands reality as constituted by social relations, rather than composed of individual entities with fixed characteristics (Howarth and Torfing 2004). It posits that these social relations are material and suffused with meaning, and that structures formed through meaning are fundamentally open (Behagel 2012, Jasanoff 2004, Laclau and Mouffe 1985). Materiality implies that there is no sharp division between the social and the material or between meaning and matter. Instead, both are co-produced. While post-structuralism focusses primarily on the construction of meaning in social relations, it argues that these meanings can only be altered in relation to real matter. Meaning thus does not exist independently, but can only appear within relations between diverse agents. As a consequence, meaning can never fully structure reality. This is well expressed in political discourse theory, which understands relations between agents as formed through practices of articulation that fix meaning between them (Glynos and Howarth 2007, Jorgensen & Phillips 2002, Laclau and Mouffe 1985). Discourse is the structured totality that follows from these articulations, which both enable and limit the scope of action. These structures are never fully fixed, as there are always other ways of fixing meaning.

As a result of understanding the world as constructed through meaning, post-structuralism focuses on the construction, conformation or contestation of meaning as an ordering principle. In discourse theory, ordering operates either by following (and thereby reproducing) dominant discourses, or by challenging these (Behagel 2012, Glynos and Howarth 2007, Laclau and Mouffe 1985). From this perspective, power results from the articulation of meaning in discourses that become dominant or hegemonic. These discourses favour particular agents and their knowledge and values, thereby marginalising and excluding others. Because all discourses, including hegemonic ones, are contingent, they offer a basis for the critique of power and contain the possibility of resistance. Challenges to power are successful when articulatory practices change the fixed positions of the elements that are part of the discourse.

Ontological commonalities and differences

Post-humanism, post-structuralism and agrarian political economy all share a relational, materialist ontological basis. They all conceive of reality primarily as relational, and not as a collection of elements with fixed, individual properties (Braidotti 2013, Goodman 2008, Glynos and Howarth 2007). Phenomena such as knowledge, values and markets are outcomes of the interaction between agents. In all three frameworks, the capacity of agents to act is both limited and made possible by the social relations in which they are embedded. Consequently, these theoretical traditions reject reality as determined by structures or systems, which themselves are composed of relations, with their own limitations and possibilities. Also, the three traditions inscribe materiality as the ontological feature of reality. In their view, the world is made up of complex co-productions between the social and the natural, where meaning and matter come into being together.

Clearly, differences also exist between post-humanism, post-structuralism and agrarian political economy. One major difference regards power. Whereas post-humanism understands relations to be flat, the latter two theories proceed from a hierarchy between agents (Braidotti 2013). In post-structuralism, this hierarchy lies in the power of discourses that make up the dominant mode of thought (Howarth and Torfing 2004). In political economy, in turn, power is thought to lie in capitalist accumulation (Goodman 2008). Although both these theoretical traditions offer possibilities for resistance, power remains at the centre. As a result, difference is only seen in relation to this power, and agents, including non-human ones, are defined by dualistic oppositions that confirm the dominant vision of sameness. This limits the room for negotiation and instils the core of the subject with a negative opposition.

In post-humanism, negative opposition is rejected in favour of positive affirmation and mutual specification of the agent with others in sets of relational assemblages (Delanda 2006). Post-humanism emphasises subversive moves of detachment from dominant structures by emphasising the potential of affect to flow over dominant images, thought, or modes of organising production. Post-humanism also points to the power of transversal connections or networks with others, in the task of producing sustainable alternatives.

Despite these differences, I believe that the ontological basis of political economy and post-structuralism is similar enough to allow their concepts to be combined with concepts from post-humanism and to be reworked in a post-humanist framework. Post-humanism does not reject the antagonist relations that receive primacy in political economy and post-structuralism, but allows them to be placed in an assemblage where agents are subject to a range of other forces, particularly the power of affirmation. In so doing, the assemblage accounts for powers exerted by meaning and material accumulation, while extending their reach into matters that go beyond the oppositional.

1.6.2 The concepts of affect, resistance and articulation

This section describes the concepts of affect, resistance and articulation, three concepts in this thesis which are central to understanding transformation in the domains of practice, territory and the wider institutional environment. The concept of affect comes from post-humanism. The concepts of resistance and articulation (derived from political economy and post-structuralism, respectively) are combined with the post-humanist notions of existence and grievances. I argue that these combinations offer a unique perspective on how agents are shaped by and can escape structures of power in processes of social change.

Affect

The concept of affect stems from the post-humanist tradition. In this thesis, I use the concept to understand how alternative practices are constructed. Affect refers to bodily sensations that draw human and non-human agents in and out of the relations that are constantly being created and that constantly create these agents (Massumi 2015, Deleuze 1988). Rather than prioritising particular agents and knowledges in the development of alternative practices, affect theory understands behaviour as resulting from multiple relationships and interactions that are held together by affect (Braidotti 2013). Humans are thus not only linked to non-human nature because of economic interests, but also form relations and constellations that are held together by bodily sensations such as feelings, wishes, passions and grievances. From this perspective, the development and uptake of practices is not something that can be neatly managed or controlled with technologies or economic incentives. Rather, the construction of practices needs to be fostered by affectively pulling human and non-human nature out of existing relations and practices, and drawing them into new ones.

The work done to pull human and non-human nature out of a particular relation and into a new one has been referred to as affective labour. Affective labour mobilises human and non-human nature into new relations by cultivating or manipulating affects (Singh 2013, see also Hardt and Negri 2004). Embodiment refers to the process through which these relations and their interactions become routinised into more stable alignments, such as a practice (Braun 2008). Alignments are in continuous interaction and flux with other agents and ideas (Woodward and Lea 2010, Deleuze 1988), and can destabilise when the affect holding agents and ideas together changes and leads these to disperse (what Deleuze and Guattari 1983 call 'lines of flight'). This can occur as a result of repetition or when there is a collision with external agents, ideas or practices (Müller and Schurr 2016, Davies 2011).

To gain a better understanding of the role of affect in the construction of alternative practices, this thesis examines how people and nature are drawn away from relations that seek to control them and directed towards more horizontal ones. It also looks at how the agroecology movement employs affective labour to support the embodiment of stable alignments between farmers, the soil, plants and micro-organisms, researchers and institutions.

Resistance and existence

This thesis uses the combined concept of resistance and existence to understand how social movements defend territories and advance alternatives. Different forms of resistance have been described in agrarian political economy (e.g. Vergara-Camus 2009, van der Ploeg 2007, Kerkvliet 2009, O'Brien and Li 2006). Instead of focusing on one form of resistance, which only allows for a focus on a particular aspect of territorial struggle, this thesis combines four different notions of

resistance in a single concept to better understand how the territory is defended as a whole. In addition, it combines resistance with the notion of existence, which enables it to capture how non-oppositional forces advance territorial alternatives.

In agrarian political economy, active and direct as well as passive and indirect forms of resistance have been described. The first and most visible form of resistance is overt resistance: here, agents come together in response to political ideas and engage in overt struggles, such as road blocks, strikes, rebellions, demonstrations, and occupations (Vergara-Camus 2009, Scott 1976, Wolf 1975). The second form is the more subtle and non-confrontational everyday resistance; this includes jokes, petty theft, foot dragging and all manner of actions through which agents disassociate themselves from super-ordinates (Scott 1987). Everyday resistance can lead to the establishment of shared ideas that challenge the prevailing political conditions (Kerkvliet 2009, Malseed 2008, Scott 1987). The third form of resistance is repeasantisation, also known as resistance of the third kind, which refers to changes in production and distribution systems that reduce dependency on modern knowledge and commodity markets (van der Ploeg 2007, 2008). The last form is rightful resistance, which strategically employs the ideas and commitments of the powerful to change policies or laws that serve other interests, often through negotiation (O'Brien 2013, O'Brien and Li 2006).

Political economy's focus on resistance has received criticism from post-humanist scholars who argue that the advancement of alternatives manifests not only as a fight against threats, but also as a fight for a different mode of 'existence' (Sherwood et al. 2017, Daskalaki 2017, Braidotti, Porto-Gonçalves 2006). This means that a struggle against something or someone may be part of a larger struggle in favour of something else. In other words, peasant struggles can be a means of creating room for something new. These struggles therefore both support different modes of existence and challenge dominant agents and ideas. Accordingly, we consider existence as an integral part of multiple forms of resistance.

To gain a better understanding of how social movements defend and advance territorial alternatives, this thesis investigates how the agroecology movement in Brazil employs and combines different forms of resistance and existence. This involves looking at how the movement advances alternative ways of farming, markets, education and ways of distributing land. It also involves looking at how hostile agents, ideas and political trends such as agribusiness, neo-liberalism and modernisation threaten territorial alternatives, and how these threats are countered by demonstrations, cultivating political ideas, adjusting systems of production and distribution and negotiating with the government.

Articulation and grievances

In this thesis, I use the concept of articulation to explain how social movements transform the wider institutional environment. The concept stems from post-structuralism, where it has been used to describe how engagements between agents, such as peasant organisations, civil society and government, can either lead either to systemic challenges to existing structures of power, or to smaller changes within these structures (Griggs and Howarth 2008, Laclau and Mouffe 1985).

Articulation starts with grievances and frustrations which emerge when disruptions disturb the way meaning is fixed (Griggs and Howarth 2008, Laclau and Mouffe 1985). Grievances are articulated into social demands when these disturbances are linked to particular social relations. These demands can, in turn, be linked to other demands, such as those of policy makers, and become articulated into very specific requests. This forms the basis of institutional politics which does not challenge authority. Demands can also be linked and articulated as claims that form the basis of popular politics and do indeed challenge authority. The degree to which a group poses a structural challenge to authority thus depends on whether articulation occurs more in the direction of a request or a claim. In social movements, the equation of demands in popular politics is paired with the construction of a 'people' who oppose a 'common enemy'.

Post-humanist scholars have criticised the post-structuralist depiction of social engagements in oppositional rather than affirmational terms (Braidotti 2013). To allow for more positive, affirmative forces, this thesis combines a post-human understanding of grievances and frustrations with the concept of articulation. From a post-humanist perspective, grievances that emerge from particular disruptions need not to be articulated in demands that oppose these

disruptions. Instead, grievances can be positively reworked to activate transversal relations for the construction of alternatives. In constructing alternatives new frustrations may emerge which can be articulated into demands for policies and regulations that support them.

To gain a better understanding of how social movements change the wider institutional environment, this thesis investigates how the agroecology movement articulates local demands into institutional or popular politics. This involves looking at the agroecology movements' engagement with local communities, governments and other movements. This thesis also investigates how grievances shape social demands and activate the formation of relations between farmers, trees, researchers and others for the construction of alternatives.

1.6.3 Transformation as assemblage

Assemblage theory understands the world in terms of constellations of affects between human and non-human agents (Woods 2015, Anderson and MacFarlane 2011, Muller and Schurr, 2016, Delanda 2006, Deleuze and Guattari 1987). These affects both constitute and mediate the formation of the relationships that encompass the assemblage. Accordingly, change is defined by the way in which different actors encounter, relate, and align their wishes with respect to one another (Anderson and MacFarlane 2011, Davies 2012). Change occurs when assemblages disperse in lines of flight or when they re-assemble in lines of alignment. This occurs when there is a change in the affects holding the assemblage together. These affects can change when assemblages, or the agents that constitute them, collide with other agents, ideas or assemblages. Affects can also change as a result of repetition.

The concept of alignment as the coming together of agents offers a basis for integrating the notions of affect, resistance and articulation into the assemblage. Affect refers to the force that brings agents together in alignments. Resistance refers to alignments of agents that protect productive practices from dominant assemblages. Articulation, in turn, refers to alignments that fix meaning in opposition to dominant images. Existence and grievances denote the non-oppositional features of these alignments, as well as the relations that are formed to construct alternative practices and images through these alignments. Oppositional and non-oppositional alignments co-exist and overlap in an assemblage. In the assemblage, these alignments do not operate according to distinct logics, but are ordered through multiple, affective encounters and relations in an affirmative process of becoming.

From the perspective of assemblages, investigating how social movements foster transformation entails examining the interaction between human and non-human agents (De Landa 2006). These include, amongst others, people, the soil, markets, NGOs, government policies and ideas. It also entails a focus on how these agents align in movements that oppose dominant image and practices, and affirm alternatives from a perspective of difference.

1.7 Methodological design

This section explains the methodological choices made in this thesis to access my field of study and provide an understanding of how social movements foster transformation in the domains of practice, territories and the wider institutional environment. These choices were informed by the post-humanist perspective elucidated in the previous section. That section also explained how concepts from agrarian political economy and post-structuralism were combined with post-humanist concepts and reworked in the framework of assemblages to address the research questions posed in this thesis. Below, I first explain how the choice for an interpretivist research approach and case study research strategy align with the ontological assumptions that underlie the notion of assemblages. I then explain the qualitative data gathering and analysis techniques underpinning the data collection process.

1.7.1 Research approach and strategy

To determine how human and non-human agents assemble in movements for transformation, this thesis adopts an interpretivist methodological approach. An interpretivist research approach assigns centre stage to the interaction between agents and ideas (Schwartz-Shea and Yanow 2012). This approach builds on the ontological assumptions of relationality and materiality that are also present in the notion of assemblages. An interpretivist approach implies that entities do not have intrinsic properties but that these properties are relational. It also implies that the natural and the social, and, meaning and matter, are not separate but co-produced (Jasanoff 2004). This aligns with the notion of assemblages as being composed of multiple encounters and engagements between human and non-human agents and ideas. While interpretivist approaches are often combined with perspectives that introduce hierarchy between agents, they do not exclude perspectives that are based on flat ontologies. As such, the notion of assemblages, which emphasises horizontal relations between agents, can be combined with an interpretivist approach.

To understand how the interaction between agents and ideas shapes processes of transformation, this thesis employs a paradigmatic case study research strategy. A case study research strategy progressively builds an understanding of the research subject by dialectically moving between the phenomenon and the wider context in which it occurs (Flyvbjerg 2006). The paradigmatic case highlights the more general characteristics of the phenomenon under research which, in this research, concerns transformation by social movements. The domains of practice, territory and the wider institutional environment are constitutive parts of this phenomenon. Transformation by the agroecology movement in Brazil is taken as a paradigmatic case. A case study strategy can be combined with different research approaches. It lends itself to an interpretivist approach, as it allows for an understanding of the case in terms of interactions between agents and ideas (Schwartz-Shea and Yanow 2012).

To answer the research questions, the research phenomenon and case are divided into three analytical parts that correspond with the three domains of transformation. The first part focuses on the domain of practice and analyses the role of affect in the establishment of alternative practices. The second part looks at the domain of territory and analyses how resistance and existence are employed to defend territorial alternatives. The third part of the analysis focuses on the wider institutional domain and analyses how different modes of articulation change the wider institutional environment. The first two parts of the analysis focus on transformation by the agroecology movement in the Zona da Mata in Minas Gerais, Brazil. The Zona da Mata was chosen because it is considered to have one of the strongest agroecological movements in Brazil, actively engaged in developing and establishing agroecological practices, all the while supporting the formation of diverse territories and changing the wider institutional environment (Schmitt 2016). The third part of the analysis focuses on transformation by the national agroecology movement in Brazil.

1.7.3 Research collaborations

When the researcher enters the field, he or she becomes an active part of the field under study, thereby actively shaping and being shaped by it. An interpretive research approach therefore calls not only for gathering and interpreting data but also for looking at the relations with agents and ideas that the researcher encounters when engaging with the field (Yanow 2007). The perspective of assemblages further elaborates on this by decentring the researcher.

The term researcher is often taken to suggest a self that is stable, rational, and coherent and who can engage in the world autonomously and with agency. Such a view fails to encompass the contradictions, irrationalities and incoherencies of the self (Braidotti 2013). From the perspective of assemblages, the self is composed of and shaped by multiple affective relations with agents and ideas. As a consequence, the researcher is guided by mutually affective processes rather than by fixed research protocols and discrete relations with research participants (Martin 2018).

An understanding of the researcher as decentred also has consequences for how research collaborations are seen. Collaborations between researcher and research participants are often understood in epistemic terms, as focused on the production of academic knowledge. This view overlooks other products that emerge from affective processes within the collaboration. For example, a collaboration may be involved with the more practical aspects of establishing a novel

farming practice. The focus on academic production also overlooks the ethical and political dimension of research. Non-academic productions, ethics and politics can play an important role in drawing agents into the collaboration or in holding the collaboration together.

To gain an understanding of transformation, this thesis looks at the role of researchers and research collaborations in processes of change, devoting particular attention to the non-academic production, ethics and politics of research.

1.7.2 Data collection and analysis

To investigate transformation by the agroecology movement, this thesis builds on primary and secondary data. Primary data was collected from September 2016 to August 2018, using qualitative data-gathering techniques. Prior to the research, a fieldwork plan was developed that described the aim and structure of the research and identified data sources and risks. The fieldwork plan was approved by the ethical committee of Wageningen University. Oral consent was requested for the recording of interviews and focus group meetings.

Data was collected by interviewing agents that were part of the agroecology movement of the Zona da Mata and the national agroecology movements. For the agroecology movement in the Zona da Mata, data was obtained in the municipalities of Araponga, Divino and Espera Feliz. Here, data was collected from peasants and peasant organisations, including local peasant unions, cooperatives, associations and informal groups with a particular interest such as young people and women. Data was also collected from an NGO, the Centre of Alternative Technologies, and from the Federal University of Viçosa, both of which operate in the Zona da Mata. Primary data obtained my MSc thesis research in 2008, which focused on the agroecology movement in Araponga, was also used in this thesis (see Van den Berg 2010). For the national agroecology movement, data was obtained from the National Agroecology Articulation (ANA) and its member organisations, which include the Brazilian Association for Agroecology (ABA), regional agroecology movements and movements of women, Quilombola and Indigenous people¹, women and Quilombolas. Primary and secondary data on the national movement were collected during the second period of research.

I used qualitative gathering techniques to collect data. The advantage of qualitative data gathering lies in its ability to capture encounters and engagements between human and non-human agents that are part of the local and national movement agents as they occur in action (Mohajan 2018). To this end, a variety of techniques were employed. The first was participant observation, which allows for the collection of in-depth and contextualised data (Adler and Adler 1994). Through participant observation, I obtained data on transformative processes occurring in meetings, events and on the farm. Participant observation not only entailed data collection but also involved supporting the organisation of events. As a second data-gathering technique, I carried out semi-structured interviews; these allowed me to collect data on particular topics (Rubin and Rubin 2005). Through interviews with members of the agroecological movement, I obtained data on specific aspects of transformation. The third technique I used was focus group meetings, which allowed me to gather data on collective views and the meaning behind them. Focus group meetings were organised to supplement other data, particularly on the collective values of specific groups, organisations and initiatives.

I used data on the local and national agroecology movements to gather information on three domains of transformation: practice, territory and the wider institutional environment. In the domain of practice, I obtained data on the encounters between, and engagements of, local movement agents. I carried out participant observation by working on farms as well as by attending and helping to organise gatherings by movement agents, where practices were being discussed. A focus group meeting was conducted in each one of the municipalities; during these, farmers reflected on their practices and compared them with those of other farmers in the region. I conducted 20 interviews with farmers about their practices and 15 with peasant organisations on how these practices were established. In the domain of territory, I also focussed on the encounters between, and engagements of, local movement agents. I carried out participant

¹ Indigenous people refers to descendants from inhabitants that lived in Brazil prior to European colonisation. Quilombola refers to descendants from African slaves that escaped from slavery to settle in remote areas.

observation while attending meeting and events organised by peasant cooperatives, schools, unions and associations, by women's and youth groups and by the CTA and the Federal University of Viçosa. A focus group meeting was also organised in each municipality, where representatives from some of these organisations and groups discussed what organisations were defending, advancing or threatening agroecology. I conducted a total of 20 interviews with these members and representatives of groups and organisations. For the wider institutional domain, I gathered data by focusing on national agroecological movement agents. In doing so, I undertook participant observation while attending conferences, gatherings and meetings organised by the National Agroecology Articulation and the Brazilian Agroecology Association. In this context, I conducted 15 interviews with representatives, members and allies from these organisations including women, Indigenous people and Blacks. I also collected secondary data such as documents about past events, political statements and project reports written by these organisations.

For the analysis of the data, I conducted multiple rounds of coding. For the domain of practice, I used grounded theory to form categories of different transformative practices. Three categories of practices emerged: farming, community and market practices. I then coded data to trace how these different practices were established, focusing on how the movement employs affective labour and fosters processes of embodiment. For the domain of territory, I first identified different territorial practices and the forces that threaten them. I then coded the data to trace how different forms of resistance and existence defended and/or advanced these practices. For the domain of the wider institutional environment, I coded the data to identify grievances and demands. In an additional round of coding, I focused on how these grievances and demands were articulated in institutional and popular politics.

1.8 Outline of thesis

Chapter 1 has discussed the problem outline, objective, research questions, conceptual framework and research approach of this thesis. This section presents an outline of the empirical chapters (chapters 2-6) and the concluding chapter (chapter 7). The chapters present a continuum from the domain of practice to the domain of territory and the wider institutional domain. Each chapter addresses a particular research question and uses one of the concepts presented to explain how that question is approached.

Chapters 2 and 3 describe the role of affect in establishing agroecological practices in Brazil. They address the first research question and focus on transformation in the domain of practice. Chapter 2 uses the concept of assemblages to show how shared affects for the land and rural life brought farmers, farmer organisations, researchers and an NGO together to engage in a process of experimentation and establish new farming practices. It concludes that affects played a key role in mediating the exploration and formation of practical alignments between agents such as peasants, citizens, weeds, trees and mycorrhizal fungi. These practices not only produce commodities but also friendships, a fertile soil, a beautiful landscape and healthy food. Chapter 3 uses the concept of affect to illustrate how the affective work done by the agroecology movement pulls peasants out of unsustainable relations and practices, and draws them to establish alternative ones. It also shows that affective work can support the formation of alignments with institutional agents such as markets, research organisations and policies, that support these practices. It concludes with the observation that social movements can cultivate and mobilise affects to support the construction of alternative practices from the bottom by engaging with peoples' memories, lived experiences and relations with nature.

Chapters 4 and 5 describe how the agroecology movement in Brazil defends and advances territorial alternatives. They address the second research question and focus on transformation in the domain of territory. Chapter 4 uses the concept of repeasantisation, also known as resistance of the third kind, to show how peasant alternatives are defended from neo-liberal commodity markets through alterations in their system of production and distribution. It concludes that this form of resistance allows for the entry of new peasants and the establishment of ways of farming that are based on peasants' own values. Chapter 5 uses the concept of combined resistance and existence to describe the formation of territorial alignments and alternatives involving autonomous and self-governed modes of farming, education, market

exchange and innovation. It also shows that territorial alignments challenge values of competition, profit, individualism and control over nature and foster values of cooperation, reciprocity, freedom, trust, friendship and respect for nature. This chapter concludes that social movements employ and combine resistance and existence strategically to form narratives, networks and practices that defend territories from neo-liberalism and modernisation and that advance the construction of alternatives.

Chapter 6 describes how the agroecology movement in Brazil articulates changes to the wider institutional environment. It address the third research question and focus on transformation in the wider institutional domain. It uses the concept of articulation and grievances to show how the agroecology movement articulates grievances and local demands for better sharecropping conditions, local markets and sustainable farming into institutional and popular politics. It also shows that while institutional politics did result in supporting policies and legislation, it did not posit a systemic challenge to agri-business' control over land, markets and policy resources. Popular politics led the formation of broad, popular movements that did posit a systemic challenge, but with insecure outcomes. This chapter concludes that institutional and popular politics can be strategically combined in ways that strengthen social movements and address local demands.

Chapter 2

**Reassembling nature and
culture: Resourceful
farming in Araponga, Brazil**

Abstract

This article highlights the emergence of a regenerative, agroecological mode of agriculture following the ongoing process of experimentation and learning by a settlement of landless people and farm workers. It examines how they engaged anew with 'nature' and generated resourceful farming practices as a result of a threefold process of cultural re-appreciation, a re-grounding in local natural resources and a political-economic re-positioning towards prevailing regimes in policies, markets and technologies. We argue that the construction of resourceful farming culminates around: finding and forging productive alignments with non-human nature such as weeds, trees and mycorrhizal fungi, viewing the contribution of non-human nature not only in terms of their value as a commodity, but as adding value in many different ways and building a socio-material resource base and an institutional setting that allows farmers to farm more autonomously.

This chapter is based on the following publication:

Van den Berg, L.; Roep, D.; Hebick, P., 2018. Reassembling nature and culture: resourceful farming in Araponga, Brazil. *Journal of Rural Studies* 61: 314-322.

2.1 Introduction

It has been widely argued amongst scholars that de-agrarianisation and agricultural degradation result from the commodification of land and labour and the simplification and rationalisation of agriculture which breaks the metabolic relationship between 'nature' and 'culture' in agriculture. In the literature, this is referred to as the 'metabolic rift' (Marx, 1973; Foster, 1999; Wittman, 2009) and has been taken as a defining feature of the capitocene, the era in which extraction of nature has and is irreversibly destroying the planet on a geological timescale (Moore, 2017). It is been argued that the metabolic rift can only be repaired through transformations of the larger state economy and that (agroecological) alternatives function as a form of capitalism that only works well in ecosystems rich of natural resources. Such alternatives, it has been further argued, will not be able to produce enough to "feed the world" and require a large amount of labour because they are devoid of external knowledge, technology and inputs which disables farmers to make a decent living and drive the younger generation away from agriculture (Jansen, 2015; Bernstein, 2014).

These arguments carry problematic assumptions about the, inevitable simplification of, relation between human 'culture' and non-human 'nature' in farming. First of all, non-human nature, dead and living matter evolving from natural ordering processes, is taken as either décor that can be ignored or as a resource that can be technically controlled and fixed by its "natural" characteristics. Such a view ignores the non-human labour force upon which agriculture rests, such as mycorrhizal fungi and soil organic matter, often with overexploitation and degradation as a result (Tsing, 2015; Martinez-Alier, 2002). Ignoring the agency of non-humans next to those of humans, making it de facto invisible, disregards the productive potential human and non-humans alignments in different time-space constellations. Second, the valuable contribution of non-humans in farming is reduced to the "objectified" exchange value or price of the commodities produced. In doing this, farming is reduced to the transformation of markets based inputs, with commodities such as seeds and fertilizers, into other commodities. This leaves farming being embedded in and determined by the logic of commodity markets (van der Ploeg, 2010; Schneider and McMichael, 2010). This view obscures non-market transactions based values and the versatile benefits farming may bring to the agroecosystem, the livelihoods of farmers and their communities and society as a whole (Martinez-Alier, 2002; McMichael, 2013). And third, it disqualifies the culture of farming, and more in particular a peasant style of farming (Van der Ploeg, 2013), as a being pre-capitalist, outdated, inefficient and inherently inert. Thus ignoring the inspirational, creative and innovative power of culture in general, as in arts, and the art of farming in particular. Culture refers to shared ideas, notions, norms and values shaping the social (inter)actions of humans, as well as an interaction with non-humans in a meaningful way. It includes an appreciation of these interactions and what are seen as good farming practices in aligning culture and nature, and how by mediation of farming techniques cultural and natural processes get assembled into and are co-evolving as part of an agroecosystem.

In this article we present a detailed account of how 'nature-culture' alignments are reworked and how culture, nature and technology are re-assembled in a settlement of previously landless people and farm workers in Araponga, Brazil. How they, in becoming farmers, developed resourceful, place-specific farm practices, seen as key to a peasant mode of farming (Van der Ploeg, 2013, 2017). Earlier this has been presented as a case of repeasantisation and – in view of their return to the land and quest for land – also a case of reagrarianisation (Van den Berg et al., 2016). In an evolving process of collaborative experimentation and learning-by-doing the farming community developed the space and the capacity to reshape 'nature – culture' interactions and develop more resourceful, agroecological farming practices – notably, in an area where the natural resources had been degenerated because of commodity-based, agro-industrial farming practices. Their shift towards and commitment to agroecological, regenerative farming practices was given crucial support by change agents and agencies, complemented by new institutional arrangements and effective institutional reform (Van den Berg et al., 2016). In this article we continue to argue how this process of re-alignment and re-assembling can be analysed as an evolving, threefold process of a *re-appreciation* of farming and good farming practices, a *re-grounding* of farming in the available natural resources with the intention to enrich their resource base, that however has to be complemented by a *re-positioning* towards prevailing markets, policies and innovation systems to create a more supportive institutional embedding to their resourceful, regenerative farming practices.

Section four of the article provides a detailed account for the Araponga case, followed by a discussion and conclusion. In section two we will first frame the development of resourceful, regenerative farming as re-assembling nature and culture, arguing that we cannot think of them as entities on its own, they are co-constructed and co-evolve, intermediated by farming techniques. Next the methodology is briefly explained in section 3.

2.2 Resourceful farming: re-assembling 'nature-culture' in a threefold process

If we want to understand how 'nature-culture' alignments are reworked in developing resourceful farming practices, we first of all need to go beyond the dichotomy of 'nature' versus 'culture' in which both are conceptualised as two separate, bounded entities or 'orders', e.g. as an ecosystem and a social system, that exist on their own each with its own distinct dynamics (Ingold, 1993; Jasanoff, 2004). We must also move away from linear explanations of nature as determined by culture (Haraway, 1993; Norgaard, 1994).

For a better understanding we have to move away from perceiving nature and culture as fixed relationships or as bounded entities towards an understanding of socio-material assemblages that encompass both natures and cultures and that are constituted by ideas, human and non-human agents, acknowledging that agency is distributed amongst both human and non-human agents (Deleuze and Guattari, 1987; Haraway, 1993; Anderson and MacFarlane, 2011; Woods, 2015) and that ordering results from temporary alignments of ideas, human and non-human agents (Law, 1994; Muller and Schurr, 2016) which may be local or from other localities (Tsing, 2000; Davies, 2012; McFarlane, 2009). 'Nature' and 'culture' can thus only be distinguished analytically. 'Nature' can be reconsidered as all living and dead matter, a material dimension resulting from the alignment between human and non-human agents. 'Culture' refers to the shared ideas, notions, norms and values shaping the (inter)actions of human beings, resulting in patterns of shared ways of doing, thinking and feeling as cultural repertoires or styles of farming (Van der Ploeg, 2012). Nature-culture alignments are not political neutral. They incorporate particular actively constructed values and views and which are embedded in particular power constellations that in turn can intervene in and impact on nature-culture alignments (Latour, 1983; Mol, 1999). Next to natural (or ecological) and cultural ordering processes, we thus acknowledge for the political-ecological dimension.

Agents may deliberately rework nature-culture interactions by intervening in socio-material assemblages and try to intermingle or reorder them. This may result in intended, unintended and even unforeseen outcomes that re-align agents or that lead them to disperse and reassemble in a new constellation (Davies, 2012; Muller and Schurr, 2016). To understand interventions we therefore have to think of a complex working whole in which nature and culture are seamlessly interwoven (Roep, 2000).

Human interventions have been divided into those that seek to control nature and those that resemble notions of "living with" nature. The latter entails a more responsive and responsible relation to non-human nature (Hinchliffe, 2007; Pickering, 2008; Turnhout et. al., 2013). Human interventions can enrich, maintain or degrade places. Roep et al. (2015) and Horlings (2016) maintain that an enrichment of places involves a well-coordinated, threefold process of cultural re-appreciation, of re-grounding in natural resources and a political-economic re-positioning towards prevailing regimes in policies, markets and technologies. Resourceful, regenerative farming can be conceptualised as an expression of such a threefold process.

Farming practices can be understood as deliberate interventions by human agents in an effort to coordinate a complex assemblage constituted by specific seeds, plants, animals, soil, fields, landscapes, buildings, machines, humans, farms, families, industries, consumers – but also shared ideas, norms, values and so on that according to the ability of the practitioners are aligned in specific and productive ways, resulting in time- and space-differentiated, place-specific, intended, unintended and even unforeseen outcomes (Tsing, 2000; Buller, 2013). This is what Van der Ploeg (2013, 2017) denotes as 'the art of farming'.

Different farm assemblages can be seen to represent different values, depending on how the assemblage is constituted. One can think of two contrasting modes of agriculture. One mode extracts (valuable) resources from the place of production and transfers them to the place of consumption. This is associated with an agro-industrial mode of farming and has been heavily promoted under the Green Revolution. The transfer and accumulation of resources to, and in, the place of consumption provokes a degradation of resources and impoverishment in the place of production. The agroecological mode of farming counters this. It aims to enrich the resource base at the place of production, creating multiple values to the benefit of farmers, their families, their livelihoods, their community and the agroecosystem they operate in (McMichael, 2013; Turnhout et. al., 2013). In short: enrich the place. The first mode is a commodity directed agriculture, also referred to as a capitalist or entrepreneurial mode of farming, and the contrasting second mode is commonly referred to as a peasant mode of farming (see Van der Ploeg in this special issue; McMichael, 2015).

Following this, one can imagine a shift from a commodity based mode of agriculture that is merely extracting value from a place, to a versatile mode of agriculture that add multiple values to a place, enriching the resource base and thus has to potential to counter the degeneration and depletion of resources and the consequent impoverishment of livelihoods, communities and places. The Araponga case provides a telling example of the emergence of a place-enriching, regenerative agriculture. This involves a well-coordinated, threefold process of re-appreciation, re-grounding and re-positioning: a re-appreciation of farming and the agroecosystem it operates in and a quest for farming practices that will generate a multiplicity of values for the place; a re-grounding of farming in the agroecosystem that aims to enrich the socio-material resource base, i.e. both natural and human resources; and a re-positioning towards prevailing regimes in policies, markets and technologies that promote and support a commodity-orientated, agro-industrial mode of farming. All include a transformation of power relations and a re-assembling to create the space and build the capacity to farm differently, re-working the complex whole of ordering processes.

2.3 Methodology

This paper draws from an ethnographic study carried out in the municipality of Araponga, in the Zona da Mata region in Brazil, which has been considered an exemplary case of agroecology (Cardoso and Mendes, 2015). It combines data derived from oral histories, farm observations and documented reports. The research draws on 25 interviews that enabled to reconstruct the process through which farms changed from a more Green Revolution type of farming to agroecological farming.

Although the study includes people that worked for the NGO, the Federal University of Viçosa and the Arapongan Rural workers union, which initiated programmes to support the change from Green Revolution to agroecological farming, most of the interviews were conducted with farmers including their experiences of these programmes. Three months were spend in Araponga where contacts were established to undertake interviewing and farm observations. Care was taken to select farmers that had been both more and less involved in official programmes as well as to ensure a balance in gender and age. Follow –up research is ongoing.

To understand how nature-culture alignments were reworked and resourceful farming was developed, interview transcripts and documents were first used to reconstruct the histories of farms and farmers including how programmes that promoted agroecology entered the farm assemblage. These were then analysed to identify alignments between human and non-human agents that were created and abandoned on the farm and how this involved a simultaneous, threefold process of political-economic re-positioning, ecological re-grounding and cultural re-appreciation.

2.4 Resourceful farming in Araponga: a threefold process of re-appreciation, re-grounding and re-positioning

2.4.1 Agriculture in the Zona da Mata and in Araponga

The Zona da Mata comprises an area of about 36 000 km² and lies in the Atlantic Rainforest in the southeast of the state of Minas Gerais (Figure 2.1). Most of the land in the Zona da Mata is owned by landlords and a newly emerging class of agro-industrial corporations. Farm workers, sharecroppers, and smallholder farmers also rely on the land for their livelihoods. They are amongst the most marginalised of the groups in the region. Sharecroppers rent land from landlords in exchange for part of the harvest. The cost of inputs such as chemical fertilisers is often also shared between the landlord and the sharecropper. Like sharecroppers, rural workers do not own land. They are hired by rural estates to work as day labourers and are often hired to perform a specific task, such as harvesting, weeding or pruning. Smallholder farmers own small pieces of land. However, these three categories are not mutually exclusive. Smallholders often also engage in sharecropping and/or work as rural workers during the harvesting season. Similarly, landless sharecroppers often also work as day labourers.

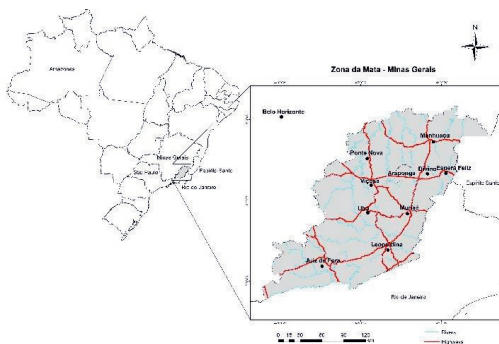


Figure 2.1 Map of Brazil and the Zona da Mata

From the early 1960s onwards the Brazilian Institute for Coffee and the government Organisation of Technical Assistance and Rural Extension Services (EMATER) promoted the 'Green Revolution' in the state of Minas Gerais. Their objective was to spur economic growth in the region by modernising and commercialising agriculture. Most interventions were directed at the production of coffee, which was seen as the most profitable cash crop in the region. Interventions provided financial incentives to remove low producing coffee trees and to plant new ones (Nabuco, 1990) as well as agricultural advice and rural credit under the condition that a package of Green Revolution technologies and prescriptions was used (Gomes, 1986).

Through the Green Revolution chemical fertilisers, lime and agro-toxins became part of farm assemblages in the Zona da Mata. Farms were directed at production of coffee under prescriptions that were the same for the whole of Brazil; indifferent to its diverse regions and types of farmers (Gomes, 1986). Coffee was to be produced as monocrop, under full sun and with a fixed, prescribed spacing between the plants. Weeds but also maize and beans, which were often planted in between the coffee, were removed. The planting food crops on other plots, also a common practice amongst sharecroppers and smallholders in the region, was discouraged and became less common. Food, it was said, could be bought from the earnings generated by growing coffee instead of growing it oneself. Landlords often forbade sharecroppers to plant food crops.

Although the Green Revolution led to short-term increases in coffee production it also led to biodiversity loss, soil erosion, deforestation, the pollution and depletion of water sources and indebtedness amongst farmers (Cardoso, 2001; Fernandes et. al., 2005; Cardoso and Mendes, 2006)

As the Green Revolution gained ground, a movement that would later counter the Green Revolution, began to take shape amongst sharecroppers and farmworkers in the Zona da Mata region. In the 1970's farm workers and sharecroppers organised themselves in Base Ecclesial Communities (CEB), small groups consisting of 5 to 20 neighbouring families. The groups held meetings that were self-organised and led by lay leaders. Members would pray and sing at the meetings, but they would also engage in politically oriented readings of biblical texts, informed by liberation theology. The idea of the CEB came from the 1965 Conferência Nacional dos Bispos do Brasil which had at the time embraced liberation theology. Araponga, a small municipality in the Zona da Mata region (Figure 2.1), hosted several CEB groups.

Araponga is a small municipality in the Zona da Mata region. According to a census, the number of inhabitants in the municipality in 2010 was 8,152 of which 62,69% lived in the rural areas (IBGE 2010). Araponga covers an area of 304.4 km² and is located 50 km from Viçosa, 280 km from Belo Horizonte and 378 km from Rio de Janeiro (see figure 2.1). The area has been characterised as inclined and with soils that are generally of low fertility (Valverde 1958). Over 92% of the farms are owned by family farmers² who together occupy 60% of the farm area and who have an average farm size of 8.1 hectares (table 2.1).

Table 2.1. Properties of farms in Araponga (Source: IBGE 2006)

Property	value
Number of farms	1412
Total farm area (ha)	17751
Number of family farms	1308
Area of family farms (ha)	10655
Percentage of the number of family farms	92.6
Percentage of the area of family farms (%)	60.0
Average farm size of non-family farms (ha)	68.2
Average farm size of family farms	8.1

Over 90% of the farms in Araponga produce and sell coffee. According to an agricultural census that took place in 2006 (IBGE 2006) most of the agricultural land in Araponga is under coffee and pasture, which are also responsible for most of the agricultural income generated in the region (table 2.2). The majority of family farms also produce other crops including beans, maize, cassava, rice, sugarcane, legumes, fruits and vegetables which are consumed by the family or sold locally (Campos 2014). This has not been accounted for by the census.

Table 2.2. Properties of some agricultural activities in Araponga (Source: IBGE 2006)

Property	Value
Area of forest (%)	21.3
Area of pasture (%)	43.1
Area of coffee (%)	31.2
Percentage of farms selling coffee	91.5
Income from coffee (thousand reais)	16655
Percentage of farms selling milk	12.8
Income from milk (thousand reais)	630
Percentage of farms selling maize and beans	36.5
Income from maize and beans (thousand reais)	432

² Family farms have been defined by the Brazilian national law nº 11.326/2006. The law states that family farms undertake economic activities in rural areas, earn below a maximum set income, use family labour for their activities, and generate income from land and family based activities.

Between 1996 and 2006 the number of farms smaller than 50ha increased from 544 to 1.358. This was in part due to the Arapongan land conquest movement through which rural workers and sharecroppers purchased land (Campos 2014).

The origins of Arapongan land conquest movement can be traced back to the CEB. The CEBs made their entry in Araponga in the 1980s and introduced critical ideas from liberation theology. During meetings sharecroppers and farm workers jointly reflected on these ideas and discussed how they related to their everyday lives. This led them to problematize their relation to their landlords. They received only half of the harvest and had to do all the physical work. They also had no say over what crops to grow and how to grow them. Sharecroppers began to perceive this as a form of inequality and injustice. Through the CEB meetings and readings, members also began to embrace notions of equality, unity and solidarity between marginalised families and their neighbours.

To tackle these newly perceived injustices the Arapongan Rural Workers' Union (STR) was founded in 1989. The STR offered support to its members by drafting sharecropping agreement contracts for them, by offering legal support when there was a dispute with a landlord and, later, also helped smallholder farmers to acquire legal property titles for their land. While the union was being set up, however, sharecroppers and rural workers realised that this would not be enough. They would still be dependent on landlords and continue to lead a restricted life under their control. It was within this context that the Land Acquisition Movement arose.

The Land Acquisition movement comprised groups of sharecroppers and rural workers who pooled their resources to collectively purchase land. Between 1989 and 2010, 161 sharecroppers and workers purchased land, comprising an area of over 700 hectares. (Campos, 2014). The average purchase size was six hectares per farmer. The movement also attracted Arapongans who had migrated to live in urban marginalized communities in São Paulo or Rio de Janeiro. They returned to Araponga to purchase land and make a living as a farmer.

Although land offered these new farmers a new-found freedom from their landlords, they soon encountered another problem. Much of the land they had purchased was degraded. Some of the land was degraded to the extent that coffee would no longer grow there. Before selling the land, landowners had cultivated pasture without appropriate management, leading to a scarcity of resources and production:

"There was no coffee tree, not a single tree. So we were on land that was ours. We had all the autonomy but no production." (farmer in Araponga)

Farmers also saw how their monoculture-based farming practices were further degrading land and leading to a decline in production. They feared that by continuing to farm in accordance with Green Revolution practices, they would jeopardise the future of their farms.

Another group that was concerned with the Green Revolution was the Viçosa Alternative Agriculture Group (GAAV). The GAAV was founded by a group of students from the Federal University of Viçosa (UFV) who were interested in agroecology³. Together with another group, named ALFA, they established a garden to experiment with alternative farming practices, started a restaurant that served organic meals, organised discussions and participated in congresses on alternative agriculture. They noticed, however, that they were reaching only a small number of farmers, and with little impact. They came up with the idea of creating a small, locally situated and practically oriented research centre. In 1987, they founded the Centre of Alternative Technologies of the Zona da Mata (CTA-ZM) together with 13 rural worker unions in the Zona da Mata. The CTA-ZM now operates in more than 10 municipalities of the Zona da Mata where the Rural Workers' unions are active. This includes the municipality of Araponga. Together with the Federal University of Viçosa, farmers' organisations and CTA-ZM started a trajectory of collaboration that continues today.

In the beginning, the alliance promoted farming practices that they themselves had identified as sustainable. However, they soon realised that by working in this way technicians predefined the

³ At the time, the term 'alternative agriculture' was used. From about 1999, onwards alternative agriculture was renamed agroecology.

problems and solutions for farmers (Cardoso and Ferrari, 2006; Cardoso and Mendes, 2015). The methodology and the indicators that researchers and technicians used for monitoring project impact were, for instance, not seen to reflect the way in which farmers saw success (Cardoso and Ferrari, 2006). They then shifted their focus from promoting technologies to facilitating processes with groups of farmers in order to collectively explore problems they were facing and define actions to be taken. During these processes, scientific methods were questioned by, and adapted or redeveloped with the help of, farmers.

One of the first interventions facilitated by the agroecology alliance took place in 1993 in Araponga, in response to a request from the Arapongan Farmers' Union that farmers be given an opportunity to explore their problems. Meetings were organised in which participating farmers mapped and prioritised the challenges they were facing. Topics included soil degradation, the health effects of chemical pesticides and insecure land rights. According to the CTA-ZM farmers were the ones that explained the problem to staff members rather than the other way around. Farmers were the ones to remark that 'the soil was weak'. This was picked up by the NGO staff and led to the establishment of the Terra Forte (strong soil) committee (Cardoso et. al., 2001; CTA-ZM, 2005). As this and other interventions evolved, farmers in the Zona da Mata came to recognise the alliance as a legitimate and capable actor in addressing the problems they faced (Cardoso and Mendes, 2015).

2.4.2 Weeds for a 'strong soil'

Farms in Araponga were suffering from land degradation. Ploughing, which was done to control weeds, left the soil bare and loose, and therefore prone to erosion. Soil erosion was leading to significant reductions in coffee yields and led Arapongan farmers and the Arapongan Rural Workers Union to declare soil erosion as the most urgent problems they were facing.

To find and devise solutions to counter soil erosion farmers, the CTA and the UFV had to challenge the view, propagated by the Green Revolution, that weeds are always competitors for water, light and nutrients, and therefore have to be completely removed. To find solutions to soil erosion the Terra Forte committee forged new alignments between farmers, the farmers union, the CTA and the UFV to create a protected space to reflect upon alternative ideas, experiment with alternative practices and develop alternative knowledge. This politically repositioned agriculture, allowing farmers, the CTA and the UFV to use ideas from agroecology and to search for positive alignments between coffee and weeds. New practices were developed and tested via on-farm experiments.

In the end, several practices were developed that protected the soil from erosion and that were based on an ecological re-grounding of farming. Weeds made their entry in the farm assemblage and were no longer seen as competitors of coffee but as producers of soil cover and organic matter. Three practices that became widespread in Araponga were selective weeding, mulching and cover cropping. With selective weeding farmers ploughed under or pulled out only those weed types that they had actually observed to have negative effects on the crop. The other weeds were chopped. The roots were deliberately left intact so that they continued to hold the soil and the chopped-off part was left as a mulch to cover the soil. These practices protected the soil from erosion and over time the weeds also became producers of organic matter, which helped to make the soil more fertile⁴. With cover cropping, farmers deliberately planted vegetation to cover the soil. Some cover crops, including mucuna (*mucuna pruriens*), feijão guandu (*cajanus cajan*), calopogônio (*Calopogonium muconoides*) and crotalaria (*crotalaria juncea*) were also used as green manures which help to fix nitrogen in the soil, thus improving its quality. Measurements found reductions in soil erosion from 2611.9 to up to 217.3 kg of soil per hectare per year when practices to protect erosion were combined in Araponga (Souza, 2006).

Practices were also developed to re-generate degraded lands. These were mostly used on soils that would no longer produce coffee or other crops. On these soils farmers allowed spontaneous vegetation to grow or planted a specific sequence and combination of vegetation. This vegetation would be chopped down and incorporated into the soil. After some time organic matter builds up

⁴ Farmers also valued these practices because chopping weeds using a scythe is less heavy than ploughing them under with a hoe.

in the soil make it more fertile. By restoring degraded lands in these ways, some farmers were able to convert degraded pasture lands into productive areas for maize, coffee and other crops.

"The subsoil was shallow, I had to manage it with vegetation for seven years before I was able to plant coffee. [...] I planted different types of vegetation. So that roots could penetrate the soil. So that they open the soil. And create pores for water to enter, for organic matter to enter. For organic matter to turn into humus. So that the soil fattens a bit and enables me to plant coffee." (João, Arapongan farmer)

Through the discourse on agroecology farmers came to re-appreciate their own resources and the resources that they could produce themselves. This is also visible in the Ten Commandments (Table 2.3), a set of principles drafted by the core group of the Land Acquisition Movement in 1995. Although the purpose of Ten Commandments was to avoid opportunistic behaviour within the land acquisition movement, the influence of agroecology, or affinity to it, is evident in commandments 1, 3, 8, 9 and 10 which emphasise the importance of appreciating own resources and relations of trust.

Table 2.3: The 10 Commandments in the Joint Land Acquisition Movement (Source: CTA-ZM 2002: 26)

-
1. **Be interested in the land** – love the land and be committed.
 2. **Behaviour in the group** – be honest; do not lie; do not take individualist decisions and participate in the meetings.
 3. **Environment** – have environmental awareness.
 4. **Division** – form a responsible group and do not take rash decisions.
 5. **Land acquisition** – save money to buy land; keep in mind that this is possible; live in harmony with the community.
 6. **Ways to interact** – enter into dialogue with and show understanding towards others; deal with issues that concern the family; participate and take part in religious reflection in groups; be independent of sects.
 7. **Women's participation and contribution** – struggle and encourage your partner; insist your name appears in documents; do not feel ashamed to be a peasant; participate in land sharing and in group decisions.
 8. **Agricultural participation** – participate in labour exchange and 'bee arrangements'; recover and preserve the soil; visit your neighbour's farm; use leguminous species.
 9. **The way to use resources** – use animal draft power for group work; use animals with skilled people who have experience working with them; acknowledge the greatest demands on labour; take care of the animals.
 10. **The way to use the farm resources** – conserve and expand roads; keep the trails; use and offer resources like water mills, sugar cane mills, pottery etc.; keep water taps closed when water is scarce; control small animals so they do not damage neighbouring areas.
-

Agroecology also made farmers, and other actors, more responsive to non-human nature and provided a loose framework in which farmers could position their own experiences and observations (Botelho et. al. 2016). This was important to find new, productive alignments between nature and farming.

"It is not just agroecology. It is agroecology based on various details. These details are present in everyday life and work. You can see them. When you are working you see: "Hey this needs to be improved. Let me search for a specie that allows me to solve this problem." You just have to work in the area and you'll see all this details. You will be modifying or improving the farm every day." (João, Arapongan farmer)

2.4.3 Letting the forest in

Once they had managed to halt soil erosion many farmers in Araponga ran into a new challenge. The price of chemical fertilisers was increasing while the price of coffee remained the same. This was putting pressure on the net income of farmers.

All the money comes from the coffee. And then, depending on how much money you have made, you have to return all the money to the coffee again, in the form of chemical fertiliser. Maria, Arapongan farmer

The price of coffee is stable but the costs of fertiliser increased. So it ends up that he who produces coffee gains less. Those who continue this habit will have a serious problem. Samuel, Arapongan farmer

Some of the farmers that were interviewed farmers argued that they sought to offset this effect by working harder – by putting more effort into pruning or weeding, for example. These efforts, however, took a lot of time, taking away their freedom to do other things. Some farmers also began to apply lower amounts of chemical fertilisers, and got caught in a negative spiral. Less fertiliser led to lower yields and coffee earnings, leaving these farmers with even less money to buy fertiliser for the season after. Many of the interviewed farmers were aware that world phosphate reserves were diminishing, and thought it unlikely that fertiliser prices would drop again. In this context, farmers began to question their dependency on these commodity markets. At the time growing trees in the coffee fields had already been promoted as a measure to reduce erosion, now farmers and NGO staff wanted to explore the potential of trees to provide nutrients and reduce their dependency on chemical fertilisers.

Similar to weeds, farmers, informed by the Green Revolution, saw trees primarily as competitors for water, nutrients and light. For the efficient production of coffee, trees, and any other plants besides the coffee, were always removed. Trees were also seen as breaking up the neat rows in which the coffee was planted, therefore affecting the efficiency with which fields could be weeded and coffee harvested and pruned.

Again, the Green Revolution was challenged and agriculture was politically repositioned when the CTA, UFV and Rural Workers' Unions aligned to start the participatory agroforestry systems programme in 1994, which created a new space for alternative knowledge and practices on trees and coffee to be developed. Between 1994 and 1997, 39 agroforestry experiments involving 33 family farmers in 11 municipalities took place (Gjorup et. al., 2004; CTA-ZM, 2005). Over 70 species of trees were experimented with.

To allow for the exploration and discovery of positive alignments between trees and coffee cultivation the programme was set up as a learning process that put the observations and experiences of farmers central in selecting, rejecting, designing, experimenting with, evaluating, and fine-tuning solutions (Cardoso, 2001, Botelho et. al. 2016). Through the experiments farmers for instance observed how different species competed with coffee, produced different amounts of biomass and needed labour to manage the species. On the basis of these experiences desirable species and traits were identified to further experiment with.

In the end Araponga farmers further re-grounded agriculture by finding new productive alignments between coffee, trees and microorganisms. These alignments allowed new flows of nutrients and organic matter to enter the farm. Now, instead of removing vegetation from the coffee fields, farmers in Araponga were actively letting the forest in. Many trees grew spontaneously, others were planted or seeded by the farmers. Farmers came to plant different tree species and varieties in order to deliver a range of nutrients to the coffee plantations (Duarte et al., 2013). They planted varieties such as fedegoso (*Senna macranthera*), ingá (*Inga sp.*), jacarandá-branco (*Plathypodium elegans*) and garapa (*Apuleia leiocarpa*), because of their capacity to derive desirable nutrients from various sources. One of these sources is the air from which leguminous trees capture nitrogen. Another nutrient source is the deeper layers of soil. Farmers thus used deep-rooting tree species to tap nutrients from these layers. A final source is the phosphorus that is strongly bound to the soil and is considered to be unavailable. Farmers accessed these nutrients by managing tree varieties that host mycorrhizal fungi. The fungi are able to adsorb strongly bound phosphorus and exchange this with carbon compounds produced by the tree. The nutrients the trees capture are stored within the tree itself (Cardoso and Kuyper, 2006). Farmers harvested these nutrients by pruning the branches of these trees or by waiting

until the tree lost its leaves naturally. They timed the moment of pruning carefully, or selected varieties that lose their leaves at the time when the coffee needs nutrients the most. Microorganisms play an important role in converting nutrients in the leaves into forms that can be used by coffee plants. Some farmers began to protect or tried to enhance the population of microorganisms. For many, this was an extra reason to diminish the use of chemical fertiliser, which has harmful effects on microorganisms.

Through the alignment between trees and coffee farmers were able to reduce their dependency on chemical fertilisers (Duarte et al., 2013; Mendonca and Stott, 2003), enabling them to economically re-position their farm vis a vis commodity markets and farm more autonomously.

The experiments with trees began with the agroforestry programme but soon after, many farmers began to plant trees of their own accord. Farmers obtained saplings from neighbouring forests or forest fragments, as well as from family and from colleagues in the CEB and began to manage and protect some of the trees that emerged in the field spontaneously (Martins, 2007).

Some farmers also began to undertake their own experiments, some with successful results. One of these aligned trees and other vegetation with streams that ran through the farm. Many of these streams had run dry or had almost dried over the time of one generation. The trees and vegetation planted, transformed the soil so that it could hold more water. As a result, more water was found flowing in the streams. Some streams that used to run dry for part of the year now also have a more continuous flow. Farmers used this new water for drinking, as well as for their crops and livestock (Ferrari et al., 2010).

Other experiments initiated by farmers include finding different trees that allow for the survival of microorganisms throughout the year. Microorganisms were found to play an important role in making flows of nutrients generated by the trees available to the coffee. Many of these microorganisms live in leaf residues. To ensure that a large population of microorganisms survive throughout the entire year, some farmers planted trees that lose their leaves at different times of the year (De Souza et al., 2010). This was done to ensure that there was always a leaf layer covering the soil for microorganisms to live in or feed from. One farmer began to collect microorganisms from the forest and added them to his coffee field. This was done by applying a layer of leaf litter from the forest onto the coffee fields.

During these experiments many farmers also discovered that next to delivering nutrients, trees produced other values. Farmers valued the new landscape that trees produced – certain varieties were planted specifically to make the landscape more beautiful. They also valued the shade of the trees when working in the fields and the fact that the trees protect the coffee from rain and wind storms. Many farmers also valued the wildlife that the trees host:

“Haha, with all these trees birds no longer go to the nature reserve but come to my property instead.” (Domingo, Arapongan farmer)

2.4.4 ‘We need food crops, we don’t need coffee’

Next to their dependency on chemical fertilisers farmers were also struggling with the rising price of food in the local supermarkets.

“When the coffee price drops, they say it breaks your right arm. Because people don’t have anything else. They have no maize, no beans.” (Neusa, Arapongan farmer)

Prior to the Green Revolution most farmers in the Zona da Mata region had planted food crops in addition to coffee. The Green Revolution discouraged this on the basis that it was more efficient to specialise in coffee and buy food on the market from the coffee earnings (Cardoso 2001). To cope with increasing food prices, the interviewed Arapongan farmers said they bought less vegetable and fruit and that their diets came to consist mostly of rice and other staples. However, as periods of hunger and illness became more frequent, they began to challenge how they had become dependent on coffee to buy their food:

“Many of the people said that no wealth can be created with food crops. And that coffee should be grown instead. But this is a proposition with which I totally disagree. We need

food crops, which is maize, beans and rice. We don't need coffee." (Afonso, Arapongan farmer)

Farmers began to re-positioned themselves vis a vis commodity markets by producing their own food. Food crops made their entry in various parts of the farm. One of these was the spaces between the coffee plants and was taken up by the agroforestry programme. Farmers cultivated avocados, bananas, prunes, citrus, papaya and peach trees in the coffee fields. For many, the coffee fields became an important source of fruit which was sometimes processed. Some farmers made soap from avocado; others used it as a major source of pig feed, which allowed them to keep a larger number of pigs. Fourteen varieties of leguminous trees were also used for animal feed; seven varieties became a source of construction wood; eight leguminous tree varieties were also used as a source of firewood; five yielded wood to construct fences and four were used for wood to build ox-drawn wagons. In addition, farmers harvested parts that are used for medicinal purposes from six varieties (Martins, 2007).

Another space for food production was the *lavoura branca* field. In the past, these fields reserved for the production of arable food crops were common in the region. However, *lavoura branca* declined with the advent of the Green Revolution. Farmers in Araponga re-established *lavoura branca* fields where they cultivated maize, beans, potatoes and cassava, thus producing a large part of their families' staple diet themselves. Some of these crops were also processed. Sugarcane was processed into the raw sugar derivatives *açúcar mascavo* and *rapadura*. Cassava and maize were processed into flours and into the starch derivatives, *amido de milho* and *fécula de mandioca*. These all form important ingredients for dishes and pastries that are typical in the region.

The home gardens were another part on the farm where food production took place and which farmers strengthened. These gardens became the most important source of vegetables for Arapongan farmers. In addition to this, many farmers started to keep more small livestock around the house. Chicken were kept for their meat and eggs, pigs for meat. Pig fat was used as an alternative to cooking oil and also to conserve meat. Animal production was integrated into the rest of the farm activities. Farmers' self-produced maize, vegetable remainders and fruits formed important sources of feed for the animals. The manure of the animals was in turn used as a fertiliser.

A final area which farmers put to use were the forests neighbouring the farm and forest patches inside the farm. They harvested parts from the species *Solidago chilensis*, *Ageratum conyzoides* for medicinal purposes. They also harvested edible wild plants: *Portulaca oleracea*, *Amaranthus deflexus* and *Emilia sonchifolia*. These varieties are especially eaten in times of drought, when the production of other crops is low (Souto, 2006). These same species were also protected and managed by the farmer when they emerged spontaneously as weeds in the coffee field and other cultivated areas. Management does not necessarily entail planting, but selected weeding, or removing parts of the plant to prevent it from spreading and interfering with the coffee plant.

Farmers re-appreciated their own food not only because of its value as a commodity, or of not having to buy a commodity, but also as a way to provide the family with food and freedom:

"Coffee has made a lot of money for some people but it has also impoverished many. That is why we work with agroecology, you work with diversity within your property. You are not dependent on only one product, you have more security. You don't need a lot of money to buy things from outside. You don't get into a lot of debt when you are not only dependent on coffee. If the dollar appreciates, if the dollar depreciates, we will not be hungry." (Samuel, Arapongan farmer)

Another value was health and family. Many farmers in Araponga began to produce and eat more, and a larger diversity of, fruits and vegetables. These foods were appreciated for their high nutritious values. Some farmers produced a surplus of vegetables to ensure that family members in the city would also have healthy food. A further value was the maintenance of labour exchange relations. Patches of sugarcane were planted in the coffee fields. These patches were not for the family or the market. They served as a 'snack' that was consumed during the breaks when fellow farmers came to help with harvesting or weeding the coffee. Certain foods, such as cream cheese, were produced only to be given as a gift to other farmers.

2.4.5 Labour exchange, collectives, and new markets

The re-positioning of farming vis a vis commodity markets to create farm autonomy occurred not only through the production of own food and inputs but also by constructing nested markets (Van der Ploeg et al., 2012; Hebinck et al., 2015) and by re-discovering forms of social exchange based on reciprocity (Sabourin, 2017).

Some of the new farming practices in Araponga demanded more labour from the farmers. One way in which farmers dealt with this was by creating new alignments with other farmers through *troca de dias*, a labour exchange scheme that had almost disappeared in the region. *Troca de dias* became especially popular for the harvesting of coffee. Through this reciprocal practice, a farmer receives help from a group of farmers and returns the favour by helping each of the other farmers when it was their turn to harvest. *Troca de dias* allows all the coffee to be harvested at once which in turn enabled farmers to dry and roast all their coffee at once. *Troca de dias* was not only valued for the labour it provides but also as a way to maintain and deepen friendships. Many farmers also mentioned that there is more 'joy' in working together and began to use *troca de dias* for planting and weeding coffee and arable food crops, in addition to harvesting.

Other collective initiatives that operates on the basis of trust was the construction and management of a small artisanal sugar mill and the foundation of a small organic coffee cooperative, through which farmers pool their resources to hire a truck and jointly sell their coffee to a large cooperative in the more distant city of Novo Resende, a cooperative that buys organic coffee from farmers for a higher price.

Farmers also began to make new alignments between food crops, the Arapongan farmers association (AFA) and citizens through the creation of a small farmers' shop, the *mercadinho*, that established in the centre of the municipality by the AFA. The association provided a building for the shop as well as a shop attendant for free. In the shop Arapongan farmers sell their produce directly to consumers. It is the farmers' responsibility to bring their produce to the shop, i.e. the shop does not buy the produce from the farmer. The shop now sells maize, beans, potatoes, yams and coffee. In addition, vegetables such as lettuce and cabbage, and fruits such as avocados and bananas are sold, as well as foods that farmers have processed such as sugar, cheese, cassava flour and maize flour. Farmers value the shop because no contract is needed, the goods can be dropped off at any time and they can sell a whole variety of products. This works well with the diversified production of their farms and enables them to sell any surplus they have.

"When you are able to get things directly from producer to consumer, both gain. Because you can sell for more while the consumer pays less. Unfortunately it is usually the middlemen that take the largest share." (Samuel, Arapongan farmer)

An open farmers' market was also established: held once a week in the urban part of the municipality, it sold similar products to those sold in the farmers' shop. New alignments were also created with the school. AFA mobilised a group of farmers to take part in the national school feeding programme in 2010. Through this programme schools buy part of their ingredients to make school meals directly from farmers in the municipality. Alignments were also made with citizens in Vicosas when AFA, the CTA, the UFV and farmer organisations in other municipalities created the *Rede Raízes da Mata*, an open market in Viçosa that sources directly from a network of farmers in neighbouring municipalities.

Small groups of farmers also constructed markets themselves. A group of three farmers, for example, began to deliver potatoes and yams to people that live in the municipality. They delivered them on horseback or on motorbikes to people who had placed an order. Usually large orders were made. Another type of exchange that small groups undertook was a kind of barter trade. Neighbouring families would agree that one of them would specialise in growing a particular vegetable or bean type, while the other family would cultivate something else. After harvest, farmers would exchange vegetables and beans. This practice is valued both because it saves the family labour and because it maintains or strengthens bonds with other families.

2.5. Discussion and conclusion

Together with the CTA-ZM, STR and the UFV, farmers in Araponga challenged the Green Revolution and reversed the cycle of degradation and exploitation in which they were situated by generating resourceful farming practices. A threefold re-assembling processes of re-appreciation, re-grounding and re-positioning lay at the heart of this development. Local natural resources and biodiversity were re-appreciated through the collective construction of a new discourse on farming, namely agroecological and regenerative farming. Farming was re-grounded in local agroecosystems and these were regenerated and enriched by strengthening soils and enhancing biodiversity. Repositioning occurred through the creation of new, innovative arrangements and relations around knowledge, technology, markets and policy. Founding various farmers' organisations and collaborating with the CTA and the UFV, created room for new knowledge and experimentation. By producing their own food and by constructing nested markets, farmers distanced themselves from global commodity markets, giving them more room to make changes to their farms.

The threefold process of re-appreciation, re-grounding and re-positioning culminated in the construction of a socio-material resource base that allowed farmers to farm more autonomously, that reassembled the social, cultural and material and that reworked the boundary between nature and (agri)culture. Farmers 'let the forest in' by allowing particular species to emerge and actively planting various tree species in their coffee fields. The connection with some of these trees allowed new flows of phosphorous (Cardoso et al., 2003), nitrogen and other nutrients to become part of the productive cycle of the farm. Other trees such as *Inga* (*Inga sp.*) brought in natural enemies that control pests such as the coffee leaf miner (Rezende et al., 2014) and the coffee berry borer (Moreira, 2012), reducing the necessity to apply chemical pesticides. Yet other trees such as papaya, mango, avocado and banana provided a new source of food for the farming family, as well as fodder for their livestock and the region's wildlife (De Souza et al., 2010). 'Weeds' were also allowed to emerge in their fields. As a result, soil disturbance was reduced and weeds allowed new flows of organic matter and soil life to enter and enrich the soil, making it possible to grow more demanding crops (Mendonça and Stott, 2003).

The construction of the socio-material resource base also involved shifting away from the production of cash crops with a single commodity value to the revaluation and production of multiple cultural, economic and social values including taste, food security, health, a fertile soil, friendship with fellow farmers, shade, a beautiful landscape, and so on.

This article demonstrates how farmers re-assembled nature-culture in Araponga by forging productive alignments with non-human agents thus giving rise to regenerative or restoration agriculture. Farm assemblages were reconstituted to include productive alignments with weeds, trees, microorganisms and other non-human agents that had been seen as undesirable and therefore repressed under the prior Green Revolution mode of farming. Through these connections new resource flows, such as light, organic matter, nutrients and water became part of the farm. Ultimately, this allowed the farm to produce not only a single commoditised output but multiple values, including fertile soils, clean water, biodiversity, nutrition security, and a beautiful landscape.

Key to forging productive connections with non-human agents was the alliance with the CTA and the UFV, which provided a safe space for experimentation, and the construction and valorisation of the experiential knowledge needed for the development and fine-tuning of new farm practices. The creation of a self-managed resource base and nested markets was also crucial for farm transformation, since this enabled farmers to farm as autonomously as possible, unhampered by the control of dominant markets and technologies.

Chapter 3

**From managing transitions
towards building
movements of affect:
advancing agroecological
practices and
transformation in Brazil**

Abstract

Policy and scholarly efforts to foster sustainable transformations tend to focus on technical and economic incentives; thus far, however, the lived experiences and affects underlying these transformations have received less attention. Using the agroecology movement in Brazil, this article looks into the way in which social movements embrace affect to transform the relation between human and non-human nature. It shows that affective relations with the land, plants, animals and fellow community members play a decisive role in mobilising people and fostering the creation of new farming, community and market practices. In contrast with other, technological and economical approaches to sustainable transformations, a focus on affect sheds light on unsustainable relations and practices that are situated in peoples everyday lives, on solutions that people devise themselves and on powerful agents that uphold unsustainability and inequality. "Movements of affect" not only address these issues, they also build and draw on the potential proper to people and their relation with nature to realise transformation.

Keywords: transformation, transition, food movements, peasant movements, biodiversity

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3.1 Introduction

A growing number of initiatives and approaches are emerging that seek to transform agriculture and food production by reconnecting it to biodiversity conservation. Historically these activities have been treated separately, with food production being addressed via technological innovation, intensification, and marketisation (Van der Ploeg 2006), and biodiversity conservation being pursued by setting aside protected areas and protecting endangered species (Adams and Hutton 2007). This separation between food production and conservation has not managed to address problems such as pollution, natural resource degradation, biodiversity loss, social inequality, and the 'pushing' of farm labour to cities. Social movements such as the agroecology movement (Van den Berg et. al. 2018b, Altieri and Toledo 2011), the environmental justice movement (Apostolopoulou and Cortes-Vazquez 2018, Temper 2018) and peasant movements (Van den Berg et. al. 2018a, Van der Ploeg 2008), seek to undo this separation. They offer alternative approaches to food production and nature conservation, connecting food production to equity, social justice, and biodiversity conservation in different ways. Some of these approaches are now gaining interest from researchers and policy makers who see them to contain solutions for wider transformations.

Many studies on sustainability transformations approach transformation from the perspective of social-ecological or socio-technical systems (Scoones et al. 2018, Smith and Stirling 2008); two complementary approaches that scholars have increasingly sought to combine (e.g. Holscher et al. 2018, Scoones et al. 2018, Fischer-Kowalski 2009, Foxon et al. 2008). Here, food production and biodiversity are understood to be part of systems that are linked to social, ecological and technical factors. Sustainability transformations are then realised through interventions, mostly in the form of policies, that target one or more of these factors. Specifically, the literature on socio-ecological systems places emphasis on those interventions that make the system more sustainable in terms of enhancing its resilience to environmental change and not surpassing particular ecological thresholds while providing benefits to society (Folke et al. 2010, Foxon et al. 2008, Holling 1973). Increasingly, it uses to concept of ecosystem services to support an economic logic to assess and improve sustainability, in which ecosystems represent properties and processes which benefit users who are part of socio-ecological systems (Ostrom & Cox, 2010). Literature on socio-technical systems focuses on more social and technical innovations rather than economic value, but equally places emphasis on the social context in which technologies are embedded and on interventions that push for sustainable innovations (Rotmans and Loorbach 2007, Geels 2002). It uses the notion of transition management to denote how these innovations can be deliberately created in niches and with support of transition coalitions, often constituted by influential business, policy and civil society actors, are used to reconfigure socio-technical systems (e.g. Avelino & Wittmayer 2016, Kemp and Rotmans 2005, Rotmans et al. 2001).

Both the literatures on social-ecological and socio-technical systems focus predominantly on technical and economic incentives for transforming relations between human and non-human nature. As such, less scholarly attention has been placed on other, non-economic and non-technical, dimensions of transformation. Particularly, relations that uphold patterns of exploitation and inequality among people and between people and nature, have received relatively little exploration (Scoones et al. 2018, see Shove et al., 2012 for a notable exception). Also, the role of people's affects - their lived experiences and actions in connection with culture, nature, and the land - have thus far received little attention, even when new global frameworks on biodiversity such as the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) explicitly recognise these dimensions to be of importance (Diaz et al. 2018).

Several authors have pointed to the value of applying a social movement perspective on transformation (e.g. Pelenc et. al 2019, Temper et. al. 2018) to address relations of exploitation and inequality in processes of transformation. They argue that some social movements, challenge these relations while promoting more sustainable and emancipatory alternatives. The literature on social movements has also increasingly pointed towards the importance of affect (e.g. Edelman 2001, McFarlane 2009, Davies 2012). However few empirical studies have been carried out that focus on the role of affect in mobilising people for transformation (see Escobar 2016, Khoo 2015, De La Cadena 2015 for some notable exceptions).

In this article we use the notion of affect to explore transformations that are set in motion by social movements. The objective is to explore the role of affect in mobilizing people and

establishing transformative practices. We look at the case of agroecology in Brazil, as it involves strong social movements that develop practices together with researchers, technicians and peasants (Altieri and Toledo 2011, Rosset and Martinez-Torres 2012). Our analysis draws on the process of agroecological transformation playing out in the Zona da Mata in the state of Minas Gerais, Brazil, over the past thirty years. Below, we first expand on the notion of affect by looking at the concepts of affective labour and embodiment, and describe our methodology. We then use the results of our case study to illustrate how the agroecology movement employed affective labour to mobilise people and foster the embodiment of new farming, community and market practices. Our findings demonstrate that, in contrast with mainstream approaches to sustainable transformations, a focus on affect sheds light on unsustainable relations and practices that are situated in peoples everyday lives, on solutions that people devise themselves and on powerful agents that uphold unsustainability and inequality. "Movements of affect" not only address these issues, they also build and draw on the potential proper to people and their relation with nature to realise transformation.

3.2 Affect, social movements and transformation

3.2.1 Social movements and affective labour

To gain a better understanding of transformation by social movements, this research builds on a Spinozan-Deleuzian understanding of affect as bodily sensations that draw people in and out of the relations that are constantly being created and that constantly create them (Massumi 2015, Deleuze 1988). Unlike theories of sustainability transformation, which take human and non-human nature (plants, animals, land, etc.) to have fixed, individual behavioural characteristics, affect theory understands behaviour as resulting from multiple relationships and interactions that are held together by affect (Braidotti 2013). Human are thus not only linked to non-human nature because of economic interests, but they form relations and constellations that are held together by bodily sensations such as feelings, wishes, passions and grievances (Massumi 2015). From this perspective, transformation is not something that can be neatly managed or controlled with, for example, technologies or economic incentives. Rather, transformation needs to be fostered by affectively pulling human and non-human nature out of existing relations and practices, and drawing them into new ones (Singh 2013).

The work done to pull human and non-human nature out of a particular relation and into a new one has been referred to as affective labour. Affective labour mobilises human and non-human nature into particular relations by cultivating or manipulating affects (Singh 2013, see also Hardt and Negri 2004). The term affective labour describes, for example, how care relations emerge between mother and child (Weeks 2007), citizens and their food (Sherwood 2018), peasants and their natural environment (Ingold 2000), and people and the forest (Singh 2013). Affective labour has also been used to describe how human and non-human natures are lured into destructive (capitalist) relationships (Woodward and Lea 2010, Hardt and Negri 2004). Capitalism attracts workers to enter into commodity production by presenting the increased consumption that it allows as empowering (Woodward and Lea 2010: 167). In contrast to care relations, capitalist relations separate workers' affects from the actual work that they do. This disempowers workers as their affects are expropriated to generate surplus value rather than used for self-determination. Through the routinisation of specific affects, capitalist constellations moreover slowly exhaust and erode the bodily capacities of human and non-human nature (Woodward and Lea 2010). However, as Hardt and Negri (2004) argue, capitalism cannot appropriate all affects: life's production of affect vastly overflows capitalist relations. According to these authors, in this overflowing lies the potential for challenging capitalism and building alternatives.

Social movements can cultivate affects that overflow capitalist relations. These include human, bodily affects that have not been consolidated into particular values, meaning or identity by capitalism. Khoo (2015) shows that these affects can be cultivated by creating spaces that nourish encounters and give room for pre-conscious, embodied reactions, memory (or lack thereof) and spiritual and other affects and everyday lived experiences. An example of such a space is the

food fair in Ecuador where peasants and citizens have affectively been drawn into relations that go beyond the traditional producer-consumer divide (Sherwood et al 2018). Likewise, affective relations of care between human and non-human nature can also play a role in mobilising agents or drawing them into other relations (Hustak and Myers 2012, Lorimer 2007). De la Cadena (2015) for instance describes how the Runakuna mobilised in a struggle for land not because of its productive agricultural value but to defend the mutual relationships of care that the land harbours between people, mountains, rivers, lagoons, animals and plants. In a similar vein, Singh (2013) shows how collective forest practices brought villagers, forests, plants, animals and trees together and led to the development of a more caring relation with the forest.

3.2.2 Practices of transformation and embodiment

For transformation to occur, affective work and affective encounters and relations between humans and non-humans have to become embedded - or embodied - into particular practices. Embodiment occurs when the affect holding agents form alignments and their interactions become routinized (Braun 2008). Alignments are in continuous interaction and flux with other agents and ideas (Woodward and Lea 2010, Deleuze 1988). They can destabilise when the affect holding agents and ideas together changes and leads them to disperse (what Deleuze and Guattari 1983 call "lines of flight"). This can occur when there is a collision with external agents, ideas or practices (Müller and Schurr 2016). Affective relations can also change due to repetition: every time a practice is performed changes agents' affection and therefore has a potentially destabilising effect on the practice (Davies 2011).

Alignment and subsequent embodiment can occur in two opposite directions. First, through relations of "control" which are hierarchical, with some agents imposing a specific order on others (Pickering 2008, Haraway 1993). They include capitalist relations which can, for instance, be found in some cases of payment for ecosystem services (PES) in which non-human nature has been reduced to an entity or resource that can be measured, quantified and commodified so that it can be marketed to the benefit of powerful agents (Kull 2015, Turnhout et al. 2013). Alignment and embodiment can however also occur through relations of "care" which are horizontal and where non-human nature is not relegated to the role of "other" entities to be acted upon by humans (Singh 2013). They include relations where wild animals are given room to co-exist or live with people rather than having to be managed or contained in specific areas (Boonman-Berson et. al. 2016, Turnhout et. al 2013). Relations of care and control can be understood as two poles in a continuum (Boonman-Berson et. al. 2016, Hinchliffe 2008). Weeding can, for instance, involve the killing of all weeds, the mowing of weeds during particular periods in the growing season, or selectively removing only those weeds that have been observed to have negative effects on other plants.

The affective labour that social movements engage in draws human and non-human agents out of existing affective relations through establishing intentional practices of care. Thus, new relations and alignments re-embodiment in new practices. For alignments to embody in care practices, the alignment has to be productive. An alignment is productive when it increases human and non-human nature's capacity to act and the scope of possible activities. When this capacity to act diminishes, the alignment is conservative and inhibitive and resonates more with relations of control (Gatens and Lloyd 1999). Finding and fostering productive alignments requires a sensible, responsive and responsible approach to non-human nature (Hinchliffe 2008, Pickering 2008, Haraway 1992). Non-human nature thus plays a key role in forming care practices (Hustak and Myers 2012, Lorimer 2007). The embodiment of a particular practice also entails the formation of new knowledge, ideas and values that support the practice (Gatens and Lloyd 1999, Latimer and Miele 2013). Finally, embodiment requires a supporting institutional environment. Not only agents who are physically close/nearby (e.g. the soil, birds or micro-organisms) but also more distant supportive agents (e.g. institutional agents, policies and markets) have to be incorporated in the alignment for a practice to assume existence (Currier 2003, Deleuze 1988).

3.3 Case description and methods

The article uses transformation by the agroecology movement in the Zona da Mata region in the state of Minas Gerais, Brazil as a case study. Here, agroecology emerged in the 1980s as an alternative to the Green Revolution and seeks progress by building on local rather than external resources and knowledge (van den Berg 2018b). In Zona da Mata, the agroecology movement consists of peasants, peasant groups and organisations, the Centre for Alternative Technologies (CTA) and researchers from the Federal University of Viçosa (Cardoso et al. 2001, Cardoso and Mendes 2016). Gatherings organised by various actors in this agroecology movement are important sites where new affective relations are cultivated and new practices are formed.

The research draws on extensive fieldwork carried out in three municipalities in the Zona da Mata in 2008 and in the period 2016-2018. We adopted a qualitative approach to data collection that allowed us to capture various encounters between human and non-human agents, without having to simplify or rely on universal claims about human nature (Schwartz-Shea and Yanow 2012, Ingold 1993). This we consider to be crucial to understanding the complex interactions between social movement and transformation (via affect).

The data consisted of transcribed interviews, notes from participant observation and transcribed recordings from three focus group meetings. Participant observation was carried out by the first author who worked ten days on five different farms. This allowed him to observe how encounters between peasants and non-human nature take place. Observations of 15 gatherings organised by actors promoting agroecology were also conducted. The focus group meetings were held in each of the three municipalities and consisted of 15-40 participants. At the focus group meetings, a Venn diagram was used to facilitate a discussion about what actors and organisations were believed to support or hinder agroecology. Finally, in-depth interviews were carried out with twenty individuals selected on the basis of different levels of participation in gatherings and in the development of agroecological practices. A balance was sought in age and gender. Most interviewees were peasants. Members from peasant organisations, UFV and CTA were also interviewed.

To analyse the collected data, grounded theory (Birks and Mills 2011) was first used to identify different food-biodiversity practices advanced by the agroecology movement. Three types of practices were identified: farming practices (with a focus on affective relations between peasants and non-human nature), community practices (with a focus on affective relations between peasants) and market practices (with a focus on affective relations between peasants and consumers). Once these types of practices were identified another round of coding was conducted with attention on how affective labour mobilises agents to create the three different practices and how these practices become embodied or disembodied. To explore the significance of the findings for socio-ecological and socio-technical transformation, we contrasted the results of the analysis with the literature on ecosystem services and transition management theory.

3.4 The emergence of agroecological practices in the Zona da Mata

3.4.1 Farming practices

The agroecology movement in the Zona da Mata employed affective labour to foster the formation of several farming practices. Affective labour especially consisted of organising encounters between peasants, peasant groups and organisations, the Centre of Alternative Technologies (CTA) and the Federal University of Viçosa (UFV). In the municipality of Araponga, one of the first of these encounters was held in 1989 in the municipality of Araponga, where peasants expressed grievances over their lands, which were degrading as a result of Green Revolution practices. Peasants' grievances met with the wishes of university researchers and CTA staff to bring the newly emerging field of agroecology into practice. At the gathering peasants and researchers reflected on farming practices that were used and what was causing soil degradation (Cardoso et al., 2001). This led to the establishment of the "strong earth" committee, a group of peasants,

union representatives, and staff from NGOs who sought to find ways on how to improve soil quality and strengthen the 'weak' earth. The peasant organisations, CTA and UFV held similar gatherings in other municipalities including Divino and Espera Feliz, where grievances over soil degradation and wishes to take better care of the soil were mobilised to drive processes of continuous learning and reflection and to undertake on-farm experiments and research to devise soil conservation practices, particularly agroforestry (Cardoso et al., 2001; Guijt 2008, Souza et al., 2010, Souza et al. 2012).

In 2008, the encounters organised by the agroecology movement were institutionalised in the intercâmbios, which were inspired by the peasant to peasant gatherings in other Latin American countries (Zanelli et al. 2015). These intercâmbios, which continue to exist today, are held in various municipalities in Zona da Mata including Araponga, Divino and Espera Feliz. At the intercâmbios participants recount inspiring practices, listen to stories by elderlies, for instance about how certain plant varieties were used in the past, and engage in conversations with one another about farming. During these encounters wishes to care more for and work closer to nature are cultivated. These wishes were mobilised to drive discussions and reflections about farm practices that harm non-human nature, such as the use of pesticides:

"All our lives we have lived here [...] we have seen the birds disappear with the time. Here a lot of birds are coming back. But overall many have disappeared [...] and it's because of poison." (D., peasant Divino)

Wishes are also mobilised to reflect upon alternatives:

"Then we started to realise that that plant, that tree, was helping. You could see that fruit trees were helping during the many visits that we had to different farms during the intercâmbios [...]. Then I said to myself: 'We should plant these trees because they do not only help the place, they help the animals, they help the coffee, the earth and they also help us'". (R., peasant Divino)

Affective relations between peasants and non-human nature that were cultivated at the peasant encounters became embodied in different farming practices. The agroecology movement supported the formation of groups working on issues that emerged from the encounters. In these groups peasants, researchers and peasant organisations engaged in a process of discovery, experimentation and learning to explore alignments between humans and nature that could potentially develop into new practices such as agroforestry. This entailed finding alignments that were deemed productive, often through learning-by-doing. For instance, some agroforestry trees peasants experimented with negatively affected the harvest of coffee, or provoked allergic reactions among peasants. Solutions were found in pruning or by replacing them with other trees:

"You have to let the trees grow and prune all the time. To have this nutrient cycle. If you plant a tree and leave it there it will probably do more harm than good to other plants. [...] Also when you let a branch grow a bit and then cut it, it will stand in the way when harvesting coffee." (A., peasant from Divino)

In the end practices were developed that protect and improve the soil; these included green manuring, alternative weeding, cover cropping and agroforestry. In these practices, trees, shrubs and other vegetation are planted or left to grow spontaneously so that they cover the soil and provide it with organic matter. This is done in between cultivated crops such as coffee but also near streams, in fields with degraded soils and in areas of the farm that peasants consider to be "weak" such as steep slopes. Practices were productive in that they effectively protected and regenerated the soil, streams and areas for birds and other wildlife. Trees or vegetation were also found to fix nitrogen, attract pollinators or natural enemies to control pests as well as supply wood, fruits and other consumables to the family and domestic and wild animals (Rezende et al. 2014, Souza et al. 2010).

For agroecology to become embodied in practices, the agroecology movement had to challenge values and knowledge promoted by agri-business, which in the Zona da Mata is constituted by local agricultural shops, coffee plantation owners, cattle ranchers, researchers, technicians and some parties from the municipal prefecture. These agents promote conventional agricultural knowledge, for instance that any type of vegetation will compete with the main crop for nutrients, water and light, and must therefore be removed. Agro-toxin salesmen, often trained agronomists,

moreover move from door to door, visiting peasants in their communities, arguing that if peasants use their products such as pesticides and chemical fertilisers, they will have less work and make more profit. These ideas formed a threat to agroecological alignments:

"One of the big difficulties for us to keep producing in an agroecological way is to maintain this emotional equilibrium.[...] Oftentimes you hear these types of words: 'ah, in a few days you will go hungry, because you will not have any returns, it won't give you any profit. 'You will never drive a car because you plant in this and that way.' [...] You have to maintain a certain equilibrium to not lose hope with people." (A., peasant from Araponga)

To deal with these threats, the agroecology movement construed different knowledge and values. This occurred at the intercâmbios, where conventional knowledge was challenged and new knowledge created through experimentation and drawing on indigenous and scientific knowledges (see also Teixeira et al. 2018a, Teixeira et al. 2018b, Van den Berg et al. 2018b, Botelho et al. 2016). This also changed values; vegetation for instance came to be valued for its ability to protect the soil and contribute positively to peasants' ways of farming and life. The movement also organised campaigns on the damages that agro-toxins cause to the environment and workshops on for instance soil quality:

"Before, we used to plough leaving the soil bare. Today I let the weeds grow, so that the organic material can stay in the soil and each time we gain more freedom from chemical fertilisers." (A., peasant Divino)

Next to creating knowledge, institutional agents such as peasant cooperatives were important for agroecology to become embodied. Agroecology for example introduced the idea of roçar, which in contrast to weeding that was promoted by agribusiness only chops the above-ground part of weeds, thereby leaving the soil covered. To advance the practices of roçar peasant organisations promoted the use of roçadeiras (brush cutters), which could replace the labour intensive weeding with the foíge (scythe). Peasant cooperatives played an important role in making roçadeiras accessible and organising trainings on how to use them.

3.4.2 Community practices

Next to farming practices, the agroecology movement in the Zona da Mata also employed affective labour to foster the formation of community practices - practices in which community members work together on the basis of principles of cooperation, trust, reciprocity and solidarity. Several practices were formed at gatherings organised by the Ecclesiastical Base Communities (CEBs), which later formed one of the bases of the agroecology movement (Cardoso and Mendes 2014). The CEBs consists of small self-led and self-organised groups of neighbouring families spread throughout various municipalities. The CEBs were initiated by the Catholic Church in the 1980s, which at the time was informed by Liberation Theology. At the time, many participating peasants did not own land, but they sharecropped land that was owned by large landlords in exchange for part of the harvest.

The CEBs' affective labour consisted of organising encounters at participants' homes where they pray, sing and reflect upon everyday life. At these encounters, peasants expressed grievances about their situation as sharecroppers and the conditions under which they had to do their work which included abuse by landlords. They expressed dissatisfaction with amongst receiving less than the agreed harvest share, having to comply to demands for extra services and having to work long hours and during bad weather. Peasants also expressed wishes for a freer way of life and farming, in which they could decide themselves when, what, how and for whom they would produce. Grievances and wishes were mobilised in relation to ideas of social justice, freedom, solidarity and sustainability. During these encounters stories were also shared, including one about a man who, after having been severely abused by his landlord, pooled his resources with his two brothers to buy land and establish himself as an independent peasant. In Araponga, grievances, wishes, ideas and stories were further mobilised to form the Collective Land Conquest Movement - an initiative through which peasants organized themselves to pool resources and jointly purchase land (van den Berg 2018a, Campos 2016). The Collective Land Conquest Movement inspired, in 2003, the Land Credit Policy (Crédito Fundiário) Policy, which enable many groups of peasants outside of Araponga to purchase land.

Affective labour was also employed at the intercâmbios (Zanelli et al. 2015), where people share stories, visit different peasants, showcase practices, seeds and plants. Part of the intercâmbios and other gatherings is the *mystica* where participants express wishes, passions, struggles or grievances in the form of dance, theatre, poetry but also through biblical readings, prayers or songs. Grievances were for instance expressed about the drying up and the pollution of water streams and springs, as well as wishes to work together with other peasants. These affects played an important role in shaping new community practices. Many community practices include moments where participants work, eat, drink or sit to talk with one another. Peasants mention that friendship and the satisfaction of working together, rather than alone, are important reasons for them to engage with many of these practices.

The affective relations created at the CEBs and intercâmbios became embodied in several community practices. Next to the collective purchase of land, another community practice is the collective purchase of farm capital, such as a tractor, or the collective construction of a mill that can process sugarcane into sugar. In contrast to land, which once purchased is divided, farm capital is often co-owned after purchase. Rotating credit schemes, where peasants pool money and take turns to use the collected money to make specific farm investments, were also set up. Another community practice is *troca de dias* or labour exchange, where peasants form groups that work on each farm in turn to perform specific tasks such as harvesting, weeding or pruning. Yet another practice is *mutirão*, where peasants join hands to work on something that is perceived to be for the common good. *Mutirão* is an older practice but has recently been revived to deal with practices that mitigate water scarcity. Facilitated by peasant organisations, church groups, the CTA and the UFV low-tech septic tanks and water harvesting structures are built, often on farms or in communal institutions such as schools.

As discussed for farming practices, for agroecology to become embodied in community practices, existing knowledge and values had to be challenged. At the peasant gatherings knowledge brought in by agri-business, such as the idea that hiring paid labour is more efficient than harvesting yourself, as well as values around individualism and competition, were challenged. Also knowledge of community practices and values of solidarity, cooperation and care, were cultivated. The embodiment of community practices was also enabled or supported by institutional agents. Some of these agents, such as the peasant unions and cooperatives in the three municipalities, emerged from peasant encounters. These allied to national peasant federations CONFETRAF (Confederation of Rural Workers and Family Farmers) and CONTAG (Confederation of Workers in Agriculture), which pushed for the Credit for Family Farming policy (PRONAF).

3.4.3 Market practices

Another practice advanced by the agroecology movement are local, regional and institutional market practices. At the intercâmbios and also at other gatherings including those organised by women groups in *Espera Feliz*, peasants expressed grievances about the stress and worries they had due to the decline in coffee prices and increase in the prices of chemical fertilisers and of food in the supermarkets:

"Today the coffee is giving money, but tomorrow the price of coffee can fall. This has already happened. [...] People sometimes entered into debt and became desperate when the coffee price fell: 'I will not be able to pay my debts because the coffee price fell'". (P., peasant from Araponga)

Also, wishes for different types of foods and varieties were expressed. These were often about foods that had been common in the past but that were no longer present because they had come to be seen as backwards, were not available in the supermarket or had simply been forgotten:

"The most important reason [for me to cultivate all these varieties] is health and the other is maintain the tradition of our ancestors. Because all of these practices have personality. [...] If we don't take care, we lose everything that our parents left us." (D., peasant Divino)

The agroecology movement cultivated these wishes by organising visits to farms where forgotten varieties were still used and by organising sessions where stories were shared about indigenous

crops and life. Wishes for local foods were also cultivated by bringing self-produced drinks, snacks and meals to the encounter, which exposed people to the different tastes, smells and colours of foods.

The agroecology movement mobilised peasants' grievances over their finances and wishes for local foods to engage them in discussions about these, and question their dependency on commodity crops and markets:

"It doesn't make sense to only produce coffee, only coffee, only coffee. [...] Our family didn't always see how important this [food practices] is for our family. We realised this when we started to take part in the unions' work, encounters, intercâmbios. And when we became part of the agroecological open market". (Ad., peasant Divino).

"It is a very sad thing in our region. If you go to sell coffee, it has to be as a commodity. You come but he [the middleman] doesn't even want to know where the coffee came from. The price is only one. Peasants end up not feeling motivated to work for quality. [...] The issue of working, taking care of the environment. [...] some people don't even want to know about it." (J., peasant from Espera Feliz).

The agroecology movements mobilised these wishes, grievances and ideas to forge alliances between peasants, citizens, researchers, peasant organisations and NGO's. These alliances extend into wider peasant and agroecology movements such as the Brazilian Agroecology Association (ABA), the National Agroecology Articulation (ANA) and several federations of peasant and rural worker's organisations (Brandoso 2016, Schmitt 2015). These organisations are united on the basis of shared grievances against agri-business and a wish for agroecological alternatives. The alliance offers a pool of affective relations which have been for demonstrations against austerity measures, to construct alternatives and to advance specific policies (Van den Berg et al. 2019). This includes the Food Acquisition Policy (PAA), which provides funds for food transactions between social welfare institutions and peasant organisations, and the National School Feeding Law (PNAE), which obliges public schools to purchase at least 30% of their foods for school meals from local family peasants.

Next to pushing for policies, the agroecology movement also fostered the embodiment of agroecology in particular food and market practices. To do this, desirable and productive alignments between peasants, foods, crops and consumers were sought and explored. This was done through experimenting with different crops and animals, sharing experiences with different cultivars and breeds, exchanging different varieties of seeds and engaging in conversations with consumers and researchers. Through these activities, knowledge on the cultivation, processing, cooking and marketing of food crops was established:

"It is not only a product. The [consumer] group has a dynamic. It works the whole week. People exchange ideas, recipes, health tips. People give feedback on farm and foods. [...] People say: 'Why don't you do this. Why don't you do that? I ate this type of food when I was young'. So it is a very nice exchange. We have made a lot of friendships [at the intercâmbios]." (A., peasant Espera Feliz)

In the end, various practices were embodied, which include the cultivation of vegetables, medicinal plants, fruit trees and animals including chickens, pigs and ducks around the house. Further away from the house more arable crops such as beans, cassava, sugarcane, and maize were cultivated. Fruit trees and native trees were integrated with the coffee and pasture. Next to food production practices, market practices through which these foods could be sold were also established. These include open peasants' markets and peasants' shops that sell food directly to consumers. Some peasants also engaged in individual market initiatives through which they sell foods from door to door, sometimes using a subscription system or WhatsApp groups. Regional markets that directly link peasant cooperatives in Araponga, Espera Feliz and Divino to more distant consumer groups in the cities of Viçosa, Belo Horizonte, São Paulo and Rio de Janeiro were also constructed. Next to local and regional markets, the Zona da Mata also hosts institutional markets where peasants provide food for local schools, hospitals and other public institutions.

For agroecology to embody in food and market practices, it was not enough to create new knowledge, existing knowledge also had to be challenged. The knowledge, promoted by

agribusiness, that wealth can only be achieved through specialisation in a specific commodity, and that it is more efficient to buy food from commodity earnings than to cultivate it yourself, had become deeply engrained in parts of the municipalities. Many peasants for instance felt shame in serving snacks made from their own produce rather than industrial ones such as potato chips or cookies from the supermarket:

"Today, this is really put by society: 'ah you have to plant coffee if you want to have goods or a lot of money, you have to plant coffee. If you don't plant you won't have this.' This is really stuck in people's heads." (V., peasant Araponga)

The agroecology movement countered this knowledge through collective reflections around the cultivation of own food in relation to values of health, quality and tradition:

"Look, we have quality beans, for [...] 30 years we plant these beans. Every year we plant. The quality stays. If we would have this idea of not planting beans because the coffee price is good and it would compensate more to buy than to plant [...], we would have lost our beans seed". (G., peasant Espera Feliz).

"When we have to buy milk we sense the difference. [...] I don't know whether it is because cattle from purchased milk produce more or because of what they eat. But when we boil our milk there is cream, fat. Theirs is like water." (P., peasant Araponga)

Similarly, reflections took place around local markets and values of closer relations between producers and consumers:

"At the open market there is more quality. And the demands are made by the customers themselves. Everyone knows everyone, and they know what you produce and who is producing it." (J., peasant Espera Feliz)

To foster the embodiment of food and market practices, the agroecology movement also aligned peasants with institutional agents. Some of these agents, such as peasant cooperatives and associations, had to be established. They play an important role hosting, organising, transporting and mediating supply and demand in many of the shops and open markets. Cooperatives also own processing and packaging plants that enable peasants to produce sugar and cassava and maize flour. Peasant unions and cooperatives in Araponga, Espera Feliz and Divino also played a key role in accessing the PAA and PNAE policies that support institutional markets.

3.5 Affect, social movements and transformation

3.5.1 Affective labour and socio-technical systems

The results show how the agroecology movement in the Zona da Mata, constituted by peasants, peasant organisations, researchers from the Federal University of Viçosa and technicians from the CTA, fosters sustainable transformation by establishing new farming, community and market practices. In the literature on socio-technical systems, the transition management approach provides guidelines to foster sustainable transformation. Our study demonstrates how the agroecology movement fosters transformation by employing affective labour in different ways.

First, the agroecology movement employs affective labour to identify and politicise unsustainable relations and practices. It creates spaces where people can express grievances and wishes. The movement mobilises these grievances and wishes to engage in critical reflections about unsustainable relations and practices that are embedded in people's everyday lives. In the Zona da Mata, peasants expressed grievances over abuses from landlords, income insecurity and soil degradation. The agroecology movement mobilised these grievances to collectively reflect upon relations of dependency, exploitation and ecological degradation that were part of peasants' everyday life. This led peasants to challenge their relation with landlords and agri-business and to seek more sustainable and just alternatives. Some contributions to the literature on transition

management (e.g. Anderson et. al. 2019, Smith and Stirling 2008) have argued that the incorporation of sustainability problems that are embedded in peoples everyday lives in processes of transformation is a weak point in the literature. Our analysis demonstrates that people's grievances and wishes can provide an entry point to uncover these causes of unsustainability as well as a force that can be mobilised to politicise and challenge unsustainable relations and practices.

Second, the agroecology movements employs affective labour to foster the development of alternatives. It creates spaces where agents express memories, passions, experiences and other wishes that overflow dominant or predefined ways of thinking and doing. The movement mobilises these wishes to generate new ideas and to engage people in the construction of alternative practices. In the Zona da Mata these wishes are cultivated at encounters where agents become exposed to inspiring farming experiences, forgotten varieties, traditional dishes, memories, and stories on indigenous ways of life. What emerged from these exchanges were wishes to take better care of the soil, rather than exploit it for maximum commodity production, and to work in cooperation, rather than in competition with other people. These wishes are mobilised to construct alternative farming, community and market practices. In the literature on transition management, some authors (e.g. Scoones 2018, Ollivier 2015) have argued that the literature pays little attention to the potential that people themselves have to construct alternatives. Our analysis shows that giving room to and engaging with people's own wishes not only makes this potential visible, but also offers a way for it to be mobilised to develop alternatives.

Third, the agroecology movement employs affective labour to form a broad emancipatory movement to transform the wider institutional and policy environment. It mobilise peoples' grievances from exploitative relations and wishes for a different ways of life to form alliances between movements of peasants, women, rural workers, researchers, students and consumers, that expose, problematise and resist the ongoing reproduction of harmful power relations and foster alternatives. In Brazil, these alliances have been mobilised , to challenge agribusiness and neoliberalism and foster agroecology by demonstrating against the austerity measures proposed by the Temer government, pushing for for the implementation of the Food Acquisition Programme, and demanding for the recognition of women, peasant, Black and Indigenous people and their ways of doing (see also van den Berg et al. 2019). In the literature on transition management, some scholars have argued that transition coalitions tend to overlook neo-liberal agents such as agribusiness and thereby run the risk of reproducing harmful power relations (e.g. Kenis et al. 2016, Smith and Stirling 2008). Our analysis shows that powerful agents can addressed by forming broad movements based on grievances from exploitative relations and wishes for different ways of life.

3.5.2 Embodiment and socio-ecological systems

Next to mobilising agents through affective labour, the agroecology movement also fosters the embodiment of alignments of human and non-human agents and ideas into care practices that benefit people and nature. In the literature on socio-ecological systems, the ecosystem services approach also focuses on establishing practices that benefit people and nature. The case of the Zona da Mata shows that there are differences with respect to how the agroecology movement and the ecosystem services approach foster embodiment. In this section we discuss these differences by looking at three dimensions of embodiment into care practices: the establishment of productive relations between human and non-human agents, the emergence of different types of knowledge and values, and the development of a supporting institutional environment.

First is the establishment of productive relations; relations that increase rather than inhibit the capacity of both human and non-human agents to act. The agroecology movement creates spaces of discovery where people can encounter, experiment with and learn from nature. In these spaces people approach non-human nature in a sensitive, responsive and responsible way, to find practices that are beneficial to both people and nature. In the Zona da Mata, this involved visiting farms, experimenting with trees, talking with consumers, exchanging indigenous seeds and sharing experiences about the soil, water, farming and nature. Through these explorations peasants forged relations with microbes, weeds, trees and plant varieties which lie at the basis agroforestry, local markets and other agroecological practices. The ES approach identifies suitable practices by categorising, measuring and calculating possible benefits (e.g. Sereke et. al. 2015,

Kremen and Miles 2012, Zhang et. al 2007, Primmer et al 2012). It has been argued that the approach mostly focuses on quantifiable and commodifiable benefits, which often do not reflect the concerns of local people and their relation with nature (Turnhout et al. 2013). Our analysis shows that by creating spaces of discovery, practices can be created that do reflect these concerns.

Second is the emergence of novel types of knowledge and values. The agroecology movement creates spaces where people reflect upon their everyday practices, experiments and interactions with nature. In this process people create new and challenge existing knowledge and values. In the Zona da Mata knowledge and values around mono-cropping, agro-toxins, commodity production, profit and competition are challenged and those around agroforestry, local markets, collaboration, respect for nature and reciprocity created. In most of the literature on ES local knowledge and values are not considered. This has led some researchers to establish the Nature's Contribution to People (NCP) approach, which propose to include local knowledge and cultural values (Díaz et al. 2018). Our analysis shows how local knowledge and values can not only be included but also constructed by creating collective spaces where people can experiment and reflect.

A third aspect of embodiment is the establishment of an enabling institutional environment. The agroecology movement take peoples' wishes, practices and affective relations with nature as a starting point to form alignments with markets, research organisations, policies and other institutional agents. In the Zona da Mata some of these institutional agents (e.g. local markets and food policies) had to be created because existing ones did not align with peasants' wishes and their affective relations with nature. In the literature on ES the payment for ecosystem services (PES) is proposed as a way to institutionalise sustainable practices. PES provides financial incentives through policies and markets for particular practices. Studies have shown that is often not clear who is attracted by or is able to access these financial incentives, with some cases showing that multinational corporations with environmentally destructive practices were the main beneficiaries (Kull et al. 2015 and Norgaard 2010). Our analysis shows that by taking people wishes, practices and their affective relations with nature as a starting point to provide, not only financial incentives by existing institutions, but actively constructing new ones, practices can be supported that are beneficial to people and nature.

3.6 Conclusion

In this article we have shown that affective relations with the land, plants, animals and fellow community members play a decisive role in mobilising people and fostering the creation of new farming, community and market practices. The agroecology movement in Brazil, constituted by peasants, peasant organisations, researchers and technicians, cultivates these affects and employs them to foster transformation. The movement employs affective labour to draw people into reflections where they identify and politicise unsustainable relations and practices. It also cultivate wishes which are mobilised to foster the development of alternatives. Finally, affective labour is employed to form a broad, political movement that is able to change parts of the wider institutional and policy environment.

The agroecology movement also employs affect to foster the embodiment of practices that are beneficial to people and nature. It does so by creating spaces where people can experiment with and discover relations and practices that increase their own and the capacity of non-human nature to act. Spaces are also created where people can reflect upon and challenge existing and foster the emergence of new knowledge and values, which are needed for the development of new, transformative practices. Finally, spaces are created where people and movements come together to devise policies and institutions that are aligned with local concerns and practices.

Via affect, some of the blind spots in socio-ecological and socio-technical systems approaches to transformation can be addressed. The notions of transition management and ecosystem services prioritise external agents in defining the problems, solutions and policy or bureaucratic obstacles that hamper transformation. Less attention is paid to the unsustainability problems that people encounter on-the-ground, the solutions that people devise themselves and the powerful agents that uphold relations of unsustainability and inequality. The notion of affect addresses these issues by focusing on the grievances that people have over unsustainable relations and practices, the wishes they have to construct solutions and the movements they form to challenge powerful agents.

Affect provides not only a lens but also a resource that can be deliberately cultivated and employed to foster transformation. While the research was focused on the agroecology movement in Brazil, other social movements such as the international peasant movement of La Via Campesina, the Food Sovereignty Movement, the Environmental Justice Movement and movements of Indigenous peoples have also been reported to mobilise people on the ground to exchange experiences, engage in political reflections, develop alternatives and advocate for policy and institutional change (Meek et al. 2019, Rosset et. al 2019, Val et al. 2019, Pelenc et. al 2019, Apostolopoulou and Cortes-Vazquez 2018, Temper et. al. 2018, Escobar 2015). The significance of these movements of affect, for both the theory and practice of transformation, lies in that they do not only address people and their relations with nature, they also build and draw on their potential to realise change from the bottom-up. As such, they foster transformation that is not only sustainable but also emancipatory.

Chapter 4

‘We go back to the land’: Processes of repeasantisation in Araponga, Brazil

Abstract

This article draws on original data relating to a land settlement case in Araponga, an administrative area in Minas Gerais, Brazil. The settlement of the land and subsequent building of robust, more self-dependent, land-based livelihoods has followed a joint experimentation trajectory in which the agroecologicalisation of agrarian production practices has been coupled with effective institutional reform and the creation of a favourable institutional setting. Key to this grassroots transformation process has been the enrolment of various strategic actors in a collaborative network by a mediating change agent. The article argues that the Araponga case represents a particular expression of re-peasantisation. The Araponga project has evolved without the involvement of landless people social movements such as the Movimento dos Trabalhadores Rurais Sem Terra (MST). This has been crucial to its character and impact.

This chapter is based on the following publication:

Van den Berg, L.; Hebinck, P.; Roep, D., 2018 ‘We go back to the land?: processes of re-peasantisation in Araponga, Brazil. *Journal of Peasant Studies* 45:3, 2018.

4.1 Introduction: political and theoretical significance of the Araponga settlement case

This paper explores a case of settlement on the land in Brazil that has taken place outside the social mobilization of the landless movements and land struggles of which the *Movimento dos Trabalhadores Rurais Sem Terra* (MST, Brazil's Landless Rural Workers' Movement) is the most prominent one⁵. It draws on original data collected over the years and provides a detailed account of the difficulties and the opportunities entailed in land (re)settlement and the (re)construction of a rural livelihood. The significance of the analysis of the process of settlement lies in its specificities. Rather than being based on land occupations promoted by landless people social movements, a group of actors got together to purchase land which is a unique phenomenon in rural Brazil. The settlement involves diverse people in terms of experience, life history, age, gender and class. Some people have lived and worked for a long time in favelas, while others have worked on the land as farm workers for land owners. The lives and livelihoods of both groups hinge on their labour. This is their most important means of survival. They all share a desire to own land and work for themselves and become more independent. They have achieved this by designing farming practices that have allowed them to reposition themselves vis-à-vis the dominant markets in such a way that they have escaped restrictive prevailing forces and global structural processes.. Putting their shared ideals into practice and settling on the land has unfolded as a gradual transformation process, driven and shaped by their collective agency. The settlers have been able to exploit a web of newly created relationships in a context of effective institutional reform (Roep et al. 2003). This paper provides a detailed account of this grassroots transformation process and search for autonomy, and its theoretical implications.

We will begin by discussing the political and theoretical significance of the Araponga case for land and agrarian reform in Brazil. We ask whether it can be seen as an expression of repeasantisation and be considered as a showcase for the co-evolution of grassroots innovation (Smith et al. 2014) and institutional reform in the transformation agro-food systems.

The settlement itself occurred within a specific political and institutional setting. The Araponga case involved a blend of strategies through which land was accessed. By contrast, in most of the literature, land resettlement or agrarian reform in Brazil is described within the framework of social struggles promoted by landless social movements such as the MST⁵. Land occupation and subsequent integration within state managed agrarian reform programme is a key tactic in most of these struggles. In Araponga pieces of land were acquired by pooling the settlers' savings. These were later complemented with loans and gifts from a local NGO (CTA-ZM) and national (*Fundação Banco do Brasil*) and international philanthropic organisations (Ford Foundation). CTA-ZM and the Federal University of Viçosa provided post-settlement support in the form of advice and additional resources. The return to the land referred to as the *Conquista de Terras em Conjunto* (Joint Land Acquisition Movement) was shaped ideologically by the principles of the *Comunidades Eclesiásticas de Base* (Base Ecclesial Communities, CEB) as well as by those of the agroecology movement, both of which, in contrast to the perspective of most social movements, attribute relatively more agency to its members than to the movement. The non-involvement of MST and state land reform programmes and institutions like INCRA enabled the 'Araponga' settlers to better negotiate the terms of their engagement in the settlement process⁶. They were able to design their farm and livelihoods according to their own ideals of self-dependency and develop land use practices that resonated with their aim of becoming food sovereign. The mode of settlement allowed the Araponga settlers to bypass the procedures for the selection of beneficiaries by state officials, associated agricultural expert institutions and the MST-leadership.

⁵ Next to the MST, a large number of landless peoples movements dealing with the land question. There is a growing and substantial body of literature on land related social movements in Brazil. The Journal of Peasant Studies recently published a special issue on rural social movements and resistance (Vol. 42, 6, 2 November 2015). Specifically the paper by Clifford Andrew Welch and Sérgio Sauer (2015) on Rural unions and the struggle for land in Brazil provides a detailed overview of the landless people movements in the country. See also the works by Mészáros,(2013), Vergara-Camus (2009, 2012) and Wolford (2010a, 2010b).

⁶ For this article no primary research was done on the MST. Instead, the case of the MST (as described by Wolford 2010a, Caldeira 2008, Delgado 2008 and Loera 2008) is used to argue that the Arapongan case represents a distinct type of land movement that deserves further study. This footnote is not part of the published article.

Wolford (2010a) has argued convincingly that the collaboration of the government with the MST is not the result of intentional participatory democracy but of the pressures exerted on the state due to a lack of resources and technical capacity to implement the agrarian reform programme. Those who do not identify with the political mission of the MST continue to rely on Brazil's system of representative democracy. This hinges on relations of clientelism and therefore reproduces the inequalities that existed before the agrarian reforms were initiated.

Several scholars have pointed to the discrepancy that exists in the MST between those 'in the movement' and settlers 'on the ground'. Caldeira (2008) has identified competing views about how land and community are framed and interpreted. While land is a means to secure food, livelihood and social status for settlers, leaders have a "mythologized idea of rural community and land" (Caldeira 2008: 154). In a similar vein, Delgado (2008) has identified tensions between expert and lay knowledge. She argues that the adoption of agroecology by the MST has created distinctions between coordinators and technicians on the one hand and farmers on the other. Farmers' knowledge is often dismissed by technicians. Loera (2010) shows how settler involvement in the land occupation movement, or *encampment time*, can lead to competition and conflict with movement leaders since it offers opportunities for social mobility and recognition. In contrast to this, there is no clear distinction between the movement, leaders and settlers in the Araponga Land Acquisition Movement. The collective struggle for agrarian reform has not only entailed opposition to agri-business and capitalism but has raised farmers' individual and collective capacity to create the proper conditions in which their way of life can flourish. In contrast to the MST, the settlement process was initiated by the settlers themselves. They also decided to enlist the support and mediating role of an engaged academic expert in the field who was well acquainted with political and institutional dynamics. This proved crucial in the search for land. Gradually different governmental and non-governmental agencies, organisations and mediators were enrolled as allies, resulting in a political and ideological orientation that accorded with the practical, everyday life issues of the settlers. The joint reflexive process was oriented towards everyday struggles. It continued after the settlement was realised as the focus shifted to developing novel ways of farming and obtaining appropriate markets for the farmers' produce. The Araponga case has essentially involved a self-selective process that exemplifies the sort of land reform 'from below' that Rosset (2006, 2013) and Borras (2008) have called for. The purpose of our analysis is to show that the settlers themselves have maintained control over their destiny through engaging with field experimentations and novel agroecological production practices resulting in turn in a gradual processes of regrounding, repositioning and self-regulation (Van der Ploeg 2006, 2008). In this way we will document how 'from below' agrarian reform has unfolded in Araponga and discuss the theoretical and political implications of this. We will show how transformative agency (Westly 2013) has been built by a collective of land settlers and a supportive network of NGO's and church based agencies over the years. This contrasts with the recent paper by Pahnke (2015) that attributes agency chiefly to the MST in the land resettlement and agroecologicalisation process in Brazil.

The Araponga case is also significant theoretically, we will argue, because it exemplifies the phenomenon of re-peasantisation, a process that many observers have dismissed as impossible or as an anomaly, given the prevailing structural processes of global de-agrarianisation (Bryceson 1996, 2002; Sender and Johnston 2004; Peemans 2012; Li 2009, 2011). They also consider it undesirable. Many scholars are sceptical about the role of peasants in global food provisioning (e.g. Bernstein, 2014), arguing that the peasant way of life is doomed to disappear (see also Vanhoute 2012, McMichael 2008, Araghi 1995, Wallerstein 1974). Bernstein (2002, 2007, 2014) has gone so far as to suggest that the agrarian question be shifted from capital to labour. He maintains that the agrarian question in relation to capital has been resolved. He argues that rural people have been reduced by a long process of dispossession, capitalist accumulation and competition to a labouring class struggling to survive on the margins of global capitalism. This is problematic in our view and does not accord with our understanding of development processes. While the scenario outlined by Bernstein and others applies to people alienated from the land and facing 'a jobless non-agrarian future' (Du Toit and Neves 2014), it denies the agency of peasants, family farmers and smallholders who reproduce and sustain their livelihoods through adding value to their own labour and own resources. Bernstein's proposed analytical shift from capital to labour has been contested from a number of other angles as well. Van der Ploeg (2008, 2010) and Akram Lodhi and Kay (2009) challenge his assertion that the agrarian question of capital has been resolved or that it can be separated from the question of labour in the first place. They suggest instead that the agrarian question has assumed new relevance in an era of neo-liberal

globalisation, with the market as the coordinating institution and the continuing commoditisation of resources. Agricultural or agrarian production, in the context of its position within the global circuits of accumulation, has become a source of growing concern to capital (ibid: 332). They note that peasant forms of production and reproduction have undergone a process of repositioning in the course of which they have achieved a degree of independence from the structural forces governing global circuits of commodities (Long and Van der Ploeg 1994; Van der Ploeg 2008) and have also created new, nested markets.

Our contention is that the continuous processes of peasant production across the world constitutes a process of re-peasantisation and that this should be treated as empirically and theoretically relevant and significant. This assertion challenges the dominant view of development as a linear process driven by structural (global) forces that will lead inexorably to the disappearance of peasants. The very reclamation of the notion of peasant represents a critical engagement as it challenges images of drudgery and the 'efficient-but-poor' discourses of thinkers like Schultz (1964) during the 1950s (Van der Ploeg (2010, 2013, 2014)). We are convinced that re-peasantisation as an integral part of rural development processes will ultimately manifest as re-agrarianisation, particularly in development situations where the size of the agrarian economy and the number of agrarian related activities increases gradually but significantly. Re-peasantisation brings to mind the interrelated process of people 'returning' to rural and land-based activities, either through inheriting land from kin, purchasing privately owned land or accessing land through planned and unplanned (e.g. squatting) land reform programmes; this return to the land goes hand in hand with the (re)construction of a social-material infrastructure that allows rural producers to farm and construct livelihoods that are more self-dependent. As Van der Ploeg (2010, 2013) has argued, the conversion of human capital into agroecological capital is key. It is not simply a question of the availability of financial capital to purchase assets and advice. The increase of agroecological capital is embedded in a labour and production process that hinges primarily on employing the labour of one's own family. Over time this can secure the livelihood enhancement of the family. The family is the social unit that strives to add value to own(ed) resources through the use of their own labour. Altieri and Toledo's (2011) description of the 'agroecological revolution' fits the mode of resource use exhibited in the process of re-peasantisation; resources are chiefly retrieved from the ecological environment rather than acquired by market transactions and production is largely based on, and sustained by, ecological processes⁷. Such an agroecological mode of production guarantees or supports a more autonomous, place-based livelihood that is well-tuned to its immediate social and natural environment. Crucially, it enriches the available resources and makes their sustained use possible⁸. On the more generic, abstract level, re-peasantisation manifests in terms of various expressions of multi-functionality (Van der Ploeg and Roep 2003). Land use is not a simple homogenous process. Forms of livelihood such as migratory labour or off-farm work are often intertwined with agricultural production. This means that key resources need to be used in a coordinated and coherent way. The building of a social-material infrastructure is an essential dimension of re-peasantisation processes. This entails the time and place specific configuration or assemblage of material and non-material elements that can enable rural producers to farm the way they want and as autonomously as possible. This place specific social-material infrastructure is the materialisation of the social struggle for land, autonomy and livelihood. It encompasses the development of the knowledge and experience to produce and reproduce ecological capital and to make use of own resources; the development of a self-ruled resource base is a dynamic but robust process of joint learning and experimentation in which novel practices or novelties are developed, nurtured and flourish. These become the seeds of transition (Wiskerke and van der Ploeg 2004). Part and parcel of the social-material infrastructure is the creation of 'nested' markets (Schneider and Niederle (2010), Van der Ploeg et al. 2012, Hebinck et al. 2015), markets

⁷ This means that the degrees of commoditization is rather low. See Van der Ploeg (1986, 1990) for an analysis of the relevance of such measurement and quantification against the background of the commoditisation debate (Bernstein 1978, 1988; Long 1986). Van der Ploeg (2013) provides a detailed analysis of a Chayanovian perspective on farming giving hands and feet on how to analyse the flow of resources in and during the agricultural production process.

⁸ Sevilla Guzman and Woodgate (2013) in their introduction to a special issue of the Journal Agroecology and Sustainable Food Systems position agroecology both as a science and as a social movement. Altieri and Toledo (2011) pursue a similar analysis. Altieri (2002) specifically understands agroecology as a science of natural resource management for marginalised farmers. In contrast, Jansen (2015) characterises agroecology as being devoid of modern sciences and seems to dismiss agroecology on these grounds. In this article we prefer to understand agroecology as a socially embedded practice characterised by a low degree of commoditisation that unfolds as flows of natural and social resources which in and through production are continuously enriched

governed by a different, more appropriate set of rules that allow the reproduction of the autonomy of the rural producers. Re-peasantisation, is not just a collective act of resistance to dominant, squeezing structures; it is a pro-active form of place-based development that results in the building of collective agency (Roep et al. 2015). With this comes the capacity to change ‘the rules of the game’ (Gertler 2010), to renegotiate the conditions of engagement (in markets, for example), to set new rules and to effect institutional reform (Roep et al. 2003). This results in robust rural development and enhanced resilience.

Effective institutional reform is complementary to the creation of a resourceful socio-material assemblage by means of innovative, place-based agroecological farm practices. The two go together. A change in the rules of the game is needed to provide a ‘protected’ space or niche for the development of novel place-based, agroecological farm practices and the enrichment of the socio-material resource base. This makes farmers less dependent on global structural forces and enables them not only to reconsider but also to renegotiate their engagement in society at large, resulting in tailor made, inclusive institutional arrangements that further sustain their collective activities. These newly created institutional arrangements can be seen as interfaces (Long 2001), mediating between the collective actions of the farm community and society at large. Evolving place-specific, tailored institutional arrangements, which create a more favourable institutional setting, are key to regional, place-based development as Rodrigues-Pose (2015) has so eloquently argued.

This account of the mode and dynamics of land resettlement in Araponga brings these three elements together and offers a new perspective on opportunities for a kind of land reform process ‘from below’ that is based on self-mobilisation. This is not insignificant, politically or theoretically, given the dismal track record globally of the land reform programmes that have been captured by elites and technocrats.

A detailed account of the Araponga case will be given in the next three sections. At first the experience and ideological background of what people in Araponga refer to as the ‘Land Acquisition Movement’ is documented. The life histories of certain key settlers provide detailed insights into their negotiations to purchase land. The role and support of liberation theology has emerged as an essential ingredient. The paper goes on to provide an account of how the quest for autonomy takes shape and describes how and why particular kinds of social material infrastructure emerges. The analysis will conclude with a consideration of the ideas that the rich food sovereignty debate has generated.

4.2 The Quest for Land

The beginning of agricultural modernisation and neoliberal restructuring in Brazil in the 20th century was marked by the establishment of absolute private property rights and the commoditisation of land. The concentration of land in the hands of the few, the generalisation of wage labour, the consolidation of a large capitalist sector and a crisis in peasant agriculture were among the outcomes (Vergara-Camus 2009). Small scale family farmers, often lacking land titles, had to make way for expanding agribusiness enterprises and landlords. In 1996 properties of less than 100 ha accounted for 20.4% of the land; in 1972 this figure was 16.4% and in 1978 it was 13.5% (Meszaros 2000). This resulted in rural labour migrating to urban centres and agrarian nuclei in search of jobs and social security. Many marginalised peasants and rural workers migrated to urban areas in the 1950s. Many sought work in the informal sector and became marginalised because the cities were unable to absorb the large inflow of rural migrants (Martins 2002). The conditions of both rural and urban marginalised communities worsened due to political repression and violence during Brazil's military rule between 1964 and 1985. The highly interventionist military regime pushed for modernisation and export-led growth, especially through the mechanisation and agro-industrialisation of rural estates. This led to the further displacement of peasants and rural wage labourers (Meszaros 2000). In this context rural organisations and movements for agrarian reform developed. The oldest peasant organisation in Brazil is the National Confederation of Workers in Agriculture (CONTAG) founded in 1963. CONTAG's base is made up of local rural workers unions (STR) and state level federations. CONTAG has always remained committed to agrarian reform. However, subservient to state

patronage, CONTAG has only addressed those peasants whose needs are acknowledged by the state (Welch and Sauer 2015, Fernandes et al. 2012).

Another important actor has been the part of the Catholic Church that was inspired by Liberation theology⁹. During the dictatorship only Church organisations were allowed to organise marginalised communities. This enabled them to support social and land movements (Wright and Wolford 2003, Stédile and Fernandes 1999, Boff and Boff 1986). The Church supported CONTAG's efforts, but also saw the need to support peasants and rural workers that had no place in the regime's plans (Fernandes et al 2012, CPT 1997). In this context the Pastoral Land Commission (CPT) was founded in 1975.

One of the principles of the CPT was that rural movements should be autonomous and run by representatives of the rural community. The CPT's sought to support these movements in whatever way possible. Its activities ranged from providing lawyers in land disputes between peasants and landowners to giving peasants advice on nutrition (Wright and Wolford 2003). The CPT also created places where priests, ministers and laymen could gather on the question of land access and control. This would provide fertile ground for the development of new land movements, including that of the MST in 1984 (Stédile & Fernandes 1999).

Next to the MST, many other land occupation movements emerged after the dictatorship, including those of Quilombola, Indigenous peoples¹⁰, afro descendent communities and of people displaced by hydroelectric dams (Fernandes et al 2012). These movements occupy land and demand for its redistribution on the basis that the land is not meeting its social function as required by constitutional law. When successful, land is expropriated by the state institute INCRA who transfers control to a state level land use agency. Social movements, usually CONTAG or the MST, are often represented in these agencies (Fernandes et al 2012).

The developments in Araponga are also strongly associated with liberation theology. They have particular roots in the Comunidades Eclesias de Base (Base Ecclesial Communities, CEB). Like the CPT, the CEB, emerged out of a set of policies and plans drafted at the Conferência Nacional dos Bispos do Brasil in 1965. The Movimento da Boa Nova was founded in this context. It trained evangelical lay leaders to organise small dynamic Christian communities into what became known as CEB Communities.

The Comunidades Eclesias de Base (CEB) are self-led, autonomous and self-organised groups that engage in politically oriented readings of biblical texts and that seek to improve their own social conditions and. Each CEB is coordinated by a single clergy member or a trained lay member. Services are organised in a small chapel or an individual's home. The CEBs played an important role in the political mobilisation of farmers and rural workers. It strongly inspired the new unionist movement in the 1980, a wave of new rural workers unions that sought to be free from state patronage (Comeford 2003). CEB members were also active in, and inspired, the establishment of other rural movements such as the MST (Stédile and Fernandes 1999).

In addition to challenging authoritarian regimes and transforming political structures, CEB have sought to transform political cultures by imparting democratic values and practices (Cavendish 1994). Gramson (1991) argues that, in contrast to many other movements, equitable relations within the CEB are as important as transforming society. Hierarchical relationships within the movement itself are regarded as suspect. The idea of agency, not only of the movement, but also of its members, is made explicit and emphasis is placed on exploring and transforming the everyday reality of people by living with them rather than thinking for them (Gramson 1991, Huizer 1979). Action is oriented to building collective agency at the grassroots level. These features can also be found in the movement in Araponga where the recognition of the agency of its members and the building up of collective agency played a central role in both the acquisition of land and the establishment of robust farming.

⁹ Bandeira (2000), Gutierrez (2000), Boff (1996), Boff and Boff (1986) provide elaborate descriptions of liberation theology in Brazil.

¹⁰ Indigenous people refers to descendants from inhabitants that lived in Brazil prior to European colonisation. Quilombola refers to descendants from African slaves that escaped from slavery to settle in remote areas.

Depeasantisation and deagrarianisation have been prominent features of the Zona da Mata, a meso-region in the South eastern part of the state of Minas Gerais. In the 1950’s to 1960’s especially, large numbers of family farmers moved to São Paulo and Rio de Janeiro. In Araponga, a small, predominantly rural municipality of 8,029 inhabitants in the Zona da Mata (IBGE 2007), farm workers, sharecroppers (meeiros), and small scale family farmers¹¹ make up the segment with the least income in the region. Most of the land is owned by plantation holders and a newly emerging class of agro-industrial corporations¹². CEB were established in Araponga in 1979. Inequality between marginalised farmers and rich landowners has been a prominent issue ever since.

4.2.1 The Comunidades Ecclessias de Base (CEB)

The CEB in Araponga were established by lay leaders from the community who had been trained by a Catholic priest. There are still several CEB groups in the municipality, each consists of 5 to 20 neighbouring families. The groups generally include farm workers, sharecroppers and small scale family farmers. The CEB have expanded and strengthened social networks as neighbours have more intensive contact than before with one another and with members of other CEB groups. The meetings are self-organised. The venue is rotated amongst the homes of the members. Services with priests are organised once a month or every two months. Groups also meet to pray, sing, and discuss the implications of the bible and liberation theology for everyday life.

The juxtaposition of liberation theology and everyday life has led to a critical attitude towards existing power relations and the embrace of notions of equality, unity and solidarity between families and their neighbours. The problems sharecroppers and rural workers encounter with landlords is a recurring point of discussion in the meetings. Grievances include the extra chores or extra time that is demanded of workers when these are not part of a prior agreement. People also complain about delayed payments or payments that are below the agreed amount. In the past such treatment was considered normal, something which a good Christian should simply accept. Now it is perceived as a form of injustice. The reworking of liberation theology into an everyday discourse of social injustice has helped define a new sense of agency (Long 2001) and driven social action.

“From the moment that we started to become knowledgeable [of injustice] we started to demand a little more from landlords [...]. This would bring us to the obligation to join hands and have an organisation where more people would fight with the same objective: to defend the rights of the working class” (Afonso Lopes, first president of the Arapongan Farmers Union).

CEB members became acquainted with the idea of a union from the priest when he visited to hold services, but they did not know exactly what a union was and how it worked. Convinced, nevertheless, that a union would help their cause they approached a teachers’ union in Viçosa for advice. They were directed to the FETAEMG, the federation of workers unions of the state of Minas Gerais. This body, though, served too broad a group to be able to address their concerns. They turned instead to the Comissão Pastoral da Terra (CPT, Pastoral Commission for Land), an organisation that, like the CEB stemmed from the Brazilian Bishop Conference, and which sought to protect the political rights of rural labourers and community leaders. At the time the CPT was running a programme that supported the foundation of local unions. The Arapongans had by then concluded that in order to have a union that would fight for their cause they would have to found one themselves.

Setting up a union proved to be a learning process that involved becoming familiar with legal and administrative procedures and formalising the functions, tasks and the structure of the organisation. The prospect of a union in Araponga provoked opposition from the landlords.

¹¹ These categories are not mutually exclusive. Peasants with a small piece of land often also sharecrop and sharecroppers may also engage in work on rural estates. The sharecropping arrangement in Araponga, known as meeiros, entails renting land in return for part of the harvest, usually half. Costs of inputs are also shared. For rural workers the most common arrangement is that of diário or day labourer. Labour is hired for one day for a specific task, such as harvesting, weeding or pruning.

¹² A census conducted in 1996 shows that small and medium farms in Araponga make up 85% of the farmers and control 37% of the land (IBGE 1996).

Meetings were sabotaged, key persons were pressured to step out of the founding process and the union office was vandalised. The farmers tried to assure the landlords that the union did not intend to cause conflict. It was also decided to hold meetings in secret locations. In 1989 the Arapongan Sindicato dos Trabalhadores Rurais (STR, Rural Workers Union) was founded.

The union helped draft contractual agreements between landlords and sharecroppers and offered legal support to sharecroppers and rural workers when in dispute with landlords. It also played a role in securing farmers' land rights by helping them to acquire legal property documents for their land. However several CEB members realised very early on in the process that they would not attain the autonomy they desired even with a union in place.

4.2.2 The joint Land Acquisition Movement

Even after the union was established, landless farmers continued to experience major problems as a result of their dependence on landlords. People still had to work while receiving only half of the harvest or had no say over what crops they grew, for example. Unlike in the past, these abuses began to be perceived as unfair and inherent to their position as sharecroppers. They concluded that the only way to be autonomous from the landlords was to own their own land. This marked the beginning of the quest for land, which immediately encountered two major obstacles. First, only very large tracts of land were for sale. Secondly, the land belonged to landlords who had exhausted it by coffee cultivation (Cardoso 2001).

CEB members drew inspiration from a collective land purchase by three brothers. Aibes Lopes, a sharecropper, had been continuously abused by his landlord. His two brothers, Alfires and Niuton, helped him escape his situation by pooling their savings and purchasing a piece of land with him. The land was divided among the three brothers. A group of CEB members was convinced that this spontaneous type of group purchase could be reproduced and organised on a larger scale. Soon the first purchase by what was coined the *Conquista de Terras em Conjunto* (Joint Land Acquisition Movement) took place. Although such purchases by the movement were legal, land acquisition was referred to as a re-conquest. This was based on the conception that marginalised sharecroppers and rural workers were taking back land from rich landowners.

Many sharecroppers and rural workers were not able to save enough money to purchase land even through collective purchase. Lending arrangements based on existing social relations were created. In the beginning this mainly encompassed families. Later, though, it became common to borrow from other CEB members and from members within the land purchasing groups. To avoid raising a landlord's suspicions, a CEB member who owned a large area of land and a small car posed as the buyer. By the time the landlords discovered that this had been happening, the movement had already built up a reputation as a trustworthy buyer. The Land Acquisition Movement also facilitated the exchange of land between members with the objective of combining small scattered pieces of land into single properties.

Through the Joint Land Acquisition Movement, landless sharecroppers and rural workers acquired over 700ha of land between 1989 and 2010. A survey by Campos (2006) shows that between 1989 and 2005, 130 purchases took place, mostly from large landholdings and with an average purchase size of 6ha per farmer. The study shows that often parents later also bought land for their children or encouraged them to do so themselves, thereby allowing for the reproduction of peasant farms and counteracting the tendency for land to fragment due to inheritance.

In the beginning the collective purchase groups mainly consisted of close relatives such as siblings and nephews. When the movement expanded, more distant relatives, in-laws, neighbours and CEB-colleagues also joined the purchase groups. Many people who had migrated to urban marginalized communities returned to purchase land and make a living in the countryside. The growing interest in the movement led the core group to establish a set of principles to guard against opportunism. These were referred to as the Ten Commandments. These resemble a set of ethical norms rather than strict rules (see table 4.1). The influence of liberation theology is evident. Commandments 2,4,5 and 6 illustrate the importance of trust. The principles reflect the more or less shared ethical values that were established over time from the discussions held in the CEB groups and from the experiences of the Land Acquisition Movement. Some of the "commandments" refer to farming practices and have clearly been influenced by the discourse on agroecology that will be discussed in the next section.

Table 4.1: The 10 Commandments in the Joint Land Acquisition Movement (Source: CTA-ZM 2002: 26)

-
1. **Be interested in the land** – love the land and be committed.
 2. **Behaviour in the group** – be honest; do not lie; do not take individualist decisions and participate in the meetings.
 3. **Environment** – have environmental awareness.
 4. **Division** – form a responsible group and do not take rash decisions.
 5. **Land acquisition** – save money to buy land; keep in mind that this is possible; live in harmony with the community.
 6. **Ways to interact** – enter into dialogue with and show understanding towards others; deal with issues that concern the family; participate and take part in religious reflection in groups; be independent of sects.
 7. **Women's participation and contribution** – struggle and encourage your partner; insist your name appears in documents; do not feel ashamed to be a peasant; participate in land sharing and in group decisions.
 8. **Agricultural participation** – participate in labour exchange and 'bee arrangements'; recover and preserve the soil; visit your neighbour's farm; use leguminous species.
 9. **The way to use resources** – use animal draft power for group work; use animals with skilled people who have experience working with them; acknowledge the greatest demands on labour; take care of the animals.
 10. **The way to use the farm resources** – conserve and expand roads; keep the trails; use and offer resources like water mills, sugar cane mills, pottery etc.; keep water taps closed when water is scarce; control small animals so they do not damage neighbouring areas.
-

The movement gained increasingly widespread recognition. It received an award from the Fundação Banco do Brasil and funding from the Ford Foundation¹³. Members used this to found the "Fundo de credito rotativo" in 1998, a rotating credit fund which lends money to people who do not possess land but want to buy it.

Although farmers gained control over land they continued to face obstacles, some of which threatened their survival as peasant family farmers. Many of these difficulties stemmed from the traditional reliance in the Araponga region on external knowledge and green revolution technologies. This resulted in the degradation of resources, depletion of soils and the exploitation of family farms by dominant market players. The settlers were confronted with what Marsden (1998) and Van der Ploeg (2008) refer to as the 'squeeze on agriculture'. Rather than accepting this as an inevitable or structural situation, Arapongans began to explore ways to redesign their farms and reconfigure their relationships with markets.

4.3 The quest for production sovereignty

Investments in industrial and export led agriculture aimed at large rural estates, which started during the military coup in 1964, continued after the restoration of democracy in 1985. From 1995 onwards smallholder family farms were recognised as a special category and began to receive official support. This created a policy division between smallholder family farms on the one hand and large agro-industry on the other. This distinction was institutionalised with the establishment of two agricultural ministries in 2003, the Ministério do Desenvolvimento Agrário (Ministry of Agrarian Development), which supported the former, and the Ministério da Agricultura, da Pesca e da Alimentação (Ministry of Agriculture, Fisheries and Food), supporting the latter. Family farms however only received 15 to 20% of the funding granted to agribusinesses. Moreover, the Ministry of Agrarian Development failed to acknowledge the diversity that existed

¹³ The sum was officially handed to the CTA-ZM, a local NGO operating in the area through whom the Ford Foundation came to know of the experience.

amongst family farmers, favouring a one sided, Green Revolution model for smallholder farmers (Sabourin 2007).

The agroecology movement emerged in response, and as an alternative, to industrial agriculture and the green revolution. Scientists, the CEB, the CPT and new unionist peasant organisations, formed active parts of the movement (Cardoso and Mendes 2015). Another important actor was a new generation of Brazilian NGO's. These NGO's were disillusioned by the state. They concentrated on strengthening people and communities at the grassroots level rather than on overt political opposition. Many of them collaborated closely with peasant organizations and local researchers and were part of the Project of Alternative Technologies network (PTA). The PTA was superseded by the National Articulation of Agroecology (ANA) in 1999, when its network was broadened to include, not only NGOs, but also scientists and social movements.

In Minas Gerais, rural extension services were established between the 1940s and the 1960s (Cardoso and Mendes 2015). The Association of Credit and Rural Assistance (ACAR), a joint programme by the state of Minas Gerais and the Rockefeller foundation, came into existence in these years. A somewhat modified package of "green revolution technologies" was promoted from the 1970's onwards by the Organisation of Technical Assistance and Rural Extension Services (EMATER) which emanated from ACAR. Both ACAR and EMATER sought to transform farms into modern, commercial enterprises. Farmers were encouraged to mechanise, plant monocrops and use chemical fertilisers, agro-toxins, and commercial seeds. They were also encouraged to specialise in coffee and produce for global commodity markets. Although neither package was fully adopted, as mechanisation was simply impossible on some of the slopes that characterise the region, this modern, entrepreneurial mode of farming became the norm in Araponga, even among smallholders (Cardoso and Mendes 2015).

In the past, many small scale family farmers and sharecroppers cultivated *lavoura branca* or food crops, most notably maize, rice, cassava and beans for both home consumption and the market. The promise that wealth could be created through the exclusive production of *lavoura* or cash crops, changed this. *Lavoura branca* came to be associated with a traditional, backward type of farming among both smallholders and landlords in the region. Food, it was said, could be bought from the earnings generated by growing coffee instead of growing it oneself. Most of the coffee in Araponga is sold to large intermediaries in municipalities, which peel, sort and roast the coffee. Intensive coffee production involves the heavy use of inputs. Reliance on external inputs increases the risk of peasant indebtedness. Dependence on a single crop increases vulnerability to environmental and market fluctuations. Productivity in the Zona da Mata has actually declined, as these farming methods are poorly adapted to local environmental conditions (Cardoso 2001).

In Minas Gerais, the PTA operated in alliance with the Agricultural Workers Union of the state of Minas Gerais (FETAEMG). The FETAEMG created and maintained linkages with local farmer unions. These formed the social base of the PTA and were referred to as the rede-MG (Minas Gerais network). The PTA reached farmers and organized courses on alternative agriculture through this network. In 1986, the Alternative Agriculture Group of Viçosa joined rede-MG and took over the role of organizing courses in Minas Gerais.

4.3.1 Agroecology, the CTA-ZM and the Federal University of Viçosa

The GAAV was founded in 1975 by a group of students from the Federal University of Viçosa (UFV) who were interested in alternative agriculture, later known as agroecology. Agroecology in this context is the strategic use and development of place based, social and ecological, resources for rural development. The group purchased a small part of land in 1979. This became an experimental garden on which trials using alternative farming practices were conducted. Later, a restaurant was started and crops were grown for it.

In the beginning the group consisted of university students and professors. Gradually the group acquired a new sort of political and social consciousness when its members participated in congresses on alternative agriculture. It made contact with the PTA, which asked the group to organize courses on alternative agriculture through rede-MG in 1985. GAAV however grew dissatisfied with the courses as they seemed to reach few farmers and had little impact. GAAV came up with the idea becoming a small, locally situated and practically oriented research center. This became the Centre of Alternative Technologies of the Zona da Mata (CTA-ZM) which was

founded together with several rural worker unions in the region in 1987. The locations of these unions demarcate the boundaries within which the CTA-ZM works which covers 30 municipalities in the Zona da Mata area. The first employees were four recently graduated GAAV members. The GAAV compound became the CTA-ZM office.

In Araponga two students from the GAAV appeared in a meeting of the CEB and made a proposal to work with the farmers. The approach was made to the CEB because no farmers' union existed in Araponga at the time. The students' proposal was received sympathetically. Farmers realized that forming alliances with the CTA-ZM would enable them to address problems with land degradation they were facing.

The work of the CTA-ZM is directed towards building agency at the grassroots level. A difference between the CTA and other social movements is that it was articulated and grew as a partnership between the CTA, researchers from the UFV and 13 rural workers unions of the Zona da Mata (Cardoso 2001). Both the advisory commission and the board of directors of the CTA-ZM are made up of representatives from these groups. Each group is part of national network organizations. The partnership and the networks in which they were situated proved important for the development of agroecology in the region in terms of acquiring support, fostering learning and innovation, and obtaining formal legitimacy (Cardoso and Mendes 2015). The PTA network served as an important intermediary to acquire funds.

Another difference is that the partnership attributed relatively more agency to the farmers themselves than to the view of movement leaders. Genuine efforts were made to ensure that farmers' problems, experiences and aspirations played the leading role in agenda setting and in developing new practices. This proved to be a learning process in itself. General ecological farming guidelines were first met with skepticism or indifference by farmers. To these and other difficulties the NGO responded by engaging with criticism and suggestions of farmers and reorienting the programme (Cardoso and Mendes 2015, Cardoso 2001). Also the discourse on agroecology that was promoted by the partnership also attributed an important role to farmers' own experiences, interpretation and creativity. As a result, many farmers also began to experiment with agroecology outside of formal projects.

4.3.2 Securing the soil

A major concern for the new Arapongan farmers was the degradation of one of their key resources, the soil. Some of the land had been degraded to such an extent that coffee and high value crops could not be planted on it. Landlords sold areas once they were no longer productive. Their way of farming was responsible for the depletion of the soil in the first place. They cleared the land and produced coffee until yields declined. Then they converted the land to pasture. Once the productivity of the pasture also reached unviable levels they moved on to a new area (Cardoso 2001). Farmers now realised how their own farming practices were degrading the land and threatening the continuation of their farming activities. Smallholder farmers in the region who had not been part of the Land Acquisition Movement faced the same problems.

Engagements took place between farmers and the CTA-ZM to discuss how to reverse the cycle of resource degradation and begin to recuperate the soil. A survey was conducted to inventorise existing indigenous farming practices in the Zona da Mata region in 1989. Many different practices were found scattered throughout the region. In 1993 the Terra Forte (strong earth) committee was set up by the CTA-ZM, the Arapongan farmers' union and the Federal University of Viçosa (Cardoso et al. 2001, CTA-ZM 2005). On-field experiments were carried out with the farmers to test the practices identified by the survey. In 1994 the participatory agroforestry systems (SAF) programme was started by the CTA-ZM with the soils department of the UFV and some local farmer unions in the Zona da Mata (STR), including the Arapongan Farmer Union. This programme promoted the planting of trees in the coffee fields. The idea was that the trees would conserve and recuperate the soil (CTA-ZM 2005, Gjørup et al. 2004, Souza et al. 2010). The CTA-ZM distributed tree saplings.

In the end selective weeding, green manuring, and the planting of trees in between the coffee became common practices among farmers in Araponga. The idea is to keep the soil covered in order to prevent soil erosion and improve soil quality. The effectiveness of these practices has been confirmed by scientific studies in the Zona da Mata. Souza (2006) found that there was a

twelfefold reduction in soil erosion. Losses of nutrients and organic matter were greatly reduced as a result of these practices¹⁴. Mendonça and Stott (2003) found that the trees planted in between the coffee produced multiple benefits: the organic matter content of the soil increased, leaching was reduced, more nutrients could be stored, and a more stable provision of nutrients to the crop was maintained¹⁵. Farmers were ultimately able to produce a wider range of crops and increase yields.

Inspired by these promising, novel agroecological practices some farmers started their own experiments and thus got enrolled in joint learning network supported by students, university staff and NGO's, often with some success. The planting of trees and other vegetation on the border of small streams was one of the novel practices (Ferrari et al. 2010). This increased the water flow of the streams. The roots from the vegetation created pores in which water could be stored. The increased organic matter also increased the water-holding and infiltration capacity of the soil (CTA-ZM 2005). Through these practices the peasants could store more water for plants, humans and animals for the dry season. Another experiment involved the transfer of forest litter to agricultural fields to stimulate the presence of the micro-organisms in the soil that are responsible for the cycling and synchronisation of nutrient availability and crop uptake.

Farmers also began to challenge the mono-cropping of coffee in this period. Planting any type of vegetation in between the coffee was considered inefficient in terms of the discourses governing mainstream agriculture. Other plants were said to compete with the coffee for shade, nutrients and water. Harvesting and maintaining coffee, it was said, would be inefficient and labour would be wasted on maintaining less profitable crops. The farmers thought otherwise. Soil management became an important element of their newly emerging farming strategy (Klingen et al. 2012). They began to refer to themselves as agroecological farmers.

4.3.3 Producing own nutrients and food

Ways were found to combat and reverse land degradation but peasants faced another threat. They were vulnerable to price fluctuations in the coffee, chemical fertiliser and food markets. Farmers had to earn enough money to purchase inputs and food for the season to come. Less revenue as a result of drought, for example, or an increase in the price of inputs or food meant less inputs could be bought for the next production cycle, with lower yields as a result. Fertiliser and food prices increased steadily over the years. There was little expectation that this trend would be reversed. The farmers' fears that they were entering a negative spiral grew. They responded by applying lower inputs, purchasing cheaper food and intensifying the use of their own labour in activities such as weeding in the hope this would partly offset the effect of negative yields. Farmers knew these efforts could not be sustained. As the pressure of having to invest more and more time in tasks such as weeding increased at the expense of doing other things, farmers began to see their dependence on external inputs as the source of the problem.

To consolidate the efforts and progress made, the Associação dos Agricultores Familiares de Araponga (AFA, Arapongan Farmer Association) was established. It sold chemical fertilisers at lower prices to the farmers. Although this provided some relief, farmers continued to face the same risks. They began to see that chemical fertilisers degraded the soil. These concerns were taken to the agroforestry programme. Experiments were conducted with trees that could take up the nutrients which could not be reached by the coffee plants. These nutrients became available to the coffee plants after the leaves, branches and roots of the companion trees decomposed. Different species of tree that captured nutrients in different ways were introduced. Leguminous trees that fixed nitrogen from the air were planted first. Trees that fostered mycorrhizal fungi were next in line. These could absorb phosphorus that was too strongly bound to the soil for the

¹⁴ Nutrient losses with the presence and absence of selective weeding, green manuring and the planting of trees were compared by Souza (2006). Results for different components in kg/ha/year (present/absent) are: soil (217.3/2611.9), CO (4.9/65.1), P (1.6/46.5), K (8.0/328.3), Ca (92.1/1865.5) and Mg (17.9/ 625.3).

¹⁵ The authors found that leaf residues from trees have high C:N ratio, lignin and C:P ratios a therefore have a good potential against soil erosion and to rebuild the C content in the soil. Also an increase in forms of organic matter that are responsible for the cycling of nutrients were found. The authors moreover found that organic matter reduced the amount of exchangeable Al in the soil thereby reducing the need for farmers to apply lime and increasing the capacity of the soil to retain Ca, Mg, P and N.

roots to absorb directly. Finally, deep rooting trees were planted in order to take up the nutrients that could not be reached by the coffee plants.

Over 70 species of tree were experimented with. Not all were successful. Some were found to have negative effects on the coffee bushes. Some farmers were allergic to the pollen of certain trees such as the *capoeira branca*. The management of the trees also required a lot of labour as they had to be pruned before the nutrients and organic matter could enter the soil. The tree canopy could not be allowed to shade the coffee. Nevertheless, planting trees such as *fedegoso* (*Senna macranthera*), *ingá* (*Inga* sp.), *jacarandá-branco* (*Plathypodium elegans*) and *garapa* (*Apuleia leiocarpa*) between the coffee for the purpose of nutrient input became common practice and the subject of active management and continuous experimentation. Some farmers began to retain specific trees that came up on their own. They also began to obtain trees from nearby forests, CEB colleagues and family as well as from the CTA-ZM (Martins 2007).

Scientific studies in the Zona da Mata confirmed the potential of trees to capture nutrients. Cardoso (2002) found higher fractions of organic P in agroforestry systems than in conventional systems¹⁶. Mendonça and Stott (2003) studied the residues of several tree species under shaded coffee system in Araponga and found that most residues had the potential to supply the nutrient needs of a crop of maize¹⁷.

The livestock kept by the project *vacas para o café: fechando o ciclo de produção orgânica de café* (cattle for coffee: closing the cycle of organic coffee production) was another source of nutrients that was investigated. This project was initiated by the AFA, funded by the Dutch NGO Wilde Ganzen and provided with technical support by the CTA-ZM and the Soil, Zoo-technology and Veterinary departments of the Federal University of Viçosa.

Farmers began to acquire cattle and goats as a source of manure for coffee cultivation. Some acquired their animals with the support of the *vacas para o café* project while others had to get them on their own. Different ways to make this system effective were experimented with. Stables, for instance, were constructed where the cattle could be kept part of the day in order to facilitate the collection of manure and to allow pastures to rest. Long growing varieties of grass and sugarcane were grown as feed. The *picadeira*, a shredder, was used to shred grass and cane into pulp so as to prevent cows pulling grass and cane into the stables and trampling on them. A smaller proportion of feed was lost as a result. This also made the collection of larger quantities of manure possible (Passos 2008, Freitas et al. 2009).

Farmers also began to cultivate their own food. First they had to challenge the negative image that came to be associated with *lavoura branca* or arable food crops.

“Many of the people say that no results can be booked with *lavoura branca*. *Lavoura branca* is maize, beans, rice, it is what we need. And that other crops should be grown, which in our case would be coffee, for any results to be booked. But this is a proposition with which we now totally disagree”. (Afonso Lopes, farmer and first president of the Arapongan Farmers’ Union)

Farmers began to plant (more) maize, beans, potatoes, cassava and sugarcane, often on their own initiative. Farmers participating in the agroforestry programme also expressed their desire to have fruit trees. Avocado, banana and papaya are now commonly found growing between the coffee bushes. Some farmers have also experimented with more exotic trees, such as plums, peaches and citrus. Trees are often used for multiple purposes. Fourteen nitrogen fixing varieties are also used for food, 7 for construction, 8 for firewood, 5 for fencing, 4 for the construction of ox-drawn wagons, 6 for medicinal purposes and 6 for bees. Most of the products derived from these trees are used within the household (Martins 2007).

¹⁶ These differences are attributed to higher biological activity in the agroforestry systems. It is hypothesised that mycorrhiza absorbs inorganic sources of P which are exchanged for carbon compounds from the trees. Mycorrhizal fungi are moreover able to cover larger volumes of soil than roots and thus are better able to take up and cycle nutrients.

¹⁷ Some species were found to not supply enough nutrients on their own but were still valuable when grown with other species.

Farmers have also established vegetable gardens or expanded existing ones. Various vegetables are grown for household consumption. Farmers have also begun to work with spontaneous vegetation¹⁸. *Solidago chilensis*, *Ageratum conyzoides* are cultivated for medicinal purposes while *Portulaca oleracea*, *Amaranthus deflexus*, *Emilia sonchifolia* are cultivated as a food crop (Souto 2006). Animals are also farmed. These include chickens for meat and eggs, pigs for meat and fat (used as oil), and cattle for milk.

Another novel practice was the creation of new products. Many farmers started to experiment with the processing of food, they created novel processing techniques and new ways to market their produce. A group of farmers, for example, have constructed a mill to process sugarcane into açúcar mascavo (brown sugar) or rappadura (raw sugar). Maize and cassava is milled to produce flour. Fruit is processed into sweets and avocado into soap or used as animal feed. Milk is turned into queijo mineiro (fresh cheese), requeijão (cream cheese). These products are consumed by the household, sold or given away as gifts. Many farmers argue that their diets have improved as they are no longer forced to purchase cheap food from the supermarket. Healthy food such as fruit is expensive. Farmers claim that illnesses are less frequent now that they have access to better food. Although planting, pruning and caring for the trees requires more labour, farmers argue that it is worthwhile.

4.3.4 Diversifying sales and creating new nested markets

The way in which markets are organised has been questioned (Schneider and Niederle, 2010). Farmers are unhappy that they can sell only their coffee and not their surpluses of other food crops. They complain about the low price the coffee receives. These issues led the AFA to establish their own shop and hiring a shop attendant. Peasants can bring crops of their choice to the shop, which are then sold directly to the consumer. The crop remains the responsibility of the farmer. The shop does not buy the product from the farmer. Maize, beans, vegetables, fruit, coffee and farm-processed foods such as sugar, cassava flower and maize flower are available in the shop. Peasants argue that these sales are advantageous. No contract is needed. Goods can be dropped off at any time. There are no restrictions on what they can sell. They can sell their surpluses. The initiative has encouraged farmers to diversify because now they can sell bananas, avocados, lettuce, cabbage, potatoes, yams, maize, beans, cheese and sugar to the mercadinho.

“It is because when you have...are able to get things directly from producer to consumer, both gain. Because you can sell better and the consumer pays less. Because the middlemen [usually] take the largest share [of the profit]. Unfortunately.” (Samuel, farmer Araponga)

A study shows that agroforestry systems had a 43% higher production value than full sun coffee systems over a period of 12 years, mainly because of the additional income generated by the diversification of production (Souza, et al. 2012)

On their own initiative, some peasants have also begun to sell potatoes and yams to people in the municipality, using horses or motorbikes to deliver the produce. Neighbouring families have begun to specialize in a particular vegetable or bean type and exchange part of the harvest. They argue that this saves labour and enables them to maintain bonds with other families. A group of farmers has also started producing organic coffee for which they receive a higher price. The coffee is sold directly to the final retailer through a cooperative in Novo Resende. The cooperative purchases coffee that is already peeled and roasted, allowing the farmers to capture a larger share of the value than they would if they sold to intermediaries. Many farmers however find the certification criteria too strict.

¹⁸ This entails keeping certain types of vegetation that arises spontaneously. Although these appear as weeds and are commonly interpreted as a form of neglect, they are subject to deliberate management through for instance selective weeding and weeding parts of the plant to avoid it from interfering with the coffee.

4.4 Autonomy as a process

Small scale peasant family farmers, sharecroppers and farm workers in Araponga have been driven by a loosely defined quest for autonomy resulting in a process of repositioning, regrouping and self-regulation (Van der Ploeg, 2006, 2008). This was an evolving process of joint experimentation and learning with various novel farm practices that was crucially supported by a wider (institutional) network. The transformative collective agency thus resulted in a gradually improved resource base and effective institutional reform. Obstacles and failures have had to be overcome. Importantly, agency, the capacity to mobilise and conduct joint, group and individual initiatives, has gradually grown as networks within the community have strengthened and expanded, most importantly through the CEB. The farmers do not stop at acquiring land. They continue to develop their agency through alliances with outside organisations, for instance with the CTA-ZM and the Federal University of Viçosa. Ties have been forged and consolidated with these bodies in order to develop new farming practices, markets and farmer organisations. External actors and mediators have slowly been incorporated so as to avoid "capture" from external interests and to allow the ideological aspects of the agrarian question to remain oriented towards concrete everyday struggles and practical solutions. Autonomy has been gained through acquiring land by pooling financial resources, and by reorganising, redefining and (re)discovering productive resources. A resourceful social-material infrastructure has been built. It comprises a self-controlled and managed (human and natural) resource base that has enabled rural producers to farm as autonomously as possible. The farmers have developed the knowledge and experience to produce and reproduce ecological capital. The development of new farming practices in conjunction with the CTA-ZM and the Federal University of Viçosa has played an important role. This has entailed retaining autonomy within an alliance. Political and external support has been enlisted without undermining farmers' independence. Formal recognition from bodies such as the Fundação do Banco do Brasil and Action Aid has followed.

Ultimately, farmers have reversed land degradation, improved productive capacity, increased resilience to climatic fluctuation, and reduced dependency on global commodity markets. They have developed collective and reciprocal arrangements in order to process and market their produce and to gain access to land. The experience gained through the CEB and joint initiatives, such as the Joint Land Acquisition Movement, have been critical. Land is now acquired for both newcomers and the younger generation by collective purchase. This ensures that there is a high degree of post settlement freedom. People can decide how to dispose of their crops and how to allocate their time. They decide which crops to plant, animals to keep and practices to use. All of this is critical to the reproduction of the peasant way of life. Building a resourceful social-material infrastructure entails the development of a discursive environment that challenges and protects initiatives from the dominant way of doing things. Exposure to the discourses of liberation theology and agroecology have been important in this regard. The ten commandments are a perfect example of this.

4.5 Conclusion

This paper has argued for the empirical and theoretical significance of the process of re-peasantisation, understood as a twin process in which social actors, like farm workers, rural labourers and favela dwellers return to or accessing land and construct a social material infrastructure that enables them to be as independent as possible of dominant markets and technology relations. Establishing an agroecologically embedded production and reproduction development environment has been a gradual and knowledge intensive learning process. Re-peasantisation is a process generated set of robust practices that requires continuous fine-tuning and social struggle. It entails resistance to corporate control over production and consumption. Arapongan settlers understand that independence from the dominant industrial agro-food system and the simultaneous redesign of their mode of farming revolves around the construction of agroecological alternatives. This is the key element of a resourceful social-material infrastructure that suits the needs of peasant family farmers and also the needs of low-income non-farming populations. Another key ingredient is the capacity of actors to construct new interfaces with support organisations to further strengthen their agency. Their autonomy is not absolute, therefore. It does not represent isolation from the wider society. Instead it a precondition for efforts to negotiate the conditions of re-engagement and to build the capacity to create new,

more beneficial, sets of relations in different interrelated domains and at multiple levels. This is a dialectical process of repositioning: a distancing from the dominant, squeezing sets of relations and a re-engagement in a more beneficial set of relations. Ultimately, this is what transformative agency is all about.

Although this paper may have evoked images of a Chayonovian category of rural producers achieving autonomy in relatively remote situations, the Araponga case is significant in that it underpins the argument for the relevance of repeasantisation, understood as a process that ultimately constitutes a viable attempt by rural people to develop a more robust agrarian livelihood. Paradoxically, re-peasantisation has gone hand in hand with depeasantisation and the displacement of rural people from their land and with the advance of contract farming arrangements between producers and agrarian capital. Contemporary agrarian capitalism, as a global structuring force, also creates the conditions and incentives for what is framed as re-peasantisation. The capacity of the new generation of peasants, deeply embedded in an extended supportive network, to transform the agro-food system profoundly cannot (and should not) be denied. The transformation of the agro-food system entails both the construction of an enriched agroecological resource base and a favourable institutional setting. One cannot do without the other.

Chapter 5

Agroecological peasant territories: resistance and existence in the struggle for emancipation in Brazil

Abstract

We explore peasant territories as an emancipatory alternative in the context of authoritarian populism and neo-liberalism by focusing on two agroecological peasant territories in Brazil. We argue that territories harbour socio-ecological, cultural-political and politico-institutional bases that engender different forms of resistance and existence. Peasant territories build and defend emancipatory alternatives by creating self-governed knowledge and production systems, by problematising and mobilising against exploitative relations, and by transforming parts of the state. We conclude that peasant territories provide a basis for emancipatory transformation. What is more, they can be considered as emancipatory alternatives in themselves.

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5.1 Introduction

In Brazil, the agribusiness sector is politically connected to neo-liberalism and supports and promotes food production that caters to global markets rather than local demands (Cunha 2017). This connection is part of a political trend that is connected to the globalisation of markets and is increasingly visible in countries across the world. Neo-liberalism fosters the commoditisation of agriculture and the insertion of peasants into global commodity markets, where they become subject to a 'race to the bottom' (Schneider and Niederle 2010; Camacho and Cubas 2011; Marsden 2012). Accordingly, it contributes to the economic marginalisation and social exclusion of local populations, including peasants and Indigenous peoples (Bruff 2014; Cunha 2017).

Authoritarian populism¹⁹ is another political trend that threatens peasants' ways of doing and life (Bruff 2014; Thomas and Tufts 2016). It consists of a form of politics that present society as engaged in a struggle between 'the people' and a prejudiced other. Consequently, it uses the name of the people to justify interventions that are harmful to others, who often include peasants and Indigenous peoples (Scoones et al. 2018). In Brazilian politics, the agribusiness lobby – which is now a controlling force in the Brazilian federal parliament – has actively pursued this form of politics (Andrade 2019). Since 2016, this political situation has ushered in austerity measures that dismantle pro-poor and pro-minority policies, including those specifically targeted at peasants (Andrade 2019).

Scoones et al. (2018) argue that emancipatory alternatives that allow people to be different and to do things differently are necessary to protect peasants and counter trends of neo-liberalism and authoritarian populism. Brazilian peasant movements provide an important base for emancipatory alternatives. These movements have historically constructed peasant territories: geographical and socio-material spaces that closely dovetail with peasant ways of doing and life (Escobar 2010; Camacho and Cubas 2011). Importantly, from the 1980s onwards many peasants have engaged with agroecology as not just a technical approach to agriculture and food production, but also as a political and social movement. In Brazil, this political and social movement champions a transformative epistemology based on principles of solidarity, reciprocity, horizontality and respect for nature (ANA 2014; Nyeleni Declaration 2015; Van den Berg, Hebinck, and Roep 2018a).

In the Zona da Mata region in Minas Gerais, peasants have recently protested against the neoliberal government of President Michel Temer (2016–2018)²⁰ and concomitant austerity measures. As peasants put it, their territories are and have been a base of resistance against global markets which affect and try to control their ways of farming and of life. The impeachment of president Dilma Rousseff in 2016 has triggered a new wave of resistance, reaffirming peasants' desire to do things differently and to construct alternative farming, education, innovation, market and other practices that strengthen their territories and promote emancipation.

Few studies explore how peasant territories foster emancipation. Many peasant, agroecology and food movement studies focus on farming practices, policies or social movements rather than peasant territories as the primary emancipatory agents (e.g. Altieri and Toledo 2011; Holt-Giménez and Shattuck 2011). Studies that do focus on peasant territories often conceptualise these as a product of explicit political conflict: as 'territories of resistance' that are shaped in reaction to 'territories of domination' (Fernandes 2008; Rosset and Martinez-Torres 2012), and tend to overlook how other, less oppositional needs and desires shape territorial resistance and encourage emancipation. How peasant territories engage with and support wider socio-political change therefore deserves further inquiry.

¹⁹ Populism is also associated with (popular) movements and governments that have supported processes of democratization. Here, we follow Laclau and Mouffe (1985) and define populist movements and governments as those that seek to acquire popular support by building societal antagonisms, mechanisms of 'othering', and rhetoric devices. We thus argue that populist strategies may be employed both the political Left and the Right.

²⁰ The government of Michel Temer was succeeded by the current government of Jair Bolsonaro in 1-1-2019, which follows a similar economic course. While the current Bolsonaro government is much more explicit both in its authoritarianism (with inclusion of self-identified military veterans in the government) and populism (with frequent references to the political left and environmentalists as 'enemies of the country'), both trends were already visible in the Temer government. Moreover, both governments are critically supported by the same 'rural bench' (bancada ruralista), which represents the interest of agribusiness and global trade in Federal Parliament, for their base of power in government.

In this article, we explore peasant territories as an emancipatory alternative by focusing on two peasant territories in the municipalities of Araponga and Espera Feliz, in Minas Gerais, Brazil. We draw on data collected through participant observation, focus group meetings and interviews with peasant organisations (unions, associations, cooperatives, schools), informal groups (of peasant women, youth, church) and peasant farmers in the period 2016–2018 to provide a detailed account of how these territories have historically defended and advances peasant ways of doing.

In the next section we elaborate on the concept of territories and the entwined linkages between resistance, existence, and emancipation. We then introduce the context of agrarian development in Brazil and the region of Zona da Mata in Minas Gerais, after which we present in-depth ethnographic accounts of two peasant territories. We show how peasants construct territorial practices that are autonomous and different from dominant practices and ideas. We then argue that territories defend and advance these practices by making strategic shifts under changing political trends and by taking control over production processes, fostering political mobilisation and transforming parts of the state. We conclude that peasant territories are both bases for the construction and defence of emancipatory alternatives as well emancipatory alternatives themselves.

5.2 Territories: resistance, existence and emancipation

5.2.1 Peasant territories and emancipation

Peasant emancipation lies in the creation of autonomy from hostile relations and in allowing and fostering the construction of different ways of knowing and doing and in creating horizontal engagements between these different ways. We understand peasant territories as geographical and socio-material spaces that closely dovetail with peasants' ways of doing and ways of life (Porto-Gonçalves 2006; Escobar 2010; Camacho and Cubas 2011). These peasant territories are dynamic entities and territorial change is a non-linear process. Accordingly, we emphasise heterogeneity, contradictions and complexity in our understanding of territory (Long 2001; Escobar 2010; Woods 2015). Specifically, we consider territories to be able to fulfil multiple functions that build on each other: they at once serve as socio-material basis for emancipatory action and they constitute emancipatory alternatives that peasants strive to create and maintain.

The socio-material basis for emancipatory action of peasant territories lies in how they defend and advance peasants' life and ways of doing. In particular, territorial development consists of a struggle for autonomy from hostile agents. Hostile agents include landlords, agri-business, extractive industries, and large corporations who struggle with peasants territories over land, food, markets, agricultural inputs and other resources, as well as over policies and ideas of how resources should be used, managed and distributed (Fernandes 2008; Escobar 2010; Camacho and Cubas 2011; Rosset and Martinez-Torres 2012). Peasants create autonomy from these agents by developing particular ways of farming, (Van der Ploeg 2008), markets (Schneider), and securing rights to resources such as land (Borras, Fernandes 2008; Van den Berg, Hebinck, and Roep 2018a). Autonomy can be obtained in different ways. Land rights can for instance be obtained through the legal demarcation of geographical areas as 'indigenous' or 'peasant' land, by conquering land or by purchasing it (Fernandes 2008). The struggle for autonomy occurs at different levels. For example, efforts by peasant movements to ratify the United Nations declaration on the 'Rights of Peasants and Other People Working in Rural Areas' took place at the international level.

Territorial development aims to constitute emancipatory alternatives through the construction of difference. As it proceeds, agents learn and create knowledge and practices by building alliances, distancing themselves from mainstream institutions, and experimenting with new practices (Wiskerke and Van der Ploeg 2004; Schneider and Niederle 2010). According to Escobar (2010, 48), territorial development may occur along the lines of dominant ideas of economy, individual, rationality, separation of nature and culture, mind and body and so forth, or it may imagine explicitly alternative constructions of the world from the perspective of difference. Difference

need not be constructed in opposition to dominant knowledge and practices, but may also emerge from what existed prior to what was dominant (Porto-Gonçalves 2006), or from bodily affects that overflow dominant practices and representations (Haraway 1993).

5.2.2. Resistance and existence

Authoritarian populism and neoliberalism may threaten peasant territorial practices, including the autonomy and difference that they harbour. These threats manifest themselves through laws, policies, markets and other interventions that put peasants in a position in which they have to compete for, or where they become prone to the grabbing of, resources by banks, agri-businesses, the state and peers (Van der Ploeg 2008; Schneider and Niederle 2010; Scoones et al. 2018). Such threats may be countered through both active and direct, as well as passive and indirect struggles.

Emancipatory struggles do not only become manifest as a fight against threats, but also as a fight for a different way of life – a different way of doing things. Some authors (e.g. Porto-Gonçalves 2006; Daskalaki 2017; Sherwood et al. 2017) propose to call this ‘a fight for existence’: a struggle against something or someone may thus be part of a larger struggle in favour of something else. In other words, peasant struggles can be a means to create room for something new. Struggles in support of something different often entail challenging dominant ideas and assumptions. Accordingly, we consider existence as an integral part of multiple forms of resistance.

We distinguish four forms of resistance: (1) overt resistance, (2) everyday resistance, (3) resistance of the third kind, and (4) rightful resistance. The first and most visible form of resistance is when agents come together around political ideas and engage in an ‘overt’ struggle, such as roadblocks, strikes, rebellions, demonstrations, and occupations (Wolf 1975). Overt resistance can be part of revolutionary expressions of class struggle (Paige 1975; Wolf 1975), as well as defensive responses to threats to peasants’ livelihoods (Scott 1976). Agents that come together in overt struggles may also do this as part of a strategy for existence: they want to create space for something new. Vergara-Camus (2009) for example shows how peasant rebellions in Brazil and Mexico were employed as a political resource to counter neo-liberal authoritarianism and sustain pressure on authorities to allow acquisition of land and building of new livelihoods by peasants. Overt resistance can also be used to counter authoritarian populism and assert peasants and workers as ‘the people’ rather than prejudiced ‘others’.

The second type of resistance is covert or everyday resistance, which occurs when agents seek to disassociate themselves from super-ordinates, such as landlords, employers or government officials, in the practice of everyday life (Scott 1987). This form of resistance is informal, subtle, indirect, and non-confrontational, including instances of foot-dragging, petty theft, or sabotage. Damage need not be material but may also be directed at symbolic elements that hold the relation with super-ordinates together (e.g. rumours, jokes about super-ordinates). The transformative potential of everyday resistance is found in the establishment of a supportive narrative that carries criticisms of prevailing political conditions; these may feed into other forms of resistance but may also cultivate existence and the desire for alternatives (Scott 1987; Malseed 2008; Kerkvliet 2009). The agroecology movement for instance creates a narrative that values peasants, Quilombolas and Indigenous peoples’ way of doing while countering prejudices about race, gender, and rural people.

The third type is ‘resistance of the third kind’, which resides in production and distribution practices (Van der Ploeg 2007, 2008). Resistance of the third kind is realised by creating or tuning production and distribution practices – for example, machinery, fertilisers, or markets – in order to become more autonomous from neo-liberal markets, and to be governed by alternative values such as reciprocity or solidarity (Van der Ploeg 2007, 2008; Sabourin 2011; Van den Berg, Hebinck, and Roep 2018a). Peasants may do this by buying less and producing more of their own goods and by establishing their own processing plants, food markets, labour arrangements and/or credit schemes instead of relying on global markets (Schneider and Niederle 2010; Pahnke 2015; Van den Berg et al. 2018b). This type of resistance strongly builds on expressions of existence, in particular when it leads to new production and distribution practices.

The fourth type is 'rightful resistance' (O'Brien and Li 2006; O'Brien 2013). Whereas overt resistance openly challenges governmental authority, rightful resistance engages with government through negotiation. In doing so, rightful resisters strategically employ the ideas and commitments of the powerful to change policies or laws that will serve their own interests (O'Brien and Li 2006). Rightful resisters often use divisions within the state by for example collaborating with some government institutions to exert pressure on others. Rightful resistance has been employed both to defend vulnerable groups from threats such as privatisation and legal reforms and to advance existence and autonomy, for example through policies and laws that support alternative practices (O'Brien 2013) (Table 1).

	Agent(s)	Emergence	Resistance	Existence
Overt resistance	Peasants who come together around a social demand	Spontaneously from informal networks and/or formally organised	Confront powerful agents and demand to stop changes that damage peasants	Confront powerful agents and demand recognition and/or support of difference
Everyday resistance	Peasants' everyday practices	Spontaneously from informal networks	Damage everyday practices at the cost of powerful agents without confronting them	Nourish everyday practices that allow for difference
Resistance of the third Kind	Peasant production and distribution practices	Strategic orientation towards autonomy	Production and distribution practices that minimize dependency on powerful agents	Production and distribution practices that allow for difference
Rightful resistance	Peasant alliances with powerful agents and their ideas	Formally organised, clearly defined objectives	Create alliances with powerful agents to negotiate or inhibit institutional or policy change from damaging peasants	Create alliances with powerful agents to negotiate for institutional or policy change that allows for difference

5.3. Social movements and the Brazilian state

In Brazil, land and improved rights for rural workers have, for a long time, been the central concern for peasant movements and organisations (Fernandes, Welch, and Gonçalves 2012; Welch and Sauer 2015). The struggle for land and rights diminished when the military seized power in 1964 and peasant organisations were banned. The government pursued a project of agricultural modernisation and export-led growth and policies were directed at the scaling and mechanisation of large rural estates. As a result, many peasants were displaced from their land, because they had to make way for these projects, and many rural workers were replaced by machines (Meszaros 2000).

To support peasants, the Pastoral Land Commission (CPT) was founded in 1975 by the left wing of the Catholic Church (CPT 1997; Fernandes, Welch, and Gonçalves 2012). During the period of military control, only Church-based organisations were allowed to work with and organise marginalised communities, enabling these organisations to secretly support the development of peasant movements (CPT 1997; Wolford 2010). At the time, considerable parts of the Catholic

Church in Brazil embraced Liberation theology, which is based on a materialist perspective of society and interprets the teachings of Jesus Christ in terms of liberation from unjust economic, political, and social conditions (Boff and Boff 1986). CPT's support for peasant movements ranged from mediating between peasants and government officials, to providing legal support to peasants entangled in disputes over and giving advice to peasants on nutrition and farming practices (CPT 1997). After the restoration to democracy in 1985, open struggles for land and rights for rural workers were once more possible and many new peasant movements and organisations arose. One of these organisations is the Brazilian landless workers movement (MST), which occupies abandoned land, demands its redistribution, and establishes new peasant territories (Stédile and Fernandes 1999; Wolford 2010). The MST aligned workers' dreams to live a free and autonomous life with movement leaders' wish for cultural change and revolution, which at times also generated tensions within the movement (see Loera 2006).

Another movement that emerged in the 1980s is that of the Base Ecclesial Communities (CEB): self-organised, autonomous groups that engage in politically oriented readings of the bible, using Liberation theology, with the purpose of improving their own conditions (Betto 1985; Boff and Boff 1986). The CEB's were set up by the Catholic Church and led by community members. With support from the CPT, the CEBs provided a basis for the foundation of new local rural workers' unions (STR). In many parts of Brazil, the CEB's and Liberation Theology questioned relations of patronage and dependency between sharecroppers and rural workers and landlords, giving voice to marginalised, silent and seemingly powerless populations (Stédile and Fernandes 1999; Comerford 2003), such as those described by Scheper-Hughes (1992) in the Brazilian Northeast. In this period, governments continued to almost exclusively invest in mechanised, chemical and export-led agriculture. This agri-business model of farming is also known as the Green Revolution and was later also promoted under family farmers.

In the 1990s, the focus of many peasant movements shifted from land reform and rights for rural workers to a struggle for an alternative rural development paradigm (Favareto 2006). New organisations included the Federation of Workers in Family Farming (FETRAF) and the Movement of Small Farmers (MPA). These movements began to criticise neo-liberal development and the agri-business model of farming and constructed alternatives based on principles of sustainable development, solidarity, and social and political democracy (Silva, Dias, and Silva 2014). These and other peasant organisations, including the MST, embraced agroecology as an alternative to the agri-business model of farming and formed alliances with other organisations working with agroecology – including academic and research institutions and NGOs (ANA 2014). In 2002, these organisations formally united in the National Articulation for Agroecology (ANA). Older movements such as the Movement of Rural Women also re-invented themselves as a network including multiple, autonomous movements (Rubin and Sokoloff-Rubin 2013). In 2003, the Workers Party (PT) rose to power and, under the pressure of peasant and agroecology movements, new policies and laws supporting peasants and other marginalised groups were established. These included credit programmes to access land, funds for rural education, and support for the establishment of institutional food markets (ANA 2014; da Costa et al. 2017). While these were positive political changes for peasant and agroecology movements, at the same time a powerful elite constituted by large plantation holders, transnational agri-business corporations and local rural elite – represented by the 'rural bench' in Federal Parliament – did not completely lose power. In different areas of Brazil, it even expanded its control over land and other resources, often at the expense of more vulnerable populations of rural workers, smallholder farms, Indigenous peoples, Quilombolas, mineworkers and rubber-tappers (Zimmerman 2010, 2016).

Policies and laws supporting peasants ended in the 2010s when right-wing populist opposition movements, nourished by right-wing Brazilian media empires, rose against the PT government (Pimentel 2015; Firmino 2017; Vieira 2017). This culminated in the impeachment of president Dilma Rousseff in August 2016. Under the newly inaugurated president, Michel Temer (2016–2018), austerity measures were put into place. Policies supporting peasants, Indigenous peoples, and other minorities have been and continue to be dismantled while support for agri-business is on the increase (Cunha 2017).

The history of peasant movements in Brazil is intertwined with the development of peasant territories in Araponga and Espera Feliz. In the 1980s, hundreds of CEB groups were established in both Araponga and Espera Feliz. CEB members from both territories later approached the CPT

to establish an STR in Espera Feliz in 1986 and one in Araponga in 1989. The initial objective of the STR was to protect rural workers and sharecroppers from encroachment by landlords. In Araponga, this focus shifted to land acquisition when the Land Conquest Movement arose in 1989.

In the 1990s, both territories also focused on alternative rural development and agroecology. The peasant unions from both municipalities became part of large peasant federations, FETRAF and FETAEMG, who in turn teamed up with the Centre of Alternative Technologies (CTA) and the Federal University of Viçosa, thus becoming part of ANA. New alliances and ideas led to the establishment of peasant associations, credit cooperatives, novel farming practices and local markets. The federal and state governments were effectively pressured to implement policies that helped establish land credit programmes, institutional markets and peasants' schools. Today, the new government is dismantling these same policies.

Peasant territories responded to neo-liberal authoritarianism by shifting between different types of resistance and existence. From 2003 to 2016, and under the aegis of the Workers Party governments, many peasant movements directed their efforts at rightful resistance – negotiating and pushing through new policies and laws. This allowed them to build new territorial practices and expand their territorial bases. When president Dilma Rouseff (Workers Party) was impeached in 2016 and austerity reforms were put in place, efforts shifted to more overt forms of resistance aimed at countering these reforms. At the same time, these protests also continuously questioned the legitimacy of the new government. Despite the dismantling of many policies that supported peasants, rightful resistance efforts were not in vain as many territorial practices were to some degree autonomous from political change and continue to exist today. At present, new forms of resistance and existence are beginning to emerge.

5.4. Resistance in the Zona da Mata, Minas Gerais

5.4.1. Overt resistance

When the Michel Temer government seized power from 2016 to 2018 after the impeachment of president Dilma Rouseff, a wave of protests took place in Brazil. The most visible protests were those opposing social welfare and labour reforms (as proposed by the Proposta de Emenda Constitucional 287 or PEC 287). PEC 287 proposes a reform of the pension system, replacing the right to pension after 35 years of work for men and 30 years for women, with a minimum pension age of 65 years old for both men and women. While pensions are funded by income – and other taxes – the reform requires peasants to pay an additional monthly contribution per household member. Peasant movements argue that this is unfair because they are already putting more into the pension system than that they get out of it. They also argue that peasants and workers will be hit hardest by these reforms because they start working at an early age and because their professions demand heavy labour. Peasant women who have a double workload (they work on the farm and at home) will be hit even harder.

Peasants' organisations, federations and confederations, including the Federação dos Trabalhadores e Trabalhadoras na Agricultura Familiar (FETRAF), Federação Trabalhadores Agricultura do Estado de Minas Gerais (FETAEMG), Confederação Nacional dos Trabalhadores na Agricultura (CONTAG) and the Movimento dos Trabalhadores Rurais Sem Terra (MST) as well as other workers' organisations and social movements, joined hands to mobilise people and organise protests against PEC 287. Peasants and peasant organisations in Araponga and in Espera Feliz were involved in some of these protests, including a large protest in Brasília in December 2016 and the first nationwide general strike in 23 years, in June 2017.

We voted for President Dilma [...] but he [Michel Temer] took our vote. So we said: 'we have to do something'. The fire was burning in ours veins: 'let's to go to the street and demonstrate'. (José, Leader Peasant Youth Group in Araponga)

Another large anti-PEC 287 demonstration was the 'For the life of Women! Against Welfare and Labour Reforms' demonstration in Belo Horizonte on International Women's Day in March 2017. For the women, the demonstration was not a conservative response to, or a fight against, PEC 287. Women also mobilised because the Temer government (2016–2018) signified a regression in what they accomplished in their fight for existence as women within the state, including rights and recognition for their work.

The fact that we are women doesn't mean that we don't have rights. So we are defending our rights. – Participant of the 'For the life of Women!' (Maria, Demonstration Participant from Espera Feliz)

Overt resistance against PEC 287 was also organised in the vicinity of Espera Feliz and Araponga on the 15th of March 2017 by youth and peasant organisations who blocked two highways (BR116 and BR265).

Overt resistance was also directed against other government reforms. On the 6th of December 2017, the Education Department of the Federal University of Viçosa (UFV) was occupied. Students, including peasants from Araponga and Espera Feliz, as well as university staff protested against severe budget cuts in the 'Education for and by the Countryside' programme as well as against 'Education without party' reforms. The former funds Licena, a university study that allows peasants and other people working with marginalised communities to obtain a university degree. The study is in part based on and teaches are popular pedagogies that engage with peasants' practices and experiential knowledge by situating and reflecting upon learning processes in the field (see Carvalho 2017). 'Education without a party' is a law that aims to limit political and societal discussions at high schools, for example by banning subjects such as philosophy and sociology. Peasants' main concern with the law and budget cuts is that they threaten difference and diversity by restricting peasants' freedom of expression and devaluing peasant knowledge.

They are creating a type of education in which you have no voice; you are the receiver of what the teacher teaches. (Fernanda, Student Lycena from Espera Feliz)

Some protests against the Temer government were part of events that seek to forge new and strengthen existing collaborations and celebrate diversity and difference. The Troca de Saberes (Exchange of Knowledges), a yearly event at the Federal University of Viçosa, aims to bring together citizens, students, researchers and peasants from neighbouring territories. Next to a protest against the government's reforms, the event hosted workshops on agroecological practices, presentations by peasant and Indigenous people and stalls depicting collaborative efforts between peasants and researchers. At the fourth National Agroecology Encounter (IV ENA) held at the beginning of June 2018 in Belo Horizonte, protests were also held alongside sessions where delegates from different territories shared and celebrated their struggles and experiences with agroecology and discussed collaborations and plans to deal with the current challenges. Preceding the IV ENA, regional encounters and protests were organised for the Zona da Mata region in Viçosa.

Next to a struggle for existence and against reforms, protests and the events that they were sometimes part of were sites of encounters where difference was articulated and where collaborations for existence and resistance were cultivated, forged or strengthened:

At the manifestations we are all united. We get to know each other, other groups. (Silvia, Member of the Raízes da Mata women's group in Espera Feliz)

5.4.2. Everyday resistance

An important form of everyday resistance in Araponga and Espera Feliz is found in the reflection groups of the Base Ecclesial Communities (CEB), which were informed by Liberation Theology and established throughout the whole of Brazil (see also chapter 4). During CEB's meeting members began to criticise the idea of sharecropping: they had to do all the work while receiving less than half of the harvest, were forced to work when it was raining or when they were sick, and had little choice over what, when, and how to plant. Through these encounters and discussions at the CEB's the idea of sharecropping changed from being seen as 'natural' to something that is unjust.

In a way she [the CEB's] awakens the oppressed. (Fernando, Board Rural Workers Union Araponga)

This new view led peasants in Araponga and Espera Feliz to organise themselves in what became the municipal Rural Workers Unions (STR), which offered legal protection to sharecroppers and rural workers from landlords.

In Araponga, the topic of sharecropping led to discussions about the unequal distribution of land. True justice, peasants concluded, could only be attained if they owned land. This wish for land also arose out of peasants' desire for a different existence; a life where peasants could decide when, what, and how to farm themselves. Land ownership was seen as the only way to become completely free from landlords. These discussions led peasants to form collaborations that would purchase land in groups. This became known as the Joint Land Conquest Movement.

The necessity arose for us to discover a way to obtain land. The problem was that we were poor, we didn't have any money. [...] We had to think of a different strategy to conquer land. (Donival, Board STR Araponga)

In the two decades that followed CEB's participants also challenged existing farming, market and education practices, forged agroecological alternatives and founded new organisations (see also below).

The union is CEB, the CTA is CEB, the EFA is CEB. All these organizations were born from her. [...] She pushed people to think and to create these institutions. [...] She made the movement. (Niuton, Coordinator Land Conquest Movement)

Beyond the reflection groups, the CEB's also came to mean what some peasants in Araponga refer to as 'life': loose encounters that cultivate the expression and articulation of difference and existence.

She [the CEBs] is the mother because she is patient with you, she gives you warmth, she feeds you, she takes care of you. The father [the union] gives direction, he imposes order. But the CEB's is very caring. [...] She is a force that is more inside people, that says: go, you can do it. You can do it, go. [...]. (Niuton, Coordinator Land Conquest Movement)

The CEB's doesn't have this thing of being Catholic or Christian. She has an awakening role. (Joana, Board STR Espera Feliz)

Despite their achievements, the number of CEB's groups has diminished in both municipalities. In the 1980s, Espera Feliz counted over 400 reflection groups, in 2017 there were 267. The activity of groups has also diminished. According to representatives of the STR in Araponga and Espera Feliz reasons for this include the Vatican's rejection of Liberation Theology, a shift in activity to formal peasant organisations which were no longer illegal after the dictatorship in 1985, criticism of CEB's members about the workings of the Catholic Church, increased dependency on public policies, and division within the CEB's regarding issues related to agro-toxin use. However, with a hostile government in power, peasants' unions in both Araponga and Espera Feliz have re-directed their hopes and efforts in the CEB's.

The CEB's are returning and becoming stronger because with this government people came back to themselves, to reality. (Joana, Board STR Espera Feliz)

Apart from the CEB's, everyday resistance is also present in self-organised women groups, of which various exist in Espera Feliz. At these meetings, women challenge the idea that the use of pesticides is necessary to have a decent income and life. Instead, pesticides have come to be seen as damaging their health and the local environment and tied to a system that exploits peasants. Women also challenged the idea that coffee production is a male domain, as it significantly relies on the labour of their women and children.

Like the CEB's, the women groups also nourish difference and existence. They do this by organising farm visits, recipe exchanges, workshops, food tastings, meetings and conversations. At these meeting, new ideas form and new agroecological practices emerge around forgotten plants, vegetable gardens, handicrafts, medicinal plants and beauty products, amongst others.

By fostering own production instead of buying industrialised foods such as pasta, soda, and instant juices, everyday existence feeds into resistance of the third kind. Within the group women are stimulated to express themselves and develop argumentation, mobilisation and organisation skills that are seen as important for peasant movement work, thereby feeding into rightful resistance.

When I came in here, I had no courage to speak to people. I did not have the guts to pick up things. But nowadays I am the secretary of the group. So I think, the group of women help us a lot to raise self-esteem. (Josefina, Board Raízes da Terra Womens' Group)

The government austerity measures for instance have motivated women groups to work on becoming more self-sufficient in terms of food, medications and so on (see section on 'resistance of the third kind'). Everyday resistance and existence were also found to feed into rightful and overt resistance as women were stimulated to join demonstrations, the board or working groups of the STR and other peasant and women organisations.

5.4.3. Resistance of the third kind

Resistance of the third kind can be found in several farming practices, many of which were constructed in response to government policies and practices that promote agribusiness ways of doing. These agents pressured peasants to use chemical fertilisers, to specialise in the production of coffee, and to adopt mono-cropping. They promised that these practices would give peasants freedom and wealth. The production of food crops was discouraged. It was said that food crops could better be bought in the supermarket.

Peasants, however, were not always able to produce enough coffee to pay back the investments they had made in farm inputs and buy food, especially when the price of chemical fertilisers and food in the supermarkets began to increase. Agri-business practices were moreover causing land degradation which led to yield declines.

I was so busy with producing coffee that I could not take care of my mother when she became sick. (João, Arapongan peasant)

When peasants realised that agri-business practices degraded their natural resource base and did not bring the freedom they envisaged, they began to challenge these practices. Discussions took place at the CEB's, peasant organisations and informal groups which led peasants to collaborate with the CTA and the Federal University of Viçosa (UFV) and devise agroecological practices that reduced land degradation and farm dependency on coffee markets. These collaborations led to new initiatives including farmer-led experimentation, on-farm experiments, peasant-to-peasant exchanges and other gatherings where problems and progress were reflected upon.

In Araponga coffee agroforests were developed with trees that can supply nutrients to the coffee, like Mycorrhiza-hosting trees that can adsorb phosphorus that is tightly bound to the soil, leguminous trees that can capture nitrogen from the air, or deep-rooting trees that can take up nutrients at greater depths (Cardoso et al. 2001; CTA 2005). In both municipalities practices to protect and regenerate soils (e.g. tree planting, green manuring, cover cropping, and selective weeding) arose. When these practices were in place in the 1990s joint experimentation and exchanges amongst peasants and between peasants and researchers continued. These new practices strengthened peasants' resource base.

New, reinvented and revived food practices also emerged from peasants encounters and collaborations. More and a higher diversity of food crops were cultivated including a large variety of crops, vegetables, fruits and medicinal plants. Animals were also held, including chickens, pigs, cattle and goats. Trees were planted in agroforestry systems for their fruits and wood. Foods began to be processed by peasants themselves – both in a collectively-owned processing plant and by a municipal peasant cooperative. Cassava and maize, for example, were processed into flour; pig fat and avocados into soap; sugarcane into sugar; milk into cheese; and fruits into jams and juices.

Peasants continued to produce coffee and engage in commodity markets to obtain money. They argued that they did this to be able to go to the doctor or dentist when needed, send their children to university or simply be able to go out or have a vacation.

Agroecological practices were not only used to reduce dependency on commodity markets but also for existence (Botelho, Cardoso, and Otsuki 2016; Van den Berg et al. 2018b). Many peasants wanted to create a type of farming that allowed them to live and work according to values that differed from agri-business ones. They wanted more freedom to decide when and how to work, to farm with more respect for nature, and for their farm to be a pleasant and healthy environment for their family to live and work in. Foods were not only grown to avoid the supermarket but also because peasants valued the taste of their own varieties. Some trees were kept because they had beautiful flowers or because they offered shade while working the field. Some products such as cheese were produced as gifts. Sugarcane was produced to share with fellow peasants who helped out with the harvest.

Resistance of the third kind was found not only in farming practices but also in practices through which peasants acquired land and credit for land. The Land Conquest Movement, for example, functions as an alternative land and credit market in Araponga (Campos 2014; Van den Berg, Hebinck, and Roep 2018a). Strict conditions and high interest rates make it unfavourable for peasants to acquire credit from banks and land is often expensive and sold in large tracts. With the Land Acquisition Movement peasants formed groups, pooled their financial resources and collectively bought land. The Land Conquest Movement also tried to ensure that land that peasants wanted to sell was offered to fellow peasants, so that land remained within the peasant territory.

With the land acquisition movement the people themselves do everything. They pay for the land, they build their own house, plant their fields [...] with their own resources. (Niuton, Coordinator Land Conquest Movement)

The land conquest movement is also an expression of existence. While it enables peasants to access credit outside of, and keeps land from entering, neo-liberal markets, the movement is also seen as a project to create an agriculture that is based on values that respect the land, animals, and neighbours. These values are also reflected in the 'ten commandments of land conquest' drafted in 1995, which are a set of principles such as 'recover and preserve the soil', 'use leguminous species', 'visit your neighbours farm', 'recover and preserve the soil', 'take care of animals' (CTA-ZM 2002, 26).

Resistance of the third kind was also found in alternative food markets that made peasants less dependent on the coffee market, allowing direct sales to consumers. In both Espera Feliz and Araponga peasants founded a cooperative through which they run a peasants' shop and an open peasants' market. The shop and the open market sell fruits, vegetables, cassava, coffee, beans, maize, maize flower, cassava flower, sugar, honey, syrup, and other products directly to consumers.

When you are able to get things directly from producer to consumer, both gain. Because you can sell for more while the consumer pays less. Unfortunately, it is usually the middlemen who take the largest share. (Edimar, Araponga Peasant)

To support these markets, the cooperative in Espera Feliz established processing plants that, for example, grind coffee into powder or package maize flower and beans. Next to selling within the municipality, the cooperatives in Araponga and Espera Feliz collaborate with the CTA and the UFV to establish the Rede Raízes da Mata, a network that links peasant cooperatives to open markets and shops in Vigosa. The cooperative in Espera Feliz also collaborates with consumer cooperatives in the major cities of Brasília, Rio de Janeiro, Belo Horizonte, and São Paulo. Next to consumer markets the cooperatives in Araponga and Espera Feliz have also created an institutional market through which they provide food for school lunches. This is made possible by a government law (see the next section).

5.4.4. Rightful resistance

Rightful resistance is largely found in practices through which peasants negotiate changes in government policies and laws and make claim to access these and other policies and laws. Through their involvement in the large peasant federations FETAEMG and FETRAF, the STR of Araponga and Espera Feliz were able to do so.

It was because of the struggle by movements, not only by the one in Espera Feliz, that we conquered public policies to access land, markets and dignified housing. (Joana, Board STR Espera Feliz)

One of these policies is the Land Credit Policy (Crédito Fundiário) which provides loans for farmers to buy land at low interest rates. Later, the Housing Policy (Política de Habilitação), which provides finance for farmers to build a house on the purchased land, was implemented. The STR in both municipalities mediated access to these policies. Becoming recipients of these policies is considered to be only one part of rightful resistance. Claiming the benefits these policies bring often meant the STR had to go through complex bureaucratic hurdles (e.g. produce a whole range of documents peasants often did not have such as land titles, identity cards or producer's cards) and pressure government representatives in Belo Horizonte or Brasília.

With the impeachment of president Dilma Rousseff in 2016 the land credit and housing policies were frozen until further notice. The STR in both municipalities are currently negotiating with government officials to accept the applications for credit that were made before the policy was frozen.

We fought nine years to get a proposal for the Land Policy approved to settle 38 families [...] which are pending for two years, four years. (Joana, Board STR Espera Feliz)

Peasants have little hope that the policies will continue. Nevertheless, peasant territories have already been able to acquire large tracts of land as a result of them. In Espera Feliz, 100 families acquired land and 80 people a house. They also established a new settlement: Assentamento Padre Jesus. In Araponga, land acquisition continues through the land conquest movement (see section on 'resistance of the third kind'):

The land conquest movement slowed down after the Land Credit Policy [...] But today people are going back to the old model [the Land Conquest Movement]. (Niuton, Coordinator Land Conquest Movement)

Rightful resistance can also be found in the Food Acquisition Programme (PAA). The PAA finances the acquisition of food stocks for social welfare organisations. In Araponga and Espera Feliz the programme is coordinated and mediated by peasant cooperatives. Like the Land Credit Policy, the PAA faces continuous bureaucratic hurdles. These include getting proposals approved, getting all institutions registered for the programme, negotiating with individual farmers about the amounts they will deliver, and making sales reports of every delivery. According to a peasant representative in Espera Feliz, just making the report is almost a day's work. The food acquisition programme has also been frozen. However, peasant cooperatives in Araponga and Espera Feliz are confident that what they build (through resistance of the third kind) will stay.

We established other markets. We did not only focus on public policies. [...] Because if the public policy stops, the doors would close. [...] These markets are not affected by government. They give the cooperative independence. (Joana, Board STR Espera Feliz)

Rightful resistance is evident as well in the National School Feeding Programme (PNAE). PNAE is based on a law that dictates that at least 30% of the ingredients in school meals from public schools should be produced by family farms. Like with the PAA, the peasant cooperatives coordinate this programme by maintaining contact with the different schools and farmers and synchronising supply and demand for a wide range of foods. PNAE is currently still in place. By organising continuous engagement between schools and peasants, it feeds into resistance of the third kind (see above).

Rightful resistance is also present in the continuous claims that the peasant high school Escola Família Agrícola (EFA-Puris) has to make to access the Bolsa Aluno, the Fund for Rural Education and other subsidies on which the school depends. Subsidies from the Fund for Rural Education

have been cut by 50% between 2015 and 2017 and are planned to be cut by another 86.1% in 2018 (Intini 2016). EFA-Puris has to apply for funding every year and on several occasions funds were not transferred, resulting in time-consuming negotiations with government officials. In a few cases negotiations failed and the school resorted to more overt forms of resistance, including a protest in Belo Horizonte and a petition, to obtain financial support.

The policies that peasant movements have negotiated, and have laid claims on, are also expressions of existence. Land is not only acquired for the sake of ownership, it is also 'a dream', a basis to establish a different way of farming and a different way of life.

Acquiring land is not acquiring land to simply have land [...] Because with land the family will live better, will be able to produce without using pesticides. Sometimes farmers don't have this independence where they live. Sometimes they are obliged to do things they are told to do because they don't own the land. (Joana, Board STR Espera Feliz)

A farmer without land is like a bird without wings. It knows that it cannot fly. (Donival, Board STR Araponga)

The markets created through the PAA and PNAE also support peasants in their struggle for a different type of life and farming, for instance by enabling them to combine farm diversification with sales of multiple products.

The EFA-Puris school seeks not only to offer access to education but also to construct a different type of education – one that values peasants' knowledge, experiences, and practices. This is done by organising farm excursions, talks by farmers, peasants' reflections on the work they carry out on their farms, and applications of the curriculum to farm practices (e.g. making soap during chemistry lessons and making effective micro-organism mixtures during biology). Much of the educational curriculum teaches students how to become less dependent on external knowledge and farm inputs, thereby feeding into resistance of the third kind. The school also teaches the history of their territory and its people – many of who are descendants from an Indigenous group called the Puri.

The Puri for us has two meanings: love for the land and the struggle for freedom. So you are free, you walk with your own legs, walk with your head up. You will not be anyone's employee. (Fransisca, Coordinator Rural High School Araponga)

Overall, government austerity measures have had large impacts on the practices and prospects of rightful resistance. However, the STR's in Araponga and Espera Feliz trust that their territories have the capacity to deal with this.

There is a lot of work that we do that started before this government. [...] How did we do things before? The CEB's, the base work. (Joana, STR Espera Feliz)

'The persecution of the government is awakening the memory of the people. The people are waking up, and feel the need to unite and organise themselves. (Donival, STR, Araponga)

5. Discussion: peasant territories as sites of and bases for resistance and emancipation

5.5.1. Peasant territories as sites of resistance

Peasant territories in the Zona da Mata engendered different forms of resistance and existence to defend and advance peasant ways of doing and life in the face of political trends of neo-liberalism and authoritarian populism. In the literature on peasant territories, it is argued that peasant territories continuously confront, and enter into conflict with, agents that promote neo-liberalism such as governments, landlords and agri-business, because they threaten non-commodity relations that are seen to constitute the territory (Fernandes 2008; Camacho and

Cubas 2011). While such conflicts are also present in the Zona da Mata, neo-liberal threats are also addressed through other, less confrontational means, including 'resistance of the third kind' and 'rightful resistance'.

Through resistance of the third kind, which includes the production of own inputs and food and the construction of nested markets, peasant territories reduced their dependency on some, and completely circumvented other, commodity markets, thereby significantly reducing pressures that draw peasants to a 'race to the bottom' (cf. Marsden 2012). Through rightful resistance, peasant territories moreover employ the government's own rhetoric on rural development and sustainability to negotiate for laws, agricultural extension, policies and rights that serve to advance peasants' ways of doing and life, such as the National School Feeding Policy and the Land Credit Policy. Rightful resistance was particularly employed under the Worker Party's government (2003–2016), which although mainly supporting agri-business, was more open to peasant and agroecological movements.

Escobar (2010) argues that in Latin America, the prejudiced 'other' of authoritarian populism has, since colonial times, been portrayed as non-modern groups such as Black, peasant, women and Indigenous people. Still, the central depiction of modernity as a defining feature of 'the people' is a more recent development. In Brazil, this arguably started with protests against the Rouseff's Workers Party government in 2015, where protestors claimed that left wing parties and the groups they support act against and rob 'the people' (Firmino 2017). The depiction of the people as modern and superior opposed to others as non-modern and backwards is expected to reach new extremes under Jair Bolsonaro's current government (2019–2022), which promotes the rhetoric that peasants, landless and Indigenous people, environmentalists, social scientists, feminists, etc., act against the progress of the Brazilian people. In Brazil, moreover, this authoritarian populism goes together with neo-liberalism: the insertion of people in commodity markets is depicted as a defining feature of being modern.

To deal with threats of being excluded, marginalised or displaced it has been argued that networks that reassert and defend difference, and that promote horizontal dialogue between different knowledges, must be created (Porto-Gonçalves 2006; de Sousa Santos 2009; Escobar 2010). In the Zona da Mata, threats posed by authoritarian populism come from and are defended at both the local and the national level. At the local level, agents such as shopkeepers, municipal authorities, and pesticide salesmen spread the rhetoric that modern farmers, which include agri-businesses, plantations and entrepreneurial family farms, are superior to peasant farmers. They thereby create shame among peasants and tensions between them and neighbouring modern family farmers, pressuring them to modernise or migrate to the city. These threats are addressed through everyday resistance, which is found in spaces where peasants and their allies discuss and politicise modern agricultural practices. This includes the creation of counter narratives that depict the negative effects of modern farming on human health, the quality of products, the environment and on peasants' freedom, and that champion peasant and agroecological ways of doing. These spaces can be seen to constitute and nourish the formation of networks of difference that advance peasant narratives and where innovations that support peasants ways of doing and life are developed.

At the national level, austerity measures implemented by the government of Michel Temer (2016–2018) threatened to dismantle policies and laws, including Education for and by the Countryside, the Land Credit Policy and the Food Acquisition Programme, that support peasants' territorial education, market and land acquisition practices. To address these threats overt resistance was employed, which mobilised peasants and linked them to peasant organisations throughout Brazil and to movements of rural and urban workers, Quilombolas, Indigenous peoples, landless farmers, environmentalists, feminists and other movements, in a mass protests against government reforms. While these protests did not stop the reforms, they did create and strengthen networks that affirm difference.

5.5.2. Peasant territories as bases for emancipation

Territorial development, as the unfolding of autonomy and difference, was found to be related to three pathways of emancipation. The first pathway lies in the farm labour and production process (Chayanov 1966; Van der Ploeg 2008, 2017). Several scholars (e.g. Toledo 1990; Chayanov

1991; Van der Ploeg 2008; Pahnke 2015) argue that peasant emancipation is fostered through the creation of production, processing and distribution systems that are autonomous from hostile relations such as landlords and commodity markets. Such systems are shaped according to peasants' own knowledge, values and aspirations and reduce peasant dependency on commodity markets, while not breaking the relations with commodity markets entirely. The latter still enable peasants to obtain financial resources to participate in societal activities such as go to university or a hospital without being drawn in a 'race to the bottom' (Van der Ploeg 2017). Peasant territories in the Zona da Mata harbour a socio-ecological base constituted by horizontal relationships between peasant, nature, the community and militants from peasant and agroecology movements, which, through resistance of the third kind, are drawn in different constellations to form production and distribution systems that are autonomous and attuned to values of cooperation, reciprocity, freedom, trust, friendship, and respect for nature. Emancipation was not only sought in production and distribution but also in the creation of self-governed education, innovation and land distribution systems.

The second pathway is found in the formation of political subjects and popular movements (Gramsci 1971; Laclau and Mouffe 1985). For Gramsci (1971), people become political subjects when they come to recognise and valorise themselves as protagonists and form a collective identity capable of transformation. A pathway to emancipatory alternatives then lies in the articulation of shared symbols or social demands that explicitly oppose dominant ideas, to create a popular movement that cuts across classes. In the Zona da Mata, social encounters of peasants in community groups, peasant schools and union gatherings can be seen to constitute a cultural-political base where, through everyday and overt resistance, peasants become political subjects. In these encounters, popular movements are moreover created by problematising everyday relations with landlords and agri-business and by articulating social demands that oppose agri-business together with researchers, citizens and activists. Finally, the politico-cultural base engendered articulations not only based on opposition to dominant agents and ideas, but also based on affects that overflow or pre-exist dominant categories.

A third pathway of emancipation lies within the state. Fox (2007), for example, argues that the pathway to emancipation lies in deepening engagements between the state and civil society. These engagements target state's institutional infrastructure through a politics of representation and accountability (Ribot 2013). This pathway resonates with the processes we described above as rightful resistance: In the Zona da Mata relations between peasant unions, cooperatives, federations, confederations, and agroecology organisations and the state formed a politico-institutional base that enabled peasant territories to engage with and transform the state. The relations, skills, and materials harboured by the politico-institutional base enabled policies and laws to be altered and new state-civil society mechanisms to be introduced; which, in turn, have led to peasant land acquisition and a better distribution of resources within peasant territories.

5.6. Conclusion

Peasant territories engender different forms of resistance and existence to defend and advance peasant ways of doing and life, particularly in the face of neo-liberalism and authoritarian populism. In the Zona da Mata threats against neo-liberalism are addressed by employing resistance of the third kind, which involves the production of own inputs and food and the construction of nested markets, to reduce dependency on commodity markets. Also, rightful resistance is employed to negotiate for policies that support these practices. Threats against authoritarian populism are addressed through everyday resistance and overt resistance, which challenge relations and narratives that depict peasants as inferior and which create narratives and networks that promote difference.

The significance of peasant territories for emancipatory alternatives is twofold. First, peasant territories contain a socio-ecological, cultural-political and politico-institutional base that harbours and nourishes a pool of horizontal relations between nature and people, natural resources, affects, skills, capacities and ideas. These relations have the potential to combine in constellations that foster emancipation by engendering different forms of resistance and existence, fostering people to problematise and mobilise against exploitative relations and transforming parts of the state.

Second, the peasant territory is an emancipatory alternative itself. Peasant territories are constituted by alternative, autonomous and self-governed farming, educational, market exchange, innovation, land distribution and other territorial practices. On the one hand, these territorial practices defend peasants from destructive political trends and create autonomy from dominant agents and ideas. On the other hand, these territorial practices operate according to peasants' own wishes and values such as that of cooperation, reciprocity, freedom, trust, friendship, and respect for nature, in contrast to those wishes and values expressed by proponents of neo-liberalism and authoritarian populism.

Chapter 6

From scaling to building popular movements: the political articulation of agroecology in Brazil

Abstract

Local alternatives, such as agroecology, are increasingly seen to contain solutions that can be scaled for wider societal transformation. While researchers and policy makers have mainly focused on scaling as the creation of an institutional environment that is supportive of sustainable practices, less attention has been paid to the political viability of such efforts. In this article we study transformation by the agroecology movement in Brazil through the theoretical lens of political articulation. We show that local demands were mobilised in an institutional politics to gain policy support and in a popular politics to create movements that pose systemic challenge to authority. We argue that the political viability of scaling lies its ability to embrace local concerns and to form alliances that are powerful enough to maintain local demands when engaging with institutional agents at the national level. We conclude that social movements are particularly promising in this regard.

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6.1 Introduction

Local alternatives to mainstream agriculture are increasingly seen by researchers and policy makers to contain solutions that can be used as a basis for wider sustainability transformation (Elzen et al. 2017, FAO 2009, La Via Campesina 2015). Alternatives to mainstream agriculture are thought to be better able to address local demands for better livelihoods while at the same time also providing societal benefits such as clean water, improved soils, increased biodiversity, social cohesion, and equity. Agroecology emerged in the 1970s and has since increasingly been recognised as a local alternative to industrial agriculture in various localities across the world. It is now seen as a prime example how parts of society can undergo a “sustainability transformation” by international organisations such as the Food and Agriculture Organization of the United Nations (HLPE 2019, FAO 2018), national governments such as France (Gonzalez et al. 2018, Schmitt 2016), NGO’s such as OXFAM (Action Aid 2018, OXFAM Solidarité 2014), multiple research institutes (Côte et al. 2018, IPES-Food 2016) and social movements (Friends of the Earth 2018, Nyeleni 2017, La Via Campesina 2015). The term agroecology was first coined by agronomists to denote an ecological alternative to the more chemically and mechanically oriented, industrial approach to agriculture (Gliessman 2014). Later, the term was also picked up by development workers to differentiate local ecological practices from those of Green Revolution (Méndez et al. 2013). Agroecology was also adopted by peasant and other social movements to denote a more systemic struggle against the modernisations and neo-liberalisation of agriculture and food systems. As a result of these differences, agroecology has been termed as science, a practice and a movement (Wezel 2011). The broadening of the meaning of agroecology is also reflected in the scientific literature on agroecology which, in the past decade, has expanded from its initial focus on farming to encompass entire food systems including markets and institutions (Gliessman 2013).

In the literature on agroecology, the sustainable transformation of food systems is mainly understood as a result of scaling agroecological practices (Khadse et al. 2018, Brescia 2017, Nicholls and Altieri 2018, Gliessman 2014). Scaling is a process that occurs across two dimensions: 1) as the geographical spread of productive and distributive practices that operate in accordance to agroecological principles (also called outscaling); and 2) as the creation of an institutional policy environment that is enabling for these practices (also called upscaling). For outscaling, scholars have for instance focused on showcasing inspiring practices and model farms (also called ‘lighthouses’) to farmers (Nicholls and Altieri 2018), facilitating the exchange of knowledge between peasants (Martinez-Torres and Rosset 2014) as well as on discussing strategies that gradually change farms, starting with smaller interventions, such as reducing the use of chemical inputs, and progressively ‘moving up’ to a redesign of the entire agroecosystem (Gliessman 2014). With regard to upscaling, scholars have mainly focused on institutionalizing agroecology in education (Nicholls and Altieri 2018), agricultural extension (Gliessman 2014) research (Mendez et al. 2013), and public policies (Gonzalez et al. 2018, Schmitt 2016). While the literature on agroecology predominantly focuses on the social, technical and institutional mechanisms of scaling, it is less clear how agroecology as a local alternative to mainstream agriculture becomes politically viable. Specifically, we may ask ourselves how attempts at scaling of agroecology mobilise localised political demands and/or connect these to political demands and ideas at national and international levels. Critical contributions to the literature in agroecology have shown that while scaling efforts can lead to more supporting policies, such policies may do little to change structural societal patterns, including the distribution of land, the control over markets, and the democratic process within the state itself – patterns which continue to favour mainstream agriculture (Petersen 2012, Molina et al. 2019, Anderson et al. 2019). Scholars have also argued that the engagement with powerful institutions has made agroecology susceptible to co-optation - resulting in scaling efforts that conform to, rather than transform, the dominant regime (Levidow et al. 2014, Giraldo and Rosset 2017, Rivera-Ferra 2018, Giraldo and McCune 2019). As such, scaling efforts can hamper rather than support local demands from becoming a political issue at higher levels.

In political science, the question of how local demands reach politics at higher levels has been addressed by the idea of political articulation (Laclau 2005, Griggs and Howarth 2008). The study of political articulation suggest that the political power that emanates from articulating social demands to powerful, institutional agents in the form of individual requests, also known as institutional politics, is relatively limited even when individual requests are successful. More substantive political power emanates from linking social demands together into political claims

that confront these powerholders with a unified idea that expresses a challenge to the institutional order (popular politics). Through the mechanism of articulation, these authors argue, different societal groups can thus come together in popular movements that are capable of bringing local demands to the political agenda and changing the political agenda of a country or international forum as such.

In this article we study sustainable transformation and agroecology through the theoretical lens of political articulation. Our study focuses on the agroecology movement – a movement which has pursued both institutional and popular politics over time and across regions. We focus on the case of Brazil, where agroecology has grown into a strong movement over the past thirty years. More recently it has lost political support from the federal government but gained support from other civil society organisations as well as from governments at the state and municipal levels. By discussing how this movement fosters transformation through political articulation, we show the value of a political perspective on scaling and discuss the implications of a choice for either institutional or popular politics.

6.2 Transformation and political articulation

The theoretical concept of political articulation directs attention to local social demands and how these are changed and carried to different levels in processes of transformation (Howarth 2000, Laclau & Mouffe, 1985). This political perspective contrast with a view that simply assumes that local demands are met when institutions become more enabling to particular practices (that make up agroecological food systems). Furthermore, and instead of taking transformation as a cooperative endeavour, the concept of political articulation considers processes of transformation to be characterised by dynamics that can create political conflict or shift power balances. Moreover, by distinguishing institutional from popular politics, political articulation directs special attention to how modes of engagement between social movements and the institutional order may shift from cooperative to oppositional. As such it contributes to our understanding of transformation as a political phenomenon.

Political articulation is a term used in political discourse theory – a theory which understands the world in terms of signifiers (e.g. symbols, words, sounds) that relationally align to one another to fix meaning in particular ways (Jorgensen & Phillips 2002, Howarth 2000, Laclau & Mouffe, 1985). Accordingly, the way that meaning is fixed limits and guides the course of social action. However, meaning is never fully fixed as there are always alternative ways of linking signifiers together. Another way to say this is that meaning is always overdetermined: a symbol or signifier is open to interpretation and may mean multiple things at the same time. The mechanism of articulation then refers to the process through which individual signifiers are linked to specific social demands in an interpretive moment (Laclau 2005, Griggs and Howarth 2008). Social demands can be articulated together with governmental authorities to turn them into specific policy responses. They can also be articulated by local communities or social movements and directed towards governmental authorities in more oppositional way. As we argue, the notion of articulation can shed light on the different roles that social movements play as they engage with governments.

Articulation starts when grievances or frustrations are turned into social demands (Laclau 2005, Griggs and Howarth 2008). Grievances and frustrations are bodily sensations that overflow and thereby hold the potential to disturb the way meaning has been fixed (Davies 2011, Haraway 1993, Deleuze and Guattari 1983). This result from external disruptions, such as changes in government policy, or from repetitive practice; for instance when a particular activity leads to physical exhaustion, mental fatigue or the inability to pursue other wishes (Woodward and Lea 2010, Deleuze and Guattari 1983). An example of this is when soil degradation disturbs the equation of industrial agricultural practices as productive and profitable. When this occurs, reality no longer corresponds to the way meaning has been fixed, which in turn opens the way for meaning to be fixed in a different way. A grievance turns into a social demand when the grievance is articulated to a particular social relation. Grievances may be articulated in relation to agents that are seen to be the cause of a disturbance. Grievances about health, for example, may be articulated to agri-business and consolidate into demands for a ban on agro-toxins. Grievances can also be affectively reworked to activate relations for the construction of alternatives and

demands to support them (Braidotti 2013). For example, grievances about soil degradation can activate farmers' relation with trees and micro-organisms in an effort to construct alternative farming practices, and be articulated in demands to support them.

Social demands can be articulated and related to existing authorities or systems of power following one of two logics (Laclau 2005, Laclau and Mouffee 1985). The first is the logic of difference through which demands turn into requests that are dealt with individually and that do not disturb the existing institutional system. The second is the logic of equivalence, through which different demands are combined and linked to one another into claims that challenge the existing institutional system. The latter involves the production of empty signifiers and symbolic constructs through which subjects can identify. Empty signifiers are progressively emptied of ideological content as new demands and identities are attached to them, and serve as points of symbolic identification for a range of groups and subjects with divergent identities and interests.

The logics of equivalence and difference forms the basis of popular²¹ and institutional politics respectively (Laclau 2005, Griggs and Howarth 2008). Populism and institutionalism here do not refer to a particular ideology or organisational form but to different processes that are to some extent present in all forms of political activity. An institutional politics follows the logic of difference to pose individual requests. Demands formulated within such politics are put forward in a piecemeal or punctual fashion and addressed by powerholders without furthermore altering the status quo. These type of demands do not challenge the institutional system; rather, they seek solutions within it. An example of this is when sharecroppers request their landlord for a larger share of the harvest, or when a farmers' organisation request policies in support of sustainable practices. Within institutional politics demands are subject to concessions and negotiation and can thereby be absorbed or co-opted by the system of power. A failure to satisfy a request can lead to a hardening of the sense of grievance and turn the request into a claim.

Popular politics follows the logic of equivalence through which demands are combined into a claim. The combination of demands involves constructing a collective identity such as 'a people' or 'a community' which is placed in opposition to authority. Popular politics thus profess to speak in the name of the people and seek to form a shared set of values, beliefs and symbols which can advance the interests of such collective subjects. In this type of politics, demands are articulated in such a way that they are opposed to the institutional order and current authority. This creates a seemingly unbridgeable gap between the people and authority - which in turn forms the basis to challenge authority (Laclau 2005). While popular politics has been associated with political parties and populism itself has led to authoritarianism, it has been argued that it can also contribute to processes of democratisation and social inclusion (Aslanidis 2017, McKean 2016). Particularly social movements that unite diverse, otherwise fragmented groups (e.g. feminism, anti-fascism, agroecology) into a broader popular movement can construct a populism from the bottom up and contribute to democratisation (Aslanidis 2017).

6.3 Case description and methodology

In this article, we focus on transformation by the agroecology movement in Brazil. In Brazil, what is known as 'alternative agriculture' preceded the introduction of agroecology. Alternative practices, which include farming, as well as marketing and educational practices, were developed by collaborations between peasants, researchers, local NGOs and peasant organisations, starting in the 1980s (Schmitt 2016). The term agroecology gave conceptual rigor to these practices that were understood as radical alternatives to those promoted by neo-liberal modernity. This marks a contrast with Europe, Africa and Asia where the embedding of agroecology in the reality of farmers is weaker and where agroecology is often not understood as a radical alternative. With the formation of the Project of Alternative Technologies network (Rede PTA) in 1983 and its reorganisation in the National Articulation on Agroecology (ANA) in 2002, the agroecology movement in Brazil began to incorporate other agrarian movements and operate at the national level (Bensadon 2016, Schmitt 2016). From 2002 on, ANA also began to increasingly engage with progressive social movements that are not primarily agrarian. Over time, one can witness an

²¹ Laclau (2005) uses the term populist politics.

intensification of engagements between local and national agroecology movements and municipal, state and national agents (Bensadon 2016, Schmitt 2016).

Our research draws on extensive fieldwork and documents that concern the emergence of agroecology at the national and local levels from the 1980s to 2019, which is the last year of data collection. At the national level it follows the emergence of ANA, which brings together most organisations in Brazil that work on agroecology. At the local level our research follows the development of agroecology in the municipalities of Araponga, Divino and Espera Feliz in the region of Zona da Mata, Minas Gerais, during this same period. We adopted a qualitative approach to data collection that allowed us to capture how discourse or meaning emerges, changes or is contested (Schwartz-Shea and Yanow 2012). We consider this to be crucial for understanding how social demands are shaped and how these lead to transformation through articulation. Discursive data consisted of transcribed interviews, documents and transcribed recordings of meetings.

In-depth interviews were carried out by the first author in 2008 and in the period 2016–2018 with twenty-five individuals. Interviews and documents were selected to obtain a picture of the discursive engagement of different local and national organisations and movements with one another and with institutions. Interviewees included farmers, peasant organisations, NGO staff and members and leaders from national agrarian and non-agrarian movements. A balance was sought in age and gender when selecting interviewees.

To analyse the collected data, several rounds of analysis through coding were conducted; we placed special attention to different social demands and how these connected to grievances and frustrations, institutional and popular politics. To explore the significance of the findings for scaling, we contrasted the results of the analysis with the literature on agroecology.

6.4 Articulating agroecology in Brazil

6.4.1 Grievances and frustrations

Articulation starts with the turning of grievances and frustrations into social demands. During fieldwork in the Zona da Mata in Minas Gerais various grievances and frustrations were found amongst farmers. A first type of grievance concerns the work that sharecropper farmers have to do. In sharecropping arrangements farmers do not own the land but rent it in exchange for part of the harvest. In the Zona da Mata this often concerns the cultivation of coffee - of which half is given to the landlord (Cardoso and Mendes 2014). Grievances emerged from abuse by landlords. Landlords often gave less than the share of the harvest that was agreed upon, demanded that sharecroppers take on extra tasks such as housekeeping and often insisted that coffee be sold via them rather than directly. Also, sharecroppers were often not allowed to decide what, how and when to plant. This also led to grievances and frustrations - for instance of having to work in the rain or for not being allowed to have a vegetable garden.

A second type of grievance concerns farmers' decreasing incomes. This is caused by decreasing coffee prices and increases in the price of chemical fertilisers and of food that farmers buy in the stores. Grievances emerged as farmers had to work harder, had less time to do things outside of work, and had a bad prospect for the future. Grievances emerged not only among sharecroppers but also among peasants who owned a small plot of land:

"At the moment, farmers are being massacred, my God. The work it takes for you to produce just to pay off your inputs! And by the time you sell there is no good price. [...] Nothing is left! You even have to invest. Take from your own pocket. So it is very difficult."
(Farmer Araponga)

A third type of grievance concerns the contamination of people and animals by pesticides. Pesticides that are applied in the pastures, coffee plantations and maize fields also contaminate the air, drinking water and the surrounding environment. Grievances emerged when pesticide contamination led to illness and deaths among people and when various species of plants and animals disappeared as a consequence of pesticide use:

"We see how many people under 30 lost their lives, died. Young people who have a tumour. A brain tumour, a tumour in the liver, a tumour in the stomach, a tumour in the lungs. All because of [...] poison. I have seen people become sick, very sick. [...] With animals it is the same thing [...] There was a day when many birds suddenly fell dead on the field. Not small but big birds [...] But also many armadillos died. Many small animals as well. Fireflies, butterflies, crickets, many. All disappeared. Also, many species of birds, they all died." (Farmer Divino).

Grievances about sharecropping, decreasing income and pesticide contamination turned into social demands during different types of encounters. Some of these encounters were held at the Ecclesial Base Communities (CEB). The CEB's were advanced by the left wing of the Catholic Church, which at the time promoted the Marxist-inspired doctrine of Liberation Theology (Boff and Boff 1986, Betto 1985), from the 1980s onwards. Municipalities in the Zona da Mata hosted several hundred CEB groups. Other encounters took place at the Pastoral da Juventude Rural which has constituencies in many municipalities and organise trainings for rural youth that are also based on Liberation Theology (Goris et al. 2019). Yet another type of encounter was the intercâmbios organised by researchers from the Federal University of Viçosa and peasant organisations (Zanelli et al. 2015). The intercâmbios made (and make) use of critical pedagogies, many inspired by the ideas of Paulo Freire.

During the encounters described above, grievances were linked to particular social relations and articulated into social demands. Grievances over sharecropping were linked to farmers' relations with landlords, which came to be seen as unfair:

"With the work [by the CEB's] things got a little more intense because there were many people who worked as sharecroppers. And from the moment that these people became aware of injustice they started to demand a little more from landlords. How so? A simple example. Imagine I worked as a sharecropper on a property with a landlord who demands we worked so-and-so many days a week on his property. Sometimes he would pay and sometimes he wouldn't [...]. This forced us to join hands and have an organization where more people would fight to defend our rights." (Former Union Leader Araponga).

Grievances over farmers' diminishing income came to be linked to farmers' relation to commodity markets. These markets also came to be seen as unfair as they did not value more sustainable production:

"The market, the coffee business. I think it is a very sad thing in our region. If you sell coffee it is a commodity. When you deliver it, the buyer doesn't even want to know where the coffee came from. What it has. There is only one price. So, it doesn't stimulate people to look for quality, to work for quality. [...] There should be a difference between coffee grown with and without pesticides. The other has. It's the same thing." (farmer at intercâmbio in Espera Feliz)

Grievances over pesticide contamination linked farmers and pesticide salesmen, large coffee middlemen and others who promoted industrial agricultural practices.

Grievances about sharecropping, decreasing income and pesticide contamination were not only linked in relation to agents that were seen to cause them, but also activated other relations for the construction of alternatives. While grievances for land were articulated in social demands for better sharecropping arrangements, in the municipality of Araponga they also activated relations of solidarity amongst farmers to jointly purchase land (see also van den Berg 2018a and Campos 2014). Similarly, grievances about decreasing income were not only articulated in demands for better prices but also activated farmers, researchers and NGOs to construct local markets. Finally, grievances about pesticide contamination were articulated in demands to ban agro-toxins but also activated farmers relation with micro-organisms, trees and weeds to establish alternative farming practices (see also Van den Berg 2018b). When constructing alternative practices other frustrations emerged such as the lack of policy support and obstacles in legislation, which were articulated in demands to support alternatives. As such grievances were articulated in demands that challenge existing relations as well as in demands to support alternatives.

6.4.2 Institutional politics

The social demands that followed from the grievances described above where sometimes articulated in the form of requests towards authorities and other powerholders, following a differential logic as part of institutional politics. A first form of institutional politics we found was the articulation of specific individual requests, including particular schemes to obtain credit, certification, or rural extension. Such requests followed the formation of groups working on particular themes that include land, peasant rights, seeds, rural extension, certification, markets, agroforestry and women. Such groups could and can be found at both the local level in the Zona da Mata, where they are supported by local peasant organisations, the CTA and agroecologists from the Federal University of Viçosa (Silva et al. 2014), as well as at the national level where they are supported by ANA (Bendason 2014). The requests these groups articulated emerged through a thorough process of articulating demands from different regions and organizations. An example is the request for the formal recognition of indigenous seeds:

"There were some groups engaged with the issue of seeds - the preservation and multiplication of indigenous seeds. The people from the Northeast are working with seed banks, because of the specific situation in the semi-arid.[...] In the South, and even here [in the Mideast], we work with seed production. [...] All these experiences were facing institutional barriers. You were not allowed to register these seeds, not able to sell them. So the seeds working group was created [...] which had the role of examining existing legislation and think of proposals to change." (Member of the ANA seeds working group).

Another request that came out of these working groups was for institutional rules that support uptake of agroecological produce in different markets:

"We took different experiences as our starting point. The South for instance is more advanced in terms of food processing plants. The Northeast is stronger in open markets. So we tried to insert different experiences, also from the people in the Amazon and the Mideast. [...] And with important results such as the creation of the Food Acquisition Policy." (Member of the ANA markets working group).

A second form of institutional politics was shaped during meetings and encounters held by the Associação Brasileira de Agroecologia (ABA), an association of professionals working on agroecology (Schmitt 2014). During these meetings and encounters, often organized around working groups on agro-toxins and genetically modified organisms, the peasantry and food sovereignty, the construction of agroecological knowledge, culture and communication, education and agroecology, gender, youth and health, local demands are translated into research and policy requests that support agroecology. An example is the initiative "Núcleos e Rede de Núcleos de Estudos em Agroecologia das universidades públicas brasileiras" (Nucleus and networks of nuclei of studies in agroecology of Brazilian public universities). Each nucleus revolves around a university and its regional network with farmers, peasant organisations and NGOs. During nucleus meetings experiences of peasants and other people that work on-the-ground are discussed, systematized and translated into policy requests. Also, existing policies, including those that support agroecology, are evaluated, studied and reformulated, so that they better address local demands.

A third form of institutional politics is found in the participation of state and national councils (Schmitt 2014). Representatives from ANA, ABA and their working groups take seat in various national and state level councils, including the National Council of Food Security and Sovereignty (CONSEA), the national and state councils of Sustainable Rural Development (CEDRS and CNDRS) and the Brazilian Agricultural Research Institute (EMBRAPA). Requests from working groups, direct engagement with policy makers and participation in government-civil society councils led to articulation of various public policies. For example, the Food Acquisition Policy (PAA) enables public institutes to purchase directly from family farmers, and the National School Feeding Law (PNAE) requires schools to source at least 30% of their food directly from local family farmers. Likewise, the National Policy for Technical Assistance and Rural Extension (PNATER) enables farmer organisations and smaller NGO's to access funding for rural extension projects; the Minimum Price Guarantee for Sociobiodiversity Policy (PGPM-Bio) guarantees a minimum price for products that are gathered from forests and that are supportive of nature conservation and have a high cultural value; the Policy for Living With the Semi-arid (Programa de Convivência com o Semiárido) supports practices that allow people to live and produce under conditions with

little rainfall; and the Amazonian SANEAR Policy supports practices to secure water for extractivist populations in the Amazon. In 2012 many of these policies were brought together in the National Policy on Agroecology and Organic Production (PNAPO).

While these policies booked considerable successes in reducing hunger, mitigating the effects of droughts, and sales to public institutions, they did not meet all social demands related to access to land, access to markets, or pesticide contamination.

“You can’t have agroecology without democratisation of access to land. You first need to regulate Quilombola and Indigenous territories, communal lands for pasture, hunting and gathering. [...] When we formulated the national policy on agroecology and organic production, we put forward the issue of land and regulation of territories. But it is here where we had least result, because then you are messing with the structure. It is a structure that is very difficult to change.” (Member of the executive coordination of ANA)

The quote shows that not all requests were met via institutional politics. Moreover, certain local demands, e.g. access to land, that followed grievance over work conditions, are not easily articulated into individual requests to begin with. This led to continued grievances and renewed frustrations – frustrations which only deepened with the impeachment of Workers Party’s President Dilma Rouseff and the take-over of the presidency by Michel Temer (2016) and subsequently by far-right Jair Bolsonaro (2019) who threaten to dismantle many agroecological policies and which triggered a surge in violence against Indigenous people, landless farmers and environmentalists. Due to these frustrations the agroecology movement increasingly challenged the authority of the federal state via popular politics.

6.4.3 Popular politics

Next to articulating social demands through institutional politics, social demands were also articulated through a logic of equivalence as part of popular politics. A first form of popular politics is found in the construction of local movements that support demands related to peasantry and to agroecology simultaneously. Here, demands from local researchers and local NGO’s are equated to demands from peasants and local peasant organizations. Researchers and NGO’s demanded forms of agriculture based on more ecological methods and technologies. During encounters between researchers, NGO staff and peasants, these demands were equated to peasants’ and peasant organisations’ demands for land and markets - thereby expanding the meaning of agroecology from a technical issue towards a social concern. In the Zona da Mata the equation of these demands led to the formation of a local agroecology movement, membership of the Centre of Alternative Technologies of the Zona da Mata (CTA-ZM), researchers from the Federal University of Viçosa and various local peasant organisations and groups (Cardoso et al. 2001). Similar movements are found in other regions in Brazil, including the Borborema region in Paraíba and the Serra Gaúcha region in Rio Grande do Sul (Schmitt 2016). These movements also played a role in the non-confrontational and institutional politics described in the previous sections.

A second form of popular politics is found in the construction of an agrarian political movement in which demands from various local agroecology movements are equated on the national level with demands from other agrarian social movements that have their own constituencies:

“There was a change in the focus of agroecology. In the beginning the focus was on technologies. Later it was expanded to include the whole agroecosystem [...] Then there was a debate in the agroecology movement at the national level on the need to further amplify these experiences [...] beyond the farm level [...] to include other dimensions of socio-environmental conflict.” (former coordinator of ANA)

These social movements have different, partly overlapping, demands (Brendason 2016). The Confederation of Agricultural Worker (CONTAG)) s for instance demanded an end of violence against rural workers, healthy working conditions without the use of pesticides, and fair wages. They also demanded an agrarian reform and that agricultural extension be delinked from big capital. The National Federation of Workers in Family Farming (FETRAF,) demanded an end of deforestation and land grabbing from marginalised farmers and producers such as rubber tappers by large rural estates, as well as a the recognition of their knowledge and ways of life. The

Landless Workers Movement (MST)) demanded agrarian reform. The Movement of Small Scale Farmers (MPA) pushed for popular democracy and food sovereignty. Women movements such as the Movement of Women Workers (MMTR), the Movement of Peasant Women (MMC) and the Brazilian branch of the World Womens March, demanded the recognition of womens' productive work (for instance in the garden, orchard and at home) as well as freedom from oppression from forms of agri-business that only valorize commodity production.

The different demands of the movements described above were equated at various encounters. The most prominent of these encounters were the national National Agroecology Encounter (ENA) held in 2002, 2006, 2014 and 2018 and preparatory regional encounters that precede or supersede the national encounters and which include the Regional Agroecology Encounters (ERA) and the Agroecology Caravans. As argued by Petersen and Almeida (2004), these encounters focused not on discussing differences between movements, but facilitated the construction of common identities that allowed differences to exist. In the construction of a common, agroecological identity, a common adversary of these diverse social demands is also created, namely agribusiness:

"Agri-business brings death. A package of poison, violation of human rights and social and environmental injustice. Agroecology creates life, a very abundant life for humans but also for animals and plants." (Delegate from woman peasants movement Pernambuco).

Through the equation of the demands of the different agrarian social movements and the rejection of agribusiness, a claim was articulated for the equal distribution of land, control over markets, the recognition of the rights of peasant and rural workers, and for the abolishment of pesticides and GMO's (ENA 2018). The equation of demands also led to the formation of a national, agrarian political movement. This movement alternates between popular and institutional politics, the latter which can, be found in the working groups of ANA, amongst others (see section 4.2).

A third form of popular politics is found in the construction of a popular movement where social demands are equated with demands from other movements that work outside (or beyond) agriculture. These include demands from movements of Indigenous people, Quilombolas, workers' unions, community leaders, the LGBT community, women, Black people, youth, progressive church groups, cultural groups and movements of teachers, homeless people, public health workers and environmental justice:

"So, this is the debate that we are having now. [...] Before, the coordination of ANA had this idea of bringing movements inside ANA - the Landless Workers Movement, the Movement for Collective Health. [...] Now we are realizing that it is not coming to us. We also have to take agroecology to debates about public health, agrarian reform. [...] We need to put more effort in being together in movements, in our territories. [...] We have to change our logic. Instead of waiting for people to come to ANA, which is up there, ANA has to go out there and engage in dialogues down here. (Member of the executive coordination of ANA)

Through the equation of demands with non-agrarian movements, the notion of a people is constructed that includes Black, peasants, women, workers, Indigenous people and the LGBT community. Agroecology features as the ways of doing of the people, which are based on horizontal relations among people and between people and nature:

"Agroecology has always been part of being Black – of Black people. Our way of living, of doing, of relating to others and to nature, was an agroecological way." (Delegate from the Black women movement of Pernambuco)

"We have a solution: not exploiting and destroying our forests, our rivers. And yes: of living with them -as we already do." (Delegate from Urucu Indigenous movement in Itaituba)

The interests of the people are posed in direct opposition not only to agri-business in particular, but to capitalism and Brazil's economic and political elite in general – i.e. those who are held responsible for land grabbing, deforestation, large dams, mining, rural estates and the poisoning

of the environment. This is for instance illustrated in the political letter that was read at the end of the IV ENA in 2018:

“We denounce the violence and authoritarianism of the latifundio, of the monocrops, of mining, of hydroelectric plants and other big capital projects that exploit nature in a predatory way for the production of commodities, primary products or goods commercialised in international market value chains. We also denounce the systematic political, economic and ideological support given by the Brazilian state to these projects that benefit a parasitic minority, that feeds off a development model and a food system that is socially exclusive and that compromises collective health.” (ENA 2018)

Through the equation of demands at local and national agroecology encounters a popular movement was forged that aims for structural change and towards a society that is democratic and that recognises peoples’ ways of living and doing.

6.5 Scaling and articulation

Our analysis focused on the political articulation of the agroecology movement in Brazil. It shows how processes of transformation take shape through the articulation of grievances into local demands and the further articulation of these demands to form supportive policies and to broaden the movement. In the literature on agroecology, debates on transformation have focused around the notion of scaling (Rosset et al. 2019, Anderson 2018, McCune and Sanchez 2018, Martínez-Torres and Rosset 2014, Val et al. 2019). In this section we discuss four dimensions of articulation in the light of these debates.

The first dimension is the articulation of grievances into local demands. In the literature on agroecology, scholars have debated whether priority should be given to the development and geographical spread, or out-scaling, of practices (Nicholls and Altieri 2018) or to politicization of peasants (Rosset et al. 2019, Anderson 2018, McCune and Sanchez 2018, Martínez-Torres and Rosset 2014, Val et al. 2019). We show that politicization and the establishment of practices go hand in hand. In Brazil, peasants’ grievances were linked to and problematized their relations with landlords, commodity markets and modern technologies. This led to the articulation of demands that challenge these relations but also activated peasants’ relation with fellow peasants, citizens, movements agents, trees, and micro-organisms, to construct and demand support for alternatives. Thus, processes of out-scaling or transformation, can address practice and politics in one movement, if they are responsive to grievances and local demands.

The second dimension is the articulation of social demands in an institutional politics. In Brazil this occurred in working groups, and by way of direct alignment with the demands of powerholders and participation in state-civil society decision-making structures, through which local demands were articulated into requests for specific national policies and research. The analysis concurs with proponents of a more political approach to scaling, who argue that institutional upscaling efforts, as the cooperation with powerful agents to create an enabling institutional environment, does not challenge underlying structures of power (Giraldo and Rosset 2017, Giraldo and McCune 2019). However, while institutional politics in Brazil did not pose a fundamental challenge to the authority of the state, it did address some local demands such as those for the support of alternative markets and farming practices, which challenged authority at the local or territorial level (see also van den Berg et al. 2019). As such, upscaling at the national level, can transform structures of power at the local level, if local demands are adequately addressed.

The third dimension is the articulation of social demands into a popular politics. In Brazil popular politics was articulated between peasant organisations, researchers and NGO’s, agrarian and non-agrarian social movements, at different levels. Our analysis shows that popular articulation was paired with the formation of a popular movements with a shared notion of a people and a common enemy, and of claims that challenge the distribution of land, markets and policy resources that systemically favours agribusiness. This is in agreement with political agroecologists who argue that a broader food movement is more capable of realizing structural change to the current agri-food system (Molina 2013, Holt-Gimenez and Shattuck 2011). The analysis that such movements can go beyond issues of food and agriculture, and articulate demands by rural workers,

Indigenous people, Blacks, feminists, the LBTG community, and environmental activists, in a politics that challenges neo-liberalism and the state and in favour of democracy, diversity and difference.

The fourth dimension is the combination of institutional and popular politics. Scholars in political agroecology have argued that upscaling through the engagements with powerful, institutional agents, such as large NGOs, research institutes, government organisations and/or businesses, undo agroecology from its political content - thereby weakening its capacity to realise structural change, making it vulnerable to co-optation and dependent on the goodwill of politicians (Rivera-Ferra 2018, Giraldo and Rosset 2017, Levidow et al. 2014). Our analysis shows that by combining institutional and popular politics reduces the risk of co-optation. In Brazil, the formation of a broad movement, fixed the meaning and political significance of agroecology and increased the movements' negotiating power. Combining institutional and popular politics also allowed the movement to make strategic adjustments under changing political circumstances. Under the presidency of Da Silva, emphasis was placed on institutional politics to access policy resources for the movement. When political circumstances become less favourable under the Temer and Bolsonaro administrations, attention was shifted to popular politics that draw agents to form claims that pose a systemic challenge to authority.

6.6 Conclusion

This article shows how processes of transformation take shape through the political articulation of agroecology in Brazil. It shows that grievances stemming from abusive sharecropping arrangements, decreasing income and pesticide contamination were first articulated in local demands for land, markets and sustainable farming practices. These local demands were further articulated in an institutional politics to acquire policy support and a popular politics that challenges agri-business' control over land, markets and policy resources.

We argue that scaling efforts and debates should pay more attention to the articulation of local demands. By focusing on the creation of an institutional environment that is supportive of particular farming practices, these efforts reduce scaling to a techno-institutional endeavor, overlooking their political viability. The political viability of agroecology lies in its capacity to form local demands that addresses power relations that uphold unsustainability and inequality in people's everyday lives, and to bring these demands to higher levels of politics. This points to the importance of encounters and exchanges where power relations are identified and politicized through the articulation of grievances into local demands. It also points to the importance of forming alliances that are powerful enough to maintain local demands when engaging with powerful institutional agents. By not addressing local demands, scaling efforts run the risk of being co-opted or conforming to rather than transforming the dominant regime.

As illustrated by the case of Brazil, new social movements such as that of agroecology, food sovereignty and environmental and climate justice, are particularly promising for societal transformation. These movements engage with local concerns and struggles and support them by strategically combining institutional and popular politics. While institutional engagements do not pose a direct challenge to the authority of the state, the policy support acquired through institutional politics can be employed to support local struggles and strengthen the material and social base of the movement. Through popular engagements broad movements with peasants, researchers, NGO's and diverse other agrarian and progressive movements can be formed, that maintain local demands and systemically challenge patterns of unsustainability, inequality and injustice upheld by neo-liberalism and the state.

Chapter 7

General discussion and conclusion

7.1 Transformation by the agroecology movement in Brazil

This thesis sought to investigate how new social movements foster transformation by looking at how the agroecology movement in Brazil brings about changes in the domains of practice, territory and the wider institutional environment. The investigation of new social movements was seen as an opportunity to stimulate change that emancipates nature and people. Chapter 1 showed that neo-liberalisation and modernisation have disconnected agriculture from people and nature, with negative impacts on the environment, society and local communities. It demonstrated that while many initiatives have sought to compensate for these negative impacts, most do not restore these connections and continue to prioritise neo-liberal commodity markets and modern knowledge and technologies. Initiatives that do restore these connections and provide alternatives to neo-liberal markets and modern knowledge are often small and oriented towards local change, rather than more widespread transformation. This chapter then showed that social movements seek wider transformation by targeting the domains of practices, territory and the wider institutional environment, but that studies on social movements are often focused on change within a single domain. Studying the way that social movements foster transformation thus entails investigating how they generate change in multiple domains.

In Chapter 1, I defined transformation as change that challenges existing power relations and fosters emancipatory alternatives. In this view, the essence/heart of transformation lies in processes of contestation, construction and the inclusion of people and nature. Change in the domain of practice is often understood in technical and economic terms, with limited attention for the role of people's affects in constructing alternative practices. This is explored in the first research question using the concept of affect: what is the role of affect in establishing agroecological practices in Brazil?. In the domain of territory, the defence of alternatives is often undertaken through particular forms of resistance, but little is known about how these and other forms of resistance are employed together to defend the territory as a whole. This is addressed in the second research question: how does the agroecology movement in Brazil defend and advance territorial alternatives?. Finally, in the wider institutional domain, change is often understood in terms of creating an enabling institutional environment for a particular practice or innovation, with little regard for local demands and how these are articulated at higher levels. This is addressed in the third research question using the concept of articulation: how does the agroecology movement in Brazil articulate changes to the wider institutional environment?. The research questions are addressed in Chapters 2 to 6 using an interpretivist research approach. Rather than approaching transformation in terms of processes that can be steered or managed, this thesis has sought to understand transformation in terms of engagements between human and non-human agents, which can form alignments that construct or support the construction of alternatives, or defend them from hostile agents, relations and political trends.

The remainder of this chapter is organised as follows. Section 7.1 presents the findings and conclusions associated with the three research questions. They describe how the agroecology movement in Brazil employs affect, resistance and articulation to foster change in the respective domains of practice, territories and the wider institutional environment. Section 7.2 discusses the implications of these findings for debates in the literature on sustainability transformation. It argues for a shift from a techno-institutional to a more emancipatory view of transformation. Section 7.3 theoretically reflects on the concepts of affect, resistance, existence, grievances and articulation, in the light of debates on social movements. It argues that these concepts allow for an affirmative rather than a merely oppositional understanding of social movements. Section 7.4 offers a methodological reflection, focusing on how researchers, including myself, collaborate with practice and social movements. Finally, section 7.5 reflects on how movements that seek transformation operate in practice. It does so by comparing the situation in Brazil with that of the Netherlands.

7.1.1. What is the role of affect in establishing agroecological practices in Brazil?

New social movements advance transformation by supporting the construction of practices that are based on principles of cooperation, reciprocity, solidarity and respect for nature. Affect scholars have argued that it is not economic or technical concerns that draw people to construct particular relations or practices, but bodily sensations such as passions, grievances and wishes (Masumi 2015, Deleuze 1988). The case of agroecology in Brazil shows that this principle also applies to the creation and establishment of transformative practices. For example, in the Zona da Mata a shared wish to take better care of the soil brought peasants, peasant organisations, researchers and activists together to experiment with soil conservation practices (Chapter 3). While affects may emerge spontaneously, affect scholars have shown that they are also cultivated in relationships of care (Weeks 2007), for instance between mother and child, or among actively mobilised neo-liberal agents who seek to draw people into commodity relations (Hardt and Negri 2004). The case of Brazil shows that affective work is also carried out by social movements (Chapter 4).

Affects help establish alternative practices in different ways. One is to identify, reflect upon and problematise unsustainable relations and practices. The agroecology movement creates spaces where farmers express their grievances and wishes by sharing memories and experiences. Wishes and grievances are mobilised to engage farmers in critical reflections where they identify and problematise unsustainable relations and practices that are embedded in their everyday lives, such as their relation with landlords (Chapters 3 and 6). Another way in which affects help establish alternative practices is by finding and forging new productive relations between people and nature. The movements facilitate processes in which people are exposed to, share experiences of, experiment with and reflect upon alternative practices. This requires methodological approaches that are sensitive and responsive to people and nature (Chapter 4). In these processes, relations and ideas that control people and nature are challenged and more horizontal relations, which increase the capacity of both people and nature to act, are explored (Chapter 4). A key aspect of this exploration is the search for alignments with agents such as citizens, fellow farmers, weeds, trees or mycorrhizal fungi, that produce not only a commodity, but also friendships, fertile soils, a beautiful landscape and healthy food (Chapter 3).

Finally, affects bring about different practices through the work they do in establishing institutional alignments that are embodied in and supportive of alternative practices. The agroecology movement takes peoples' desires, practices and affective relations with nature as a starting point for forming alignments with institutional agents such as markets, research organisations, policies and other institutional agents, rather than the other way around. When these agents do not align well with local wishes, new institutional arrangements, such as cooperatives, markets and ways of doing research, are actively created by the movement.

7.1.2 How does the agroecology movement in Brazil defend and advance territorial alternatives?

Social movements advance alternative ways of working and living that are embedded in particular territories and defend them from agents, ideas and political trends that threaten them, such as neo-liberalism and modernisation. It has been argued that territories and alternatives are shaped not only by forces that oppose neo-liberalism and modernisation but also by desires for different modes of existence (Sherwood et al. 2017, Escobar 2010, Porto-Gonçalves 2006). The case of the agroecology movement in Brazil shows that territories are shaped by both resistance and existence.

The agroecology movement defends territorial alternatives from neo-liberalism and modernisation by employing various forms of resistance and combining them. Threats from modernisation are dealt with through everyday resistance and overt resistance, which challenge ideas and policies that favour modern agribusiness and depict peasants and agroecological ways of working as inferior (Chapter 6). Threats from neo-liberalism are addressed through resistance of the third kind, which involves circumventing and reducing dependency on global commodity markets by producing one's own inputs and food and by creating markets that are controlled by peasants and citizens (Chapter 5). Neo-liberal threats are also countered by means of rightful

resistance which, using the rhetoric of the powerful, advocates for policies that support the goal of circumvention (Chapter 6).

To advance territorial alternatives, the agroecology movement combines different forms of resistance with one another and with proposals for alternative modes of existence. In the Zona da Mata, overt and everyday resistance combine with existence to build narratives and networks through which alternatives are promoted and developed (Chapter 6). Resistance of the third kind and rightful resistance combine with existence to construct alternative forms of production and distribution (Chapters 5 and 6). Together, these alternative narratives, networks and practices contribute to creating autonomous and self-governed territorial practices related to farming, education, market exchange and innovation. Such practices operate according to values of cooperation, reciprocity, freedom, trust, friendship and respect for nature (Chapter 6).

Resistance to neo-liberalism and modernisation and desires for different ways of life also contribute to the formation of a base that holds the potential for defending or further advancing alternatives when socio-political circumstances change. In the Zona da Mata, resistance and existence nourish the formation of a base of resources, relations, skills, affects, capacities and ideas. This base harbours a material foundation and an ontological imagery that helps to mobilise people against exploitative relations, construct novel territorial practices, and transform parts of the state when new political threats or opportunities arise. For example, when a more authoritarian, neo-liberal government came into power, the agroecology movement drew upon this base to shift from rightful resistance, which focussed on negotiations with the government, to overt and everyday resistance focussing on mobilising people to actively challenge the government.

7.1.3 How does the agroecology movement in Brazil articulate changes to the wider institutional environment?

In efforts to change the wider institutional environment, new social movements have been reported to either negotiate with institutional agents, such as governments, for changes in policies, laws and regulations, or to challenge these agents in a more systemic way. Political science scholars have argued that whether political engagements between different agents result in negotiation or in a challenge to authority depends on whether demands are articulated into an institutional or popular politics. The case of Brazil shows that the agroecology movement is capable of interacting with not just one of these systems, but both.

The agroecology movement articulates the desire for changes to the wider institutional environment in three ways. One way to turn peasants into political subjects is by articulating grievances in the form of local demands. In Brazil grievances were found to originate from disturbances in farmers' everyday lives, such as abuse by landlords, debts acquired from commodity markets and the degradation of resources due to the use of agrochemicals (Chapters 5 and 6). Through encounters, these grievances were critically and reflexively linked to relations of power in everyday life and translated into local demands for better sharecropping arrangements, land ownership, fairer markets and sustainable farming practices. The articulation of grievances as local demands thereby turns peasants into political subjects who are capable of challenging relations of power.

The agroecology movement also articulates local demands concerning institutional politics to change government policies, laws and regulations. This type of articulation was found to occur in working groups and state-civil society councils where local demands are aligned with the demands of powerholders (Chapter 6). In these articulations, the rhetoric of the government was used to obtain policy resources to serve the cause of the agroecology movement. While this did not lead to systemic change, it did address some local demands or helped challenge power structures at the local level (Chapter 5). Also, it was linked to rightful resistance, through which the rhetoric of powerful agents, for instance on sustainability, is used to acquire support for other causes. In the Zona da Mata this supported the construction of local markets and agroecological farming practices.

Finally, the agroecology movement articulated demands into popular politics that did pose a systemic challenge to authority (Chapter 6). Such popular politics equated the demands of

different movements and organisations, including those of workers, Indigenous people, Blacks, feminists, the LGBT community, and environmental activists. This led to the formation of a common enemy and to claims that challenged land distribution, markets, and policies that disproportionately favoured agribusiness, large corporations and the economic and political elite.

7.2 Sustainable transformation: from techno-institutional to emancipatory change

Political economists and post-structuralist scholars have argued that sustainability approaches to transformation, which focus on participation, commodity markets and institutional politics, are not emancipatory, as they do not challenge hierarchies of power or establish more horizontal relations between people and nature (Pelenc et. al 2019, Giraldo and McCune 2019, Temper et al. 2018, Kenis and Lievens 2014). While agreeing with this critique, this thesis argues that participation, markets and institutional collaborations can contribute to transformation if employed strategically and at the service of emancipatory change.

Participation can contribute to emancipatory change when peoples' wishes and grievances take centre stage. Through the use of critical pedagogies and horizontal encounters, grievances and wishes can be employed to identify and challenge unsustainable relations and create alternatives to them. In sustainability approaches to transformation participatory consultations are instrumental in assessing or developing eco-management practices, technologies or innovations (Loorbach 2007, Rotmans & Loorbach 2008; see Schmitt 2016, Mendonça 2015, Wiskerke and van der Ploeg 2004 for some notable exceptions). Critical scholars have argued that these participatory consultations engage people only as consumers or end users of a particular innovation, thereby overlooking relations that exploit or marginalise them (Pelenc et. al 2019, Kenis and Lievens 2014). However, the case of agroecology in Brazil shows that participation can be used to challenge exploitative relations if primacy is given to peoples' grievances and wishes. Grievances and wishes emerge when people want to move out of certain relations and into different ones (Woodward and Lea 2010, Deleuze and Guattari 1983). In Brazil peasants and other people participated in horizontal encounters where they express, share and reflect upon their grievances and wishes. Through the use of critical pedagogies these grievance and wishes were employed to identify and politicise exploitative relations, such as those between peasants and agribusiness. They were also employed to unleash peoples' capacity to explore alternatives and generate change.

Markets can contribute to transformation if they are re-shaped in peasant-like ways whilst challenging neo-liberal control over resources, production and distribution. Sustainability approaches to transformation mainly use market-based or market-correcting instruments such as subsidies, policies, or payments for ecosystem services to promote sustainable practices or innovations (Loorbach 2007, Kemp and Rotmans 2005). Critical transformation scholars show that these instruments tend to reproduce rather than challenge neo-liberal control over resources, production and distribution (Temper et al. 2018, Swyngedouw and Kaika 2014). To challenge neo-liberal control they argue that radical political strategies are needed. Others (Schneider and Niederle 2010, Van der Ploeg 2008) have argued for practical strategies focused on circumventing and reducing dependency on neo-liberal markets. This thesis shows that practical and political strategies should be considered side by side. In Brazil local food markets and the on-farm substitution of external resources with ecological ones, reduced peasant dependency on neo-liberal markets, thereby allowing them to escape from neo-liberal exploitation and shape their farms in accordance to their own needs, values and aspirations. However these strategies did not address other effects by neo-liberal markets. For instance, high land prices continued to form a large obstacle for peasants to access land. Also, as a result of competition between nested and global markets, nested markets were often too small to absorb significant parts of peasants' produce. This points to the need to combine practical and political strategies in ways that support the construction of nested markets while challenging neo-liberal control over land, food and other resources.

Institutional politics can foster transformation if employed strategically and combined with popular politics. By combining institutional and popular politics policy resource can be obtained

to form movements that challenge the dominant institutional order. Sustainability transformation approaches focus on institutional politics by engaging with government, research institutes, large NGOs and/or businesses (Rotmans and Loorbach 2008, Geels 2002). Scholars have argued that these approaches make the alternatives that transformation efforts seek to promote susceptible to co-optation (Giraldo and Rosset 2017, Giraldo and McCune 2019). The resulting efforts conform to, rather than transform, the dominant institutional order. These scholars argue for a more radical, popular politics that challenges the dominant institutional order. While this thesis agrees with these observations, it also shows that institutional and popular politics can be combined. In Brazil institutional engagements by the agroecology movement did not pose a direct challenge to the dominant institutional order. However, the policy resources acquired through institutional politics were employed to strengthen the material base for popular engagements, by means of resources and protected spaces for movements to develop narratives, skills and networks. Through popular engagements broad movements with peasants, researchers, NGO's and diverse other agrarian and progressive movements were formed that protect alternatives from co-optation and systemically challenge patterns of unsustainability, inequality and injustice upheld by the dominant institutional order.

7.3 Social movements: from opposition to affirmation

Literature often portrays social movements as shaped in opposition to hierarchies of power (Sherwood 2018, Edelman 2001). While this thesis acknowledges the importance of opposition, it also shows that opposition can be reworked into a positive force through the multiple relations that constitute a social movement. In this thesis the concepts of affect, resistance, existence, grievances and articulation have been used to explain how both oppositional and non-oppositional forces shape social movements. In so doing, it shows how non-oppositional forces mobilise people, create alternatives and form broad political movements.

The concept of affect (used in Chapter 2 and 3) shows how peoples' capacity for mobilisation is unharnessed through the positive reworking of their frustration over disruptive power and the activation of multiple relations in which they are situated. The emotional turn in the literature on social movements draws on concepts such as anger and fear to explain mobilisation (Van Ness and Summers-Effler 2018, Ransan-Cooper 2018). These emotions are mainly understood to emerge in response to external disruptions by powerful, macro-level agents. While this thesis agrees that such disruptions can trigger people, their translation into action occurs not only in relation to powerful agents. The concept of affect understands people's actions not as dictated by hierarchies of power but by multiple other relations, including relations with memory and non-human agents (Massumi 2015, Braidotti 2006, Deleuze 1988). By applying the concept of affect to social movements, this thesis shows how peoples' frustrations over external disruptions were reworked into positive affects. For example, austerity measures not only led to frustrations vis a vis the government, but also reinforced affects that peasants had for one another and for nature. The affects that emerged from these and other disruptions activated relations between peasants, peasant organisations, researchers, soil, trees. They also activated memories of how people farmed and related to fellow community members in the past. Activating these multiple "other" relations not only unharnessed their capacities to mobilise against disruptive power but also their capacities to detach from power and construct alternatives.

The combined concept of resistance and existence (used in Chapter 4 and 5) shows alternatives are created by non-conflictive forces. Through these forces resources can be obtained, narratives forged and networks established for the construction of alternatives. Several writers on social movements have argued that alternatives are constructed through territorial conflicts between local people and neoliberal policies/reforms (e.g. Veltmeyer 2019, Camacho and Cubas 2011, Fernandes 2009). While this thesis agrees that conflicts can trigger the need for alternatives, it also shows that non-conflictive forms of resistance and existence play a crucial role in constructing them. Through everyday resistance and existence (Kerkvliet 2009, Malseed 2008, Scott 1987), for instance, narratives and networks were formed that carried criticisms of prevailing neo-liberal ideas of profit, competition and technology as well as desires to work more with one another on the basis of friendship and reciprocity. Similarly, resistance of the third kind (Van der Ploeg 2008)

enabled peasants to establish practices and markets that circumvented neo-liberal markets, rather than directly opposing them. Finally, with rightful resistance and existence (O'Brien 2013), peasant organisations employed the governments' neo-liberal rhetoric on sustainability to obtain policies resources that supported their own cause. These resources as well as the networks, narratives and practices established by non-confrontational forms of resistance and existence support the construction of alternative farming, education, market, innovation and land distribution practices while protecting them from neo-liberal agents, markets and ideas.

By combining the notion of grievances and articulation (used in Chapter 6), this thesis shows how popular movements can carry non-oppositional demands to higher levels of politics. In the literature on social movements, broad, popular movements are understood to emerge through antagonisms between the people and a powerful elite (Borras 2019, Nadal 2018). Some (e.g. Mouffe 2018) argue that the image of the people is a cognitive construction held together by symbols and a leader that is representative of this image. While this thesis acknowledges the importance of these antagonisms, it also shows that popular movements are formed not by images of representation, but by forces that go beyond it. The notion of grievances show how antagonisms between people and power lead to the formation of social demands that directly oppose power. Alternatively, antagonisms can be reworked into non-oppositional demands for alternatives. The notion of articulation shows how social demands between different groups can be linked to create an image of 'the people' and form popular movements (Thomassen 2019). By combining these notions, this thesis shows that popular movements not only pursue demands that directly oppose power but also demands for alternatives. It also shows that the image of the people is not a loose representation, but is inclusive of engagements between different groups that reflect not only a struggle against a powerful elite but also an affirmation of diversity.

7.4 Agroecological research collaborations

Agroecologists have called for more intense connections between the science of agroecology and the practice and movement of agroecology (Rivera-Ferre 2018, Molina et al. 2019). To do so, there have been calls in the literature for long-term collaboration between researchers, farmers and movement organisations, which co-create situated knowledge (Botelho et al. 2016, Coolsaet 2016, Levidow 2014). While much attention has been paid to the epistemological dimension of these collaborations, for instance via participatory action research (Mendez et al. 2013, Lieblein et al. 2012) or experiential learning (Francis 2013), I feel that a critical discussion on the affective, ethical and political dimensions is also needed.

A question that emerged during my research is why farmers and movement agents would collaborate in a qualitative research project such as my own. As described in Chapter 1, I combined an interpretive research approach with a case study research strategy and qualitative methods. By focusing on the case of the agroecology movement in the Zona da Mata, I was able to build on the collaborations and ways of working with farmers and movement organisations established by research groups from the Federal University of Viçosa (see also Cardoso et al. 2001). The use of qualitative methods, which included conversations, interviews, group discussions and group reflections on preliminary findings, allowed me to incorporate research participants' values and views and co-create knowledge. While these activities led to interesting discussions and results, participating farmers and movement agents had little expectation that the knowledge thus generated would be of direct use to them, as it contained little of practical value for their situation. Instead, I found that affects were of considerable significance for their engagement with my research. During conversations, interviews and group discussions, affects emerged when participants shared their views and lived experiences, and when they jointly reflected upon topics that they were passionate about, such as working with nature or mobilising for a just cause. However, as researchers, farmers and movement agents in the Zona da Mata themselves mentioned, participants will grow tired of contributing to research if researchers do not also contribute to their practices. I sought to do this by working on different farms, delivering products for a local farmers' cooperative, giving practical support to the organisation of various events in the Zona da Mata and taking part in the communication team of the National Agroecology Encounter. While the contribution of these activities to my research output was limited, they did allow me to pursue non-research related affects that I have for the practice and movement of agroecology, as well as to deepen my relation with farmers and movement agents.

Maintaining affective collaborations and contributing to practice and movement is linked to researchers' ethical commitments (Martin 2018). Various research groups at the Federal University of Viçosa are committed to an ethics of shared responsibility. This entails not only focussing on research outputs but also taking responsibility for that practice and movement. Researchers do this through applied research and on-farm experiments, but also by using their own labour, resources and networks to acquire farm capital, set up local markets and support demonstrations and peasant gatherings. Creative ways are often sought to combine these activities with research. For instance, activities of the FOREFRONT project, to which my PhD programme belongs, often sourced food from farmers, rented facilities from peasant organisations and supported farmers' events by combining them with scientific ones. This commitment to sharing responsibility stands in contrast to the work done by groups at Wageningen University. When I returned to the Netherlands, I engaged with several peasant organisations and initiatives working on agroecology including Toekomstboeren, the Federation of Agroecological Farmers, Voedsel Anders and La Via Campesina while writing my PhD. Although I do not conduct academic research in these organisations, I do collaborate with students and researchers from Wageningen University who are interested in agroecology. In contrast to the Zona da Mata, these researchers focus almost exclusively on acquiring knowledge from farmers and movement organisations for academic papers and reports rather than collaborating with them in other ways. While these academic outputs valorise the knowledge of farmers, their contributions to practice and movement are limited. This is in part due to the norms of Wageningen University, whose allocation of resources is strongly focused on the delivery of scientific products. While such norms also exist in Brazil, the agroecology movement there has been more successful in activating researchers to engage in activities that go beyond science.

Researchers' ethical commitment is linked to their political stance (Martin 2018, Braidotti 2013). In Brazil, where neo-liberal authoritarianism perpetuates a situation where farmers risk hunger and land-grabbing and where movement leaders risk death threats for speaking out, researchers take a strong political stance. In the Netherlands, where the situation is less extreme, researchers are less inclined to do so. Nevertheless, neo-liberalism in the Netherlands has led to inequalities with regard to the distribution of land, control over markets and bias in government support (Toekomstboeren 2019, PBL 2013). Also, neo-liberal agents and policies in the Netherlands impact farmers and other marginalized groups in the Global South. For example, deforestation, land-grabbing and the marginalisation of peasants have been linked to Dutch policies and multinationals (TNI 2013). Wageningen University hosts some of these multinationals, including Syngenta, Unilever and Friesland Campina. Thus, by not taking an explicit political stance, researchers from Wageningen risk perpetuating inequalities in and outside of the Netherlands.

Current trends in academia are moving away from focussing on production of scientific papers towards valuing other products. I believe it is important for agroecologists in the Netherlands to seize this opportunity to collaborate with practice and movements in ways that focus not only on epistemology, but that also cultivate affects, establish ethics of shared responsibility and take a political stance.

7.5 Building movements for transformation in Brazil and in the Netherlands

There are contrasts in how transformation in Brazil and the Netherlands is pursued in practice. While the past decade, has seen the emergence of a new alternative food and agricultural movement in the Netherlands, this movement is largely segregated. Insights derived from the agroecology movement in Brazil show that much can be gained by assembling initiatives in a joint movement that aligns agents in horizontal, territorial and popular-democratic ways.

Aligning professionals and farmers in horizontal ways enhances their capacity to devise alternative practices. By working together on the basis of horizontality problems can be identified, and shared ideas to tackle these problem developed and translated in practical or political action. In the Netherlands, many efforts to establish alternative land, market and farming practices are focussed on the provision of knowledge by professionals from NGOs, municipalities, scientific institutions and consultancies, in the form of research, trainings and workshops (e.g. Louis Bolk

Instituut 2020). By focusing on knowledge, these efforts tend to overlook practical and political issues. Moreover, they tend to treat farmers as subjects that lack knowledge, thereby denying farmers' desires and capacities to devise solutions themselves, and reinforcing the idea that it is ultimately the responsibility of farmers to solve societal problems in agriculture. From my work at Toekomstboeren and the Federation of Agroecological Farmers, I have learned that many farmers are already constructing their own alternative land, market and farming practices, but face challenges in doing so. One of these challenges is land insecurity. Prices are often too high for farmers to purchase land, and Dutch tenure legislation only guarantees farmers the right to stay on the land for one year. Another challenge lies in obtaining resources and in negotiating with authorities to set up alternative markets and cooperatives. Finally, agroecological farming practices often require a great deal of labour from farmers who are already finding it difficult to earn enough income to survive. While agroecological practices provide societal benefits in terms of soil quality, clean water, biodiversity and landscape, professionals working on alternative food and agriculture have done little to address the challenges of constructing them. In Brazil, agroecology professionals and farmers jointly address these and other types of challenges. By working together on a more horizontal basis, farmers can bring in their own ideas and rework those of others in accordance with their own wishes. To translate ideas into practical or political action, both farmers and professionals employ their resources and networks. I believe that efforts in the Netherlands by NGOs, scientific institutions and consultancies to construct alternatives should focus more on forming horizontal alignments with farmers, in ways that engage with farmers' knowledge and help them to address practical and political challenges.

Territorial alignments bring diverse alternatives together in an assemblage that affirms difference. Through these alignments joint narratives are formed that protect alternatives from neo-liberal co-optation and new resources are untapped that strengthen alternatives. In the Netherlands, initiatives working on alternative farming, markets and land operate in relative isolation from one another. This makes them vulnerable to neo-liberal co-optation. For example, alternative food supply chains have been captured by governments and businesses who hope to make them more attractive to large-scale farmers, processors and retailers. In the process, they have replaced practices of decentralised decision making, reciprocity, solidarity and care for nature with schemes based on techno-management, profit, competition and control (e.g. Taskforce Korte Ketens 2020). In Brazil, initiatives working on alternative farming, markets and land are not separated but linked to one another in territorial alignments. By bringing diverse alternatives together in processes of political reflection, learning and experimentation, joint narratives were formed that affirm different values such as reciprocity, solidarity and care for nature. These narratives protect alternative practices from neo-liberal co-optation. Bringing diverse alternatives together also allowed for resources and capacities to be bundled and used to strengthen alternatives as well as to access external resources from banks, markets and policies, without submitting to neo-liberalism. I believe that alternatives in the Netherlands should focus more on establishing relationships with one another to create joint narratives and bundle capacities in ways that affirm difference and protect alternatives from neo-liberal ideas and practices.

Popular-democratic alignments pursue politics that address local demands and challenge the dominant institutional order. Through these alignments movements advocate for supporting policies and challenge systemic patterns of marginalization and exclusion. In the Netherlands, institutional change is mainly sought by specialist coalitions focussing on bureaucratic reform and market correction instruments. Such coalitions have for instance urged policies and regulations that reduce nitrogen emission, impose taxes on unsustainable production (TAPP Coalitie 2020) and allow food forests on agricultural land (Green Deal Voedselbossen 2020). While these coalitions have had some success in changing policies and regulations, they have done little to strengthen alternatives on-the-ground. For example, food forest regulations do not allow forests to be combined with animals, thereby excluding farmers who do so. Besides, these coalitions do not address systemic patterns of unsustainability. For example, nitrogen regulations and taxes on unsustainable production reinforce technocratic ideals and punish farmers who are trapped in neo-liberal markets, which have been (and continue to be) promoted by the government. In Brazil, efforts to change policies are embedded in movements that pursue politics from the bottom up. For example, the National Agroecology Articulation consists of various movements linked to people in diverse territories. Together they have been successful in changing land, market and innovation policies in ways that strengthen local alternatives. Next to changing policies, the agroecology movement in Brazil has aligned with diverse other agrarian and non-agrarian movements including the Landless Workers Movement, movements of Indigenous and Black

people, and environmental, workers', feminist and LGBT movements, in a broad popular movement to challenge systemic patterns which govern land distribution, control markets and exclude people on the basis of colour, gender, income or profession. I believe that food movements in the Netherlands should focus more on working with local initiatives develop a politics from there, rather than relying on specialised coalitions. I also believe that collaboration between these movements and other radical movements working with the environment, migrants, refugees and climate, should be sought to address systemic issues of land, market and social exclusion.

The significance of building movements in the Netherlands that align agents in horizontal, territorial and popular ways goes beyond food and the Dutch context. Today in the Netherlands, right-wing populist leaders are mobilising peoples' frustrations with policies that discriminate against immigrants and people of colour. This is reflected by recent protests from farmers who, although they feel trapped by neo-liberal markets and unheard by the government, are increasingly drawn to leaders that blame refugees, migrants and Black people for their problems. At the same time, Dutch neo-liberal policies and multinationals are leading to the exploitation, exclusion and marginalisation of peasants, indigenous and other marginalised groups in the Global South. In order to tackle these problems, movements such as La Via Campesina and the Environmental Justice Movement are increasingly mobilising at the international level. I believe that, to counter neo-liberalism and right-wing populism in the Netherlands and abroad, we must assemble farmers, citizens, researchers, initiatives and organisations working on the inclusion of nature and marginalized groups, into a broad movement for emancipatory transformation that fosters democracy, difference and diversity.

Summary

For several decades, wider societal transformation has been sought by new social movements. These movements, which include *buen vivir*, rights to nature, agroecology, commons, food sovereignty and environmental justice, are challenging neo-liberalism and advancing alternatives that reconnect society to nature and local communities. Social movements have sought transformative change by engaging in the domains of practice, territory and the wider institutional environment. For example, the agroecology movement in Brazil has supported the development of practices that are more inclusive of nature and citizens, formed alliances to support territories that advance and defend peasant and agroecological alternatives and organised itself in state and national level networks to advocate support for certain policies and to systemically challenge agri-business' control over land, markets and policy resources. While many studies have been conducted on the engagement of social movements within a particular domain, less is known about how social movements engage in multiple domains for widespread transformation. This thesis contributes to a new understanding of social movements as transformative, by focusing on the engagement of the agroecology movement in Brazil in the domains of practice, territory and the wider institutional environment.

In academic debates on sustainability transformation, social movements and agroecology, transformation is often depicted in technical, reactionary or oppositional terms. In the domain of practice the literature prioritises techno-scientific knowledge and economic values, paying little attention to the role of affect in motivating people to establish alternative practices. In the domain of territory, the literature tends to depict resistance in singular and reactionary terms, thereby overlooking how multiple forms of resistance can be combined in a more affirmative strategy to advance territorial alternatives. In the wider institutional domain, academic debates have tended to characterised politics as either conforming to or opposing the dominant regime, thereby overlooking how different conforming and opposing forms of politics can be articulated simultaneously in ways that transform the wider institutional environment. This thesis seeks to gain a new understanding of transformation by addressing the following research questions (1) what is the role of affect in establishing agroecological practices in Brazil?; (2) how does the agroecology movement in Brazil defend and advance territorial alternatives?; and (3) how does the agroecology movement in Brazil articulate changes to the wider institutional environment?

To address the research questions, this thesis employs a critical post-humanist perspective to forge a theoretical framework that combines concepts from post-humanism, agrarian political economy and post-structuralism. As such, reality is conceived as flat and relational, asserting that an agent or relation is never defined hierarchies of power, but is instead defined by the multiple relations in which it is situated. This serves the purpose of this thesis as it allows for a critical view of power without resorting to deterministic explanations. This thesis uses the concepts of affect, resistance and articulation to address the research questions. The latter two concepts are combined with the notion of existence and grievances, to bring non-oppositional forces to the fore. Taken together these concepts enable a comprehensive understanding of transformation by the agroecology movement in Brazil, paying particular attention to the how affects shape the construction of agroecological practices, how territories resist neo-liberal modernity and advance different modes of existence, and how local demands are articulated into diverse forms of politics to change the wider institutional environment.

The thesis adopts an interpretivist research approach to study social movement transformation. An interpretivist approach aligns well with the theoretical framework as it assigns centre stage to the interaction between agents and ideas, thereby seeing agents as shaped by the multiple relations in which they are situated rather than as determined by intrinsic properties. An interpretivist approach also implies that the natural and the social, and, meaning and matter, are not separate but co-produced, thereby capturing the role of non-human agents and non-cognitive affects in processes of change. Moreover, an interpretivist approach allows for a flat relational conception of the reality whilst capturing the role of power. The thesis uses a paradigmatic case study approach, focusing on the agroecology movement in Brazil. It also uses qualitative data gathering techniques in the form of interviews and participant observation, supplemented with documents. To concepts of this thesis were used to analyse the data, which resulted in five empirical chapters (Chapters 2 to 6).

Chapters 2 and 3 describe the role of affect in establishing agroecological practices in Brazil. They address the first research question and focus on transformation in the domain of practice. Chapter 2 uses the concept of assemblages to show how shared affects for the land and rural life brought farmers, farmer organisations, researchers and an NGO together to engage in a process of experimentation and establish new farming practices. It concludes that affects played a key role in mediating the exploration and formation of practical alignments between agents such as peasants, citizens, weeds, trees and mycorrhizal fungi. These practices not only produce commodities but also friendships, a fertile soil, a beautiful landscape and healthy food. Chapter 3 uses the concept of affect to illustrate how the affective work done by the agroecology movement pulls peasants out of unsustainable relations and practices, and draws them to establish alternative ones. It also shows that affective work can support the formation of alignments with institutional agents such as markets, research organisations and policies, that support these practices. It concludes with the observation that social movements can cultivate and mobilise affects to support the construction of alternative practices from the bottom by engaging with peoples' memories, lived experiences and relations with nature.

Chapters 4 and 5 describe how the agroecology movement in Brazil defends and advances territorial alternatives. They address the second research question and focus on transformation in the domain of territory. Chapter 4 uses the concept of repeasantisation, also known as resistance of the third kind, to show how peasant alternatives are defended from neo-liberal commodity markets through alterations in their system of production and distribution. It concludes that this form of resistance allows for the entry of new peasants and the establishment of ways of farming that are based on peasants' own values. Chapter 5 uses the concept of combined resistance and existence to describe the formation of territorial alignments and alternatives involving autonomous and self-governed modes of farming, education, market exchange and innovation. It also shows that territorial alignments challenge values of competition, profit, individualism and control over nature and foster values of cooperation, reciprocity, freedom, trust, friendship and respect for nature. This chapter concludes that social movements employ and combine resistance and existence strategically to form narratives, networks and practices that defend territories from neo-liberalism and modernisation and that advance the construction of alternatives.

Chapter 6 describes how the agroecology movement in Brazil articulates changes to the wider institutional environment. It address the third research question and focus on transformation in the wider institutional domain. It uses the concept of articulation and grievances to show how the agroecology movement articulates grievances and local demands for better sharecropping conditions, local markets and sustainable farming into institutional and popular politics. It also shows that while institutional politics did result in supporting policies and legislation, it did not posit a systemic challenge to agri-business' control over land, markets and policy resources. Popular politics led the formation of broad, popular movements that did posit a systemic challenge, but with insecure outcomes. This chapter concludes that institutional and popular politics can be strategically combined in ways that strengthen social movements and address local demands.

The case of the agroecology movement in the Zona da Mata confirms the view that techno-institutional understandings of transformation, which emphasise participation, commodity markets and institutional collaborations are not transformative, as they do not challenge hierarchies of power or establish more horizontal relations between people and nature. Nevertheless, it shows that participation, markets and institutional collaborations can contribute to transformation if employed strategically and at the service of emancipatory change. Participation is transformative if it engages with the wishes and grievances that people have. This makes it possible to identify and challenge unsustainable relations and create alternatives to them. Markets can contribute to transformation if they are re-shaped in peasant-like ways whilst challenging neo-liberal control over resources, production and distribution. Finally, institutional collaborations can contribute to transformative change if employed strategically and combined with popular politics to strengthen the movement.

The concepts applied in the various empirical chapters show how social movements are shaped not only in opposition to hierarchies of power, but also rework opposition into a positive force through the multiple relations that constitute a social movement. The concepts of affect, resistance, existence, grievances and articulation explain how non-oppositional forces mobilise people, create alternatives and form broad political movements. The concept of affect (used in

Chapter 2 and 3) shows how peoples' capacity for mobilisation is unharnessed through the positive reworking of their frustration over disruptive power and the activation of multiple relations in which they are situated. The combined concept of resistance and existence (used in Chapter 4 and 5) shows alternatives are created by non-conflictive forces. Through these forces resources can be obtained, narratives forged and networks established for the construction of alternatives. By combining the notion of grievances and articulation (used in Chapter 6), this thesis shows how popular movements can carry non-oppositional demands to higher levels of politics.

This thesis ends by reflection on the practice of social movement transformation by comparing Brazil with the Netherlands. While the past decade, has seen the emergence of a new alternative food and agricultural movement in the Netherlands, this movement is largely segregated. Insights derived from the agroecology movement in Brazil show that much can be gained by assembling initiatives in a joint movement that aligns agents in horizontal, territorial and popular ways. Aligning professionals and farmers in horizontal ways enhances their capacity to devise alternative practices. By working together on the basis of horizontality problems can be identified, and shared ideas to tackle these problem developed and translated in practical or political action. Territorial alignments bring diverse alternatives together in an assemblage that affirms difference. Through these alignments joint narratives are formed that protect alternatives from neo-liberal co-optation and new resources are untapped that strengthen alternatives. Popular-democratic alignments pursue politics that address local demands and challenge the dominant institutional order. Through these alignments movements advocate for supporting policies and challenge systemic patterns of marginalization and exclusion.

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Completed Training and Supervision Plan



Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Writing PhD research proposal	FNP and SDC	2016	6
<i>'Agroecology and re-peasantisation in Brazil and in the Netherlands'</i>	VI Congresso Latino-Americano de Agroecologia, Brasilia.	2017	1
<i>'Participatory action research: learning from the Zona da Mata, Minas Gerais'</i>	VI Congresso Latino-Americano de Agroecologia, Brasilia.	2017	1
Reviewer at the VI Congresso Latino-Americano de Agroecologia, Brasilia.	Sociedad Cientifica Latino-Americana de agroecologia	2017	1
B) General research related competences			
WASS PhD Introduction Course	WASS	2016	1
Critical Perspectives on Social Theory	WASS	2016	4
Introduction to Interpretive Research Design	WASS	2016	3
Qualitative Research Methods	University of Amsterdam	2016	1.2
Discourse analysis and the environment	Wageningen University	2017	0.6
The politics of nature in the Anthropocene: Anthropology as Natural History	Oslo Summer School in Comparative Social Science Studies 2017	2017	10
C) Career related competences/personal development			
Supervision of bachelor student	HAS University of applied sciences Den Bosch	2017	2
Effective behaviour in your professional surroundings	WGS	2018	1.3
Writing Grant Proposals	WGS	2019	2
Total			34.1

*One credit according to ECTS is on average equivalent to 28 hours of study load

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