

Social-Ecologies of Crisis:
Assessing the Back-to-Land Movement in Greece

by

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ABSTRACT

Adaptation and transformation have emerged as a key themes for human-environment research, especially in the context of rapid social-ecological changes. The 2008 global financial crisis constitutes a major driver of change with social-ecological ramifications that have yet to be fully explored. Using Greece, the poster child of the euro-crisis as a case-study, this dissertation examines how adaptive capacity is mobilized and even enhanced in times of crisis, paying particular attention to the role played by natural capital. To do so, I focus on the back-to-land trend whereby urbanites seek to engage in food production post-crisis (2008-onwards). In-depth qualitative analysis of back-to-landers' motivations, experiences, and challenges is integrated with quantitative data about household demographics, incomes and assets, and land management characteristics. The dissertation is organized in three main result papers (chapters). The first seeks to understand why people turn to the land in times of crisis, and the role played by agency. The second analyzes the various assets that people mobilize in order to go back to the land, paying particular attention to the different mobilities necessary for their livelihood transformation. The third examines environmental safety nets in terms of material and non-material benefits that ecosystems provide to people. This research contributes to a wider social-ecological scholarship that seeks to understand how people adapt and transform when confronted with crises, focusing on how land and associated ecosystem services contribute to the resilience of these households, and the role played by agency in this process.

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Photo 1. After fieldwork

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PREFACE

The European economic crisis hit hard in Greece, the country of my birth. At the time, I had been developing my dissertation on the topic of double exposures – climate change and globalization – in Central America (Honduras, El Salvador and Nicaragua), a region in which I had worked for many years during my master’s degree and subsequently while doing research for the International Development Research Centre (IDRC). Yet newspapers and conversations with family and friends all pointed to one thing: the crisis was a pivotal moment in the lives of many Greeks – and Europeans – a time in which they had to remake themselves and quite possibly their society.

The crisis was a major world event that affected me on a personal level – many of my friends and family members still live in Greece. The crisis also inspired new fascinating research questions: How are economic shocks affecting social and ecological dynamics? What is the link between debt and the environment? As the crisis deepened, and austerity measures were further implemented in Greece in 2012, I realized that I had the opportunity – due to my knowledge of Greece and its language as well as my expertise in social-ecological dynamics – to understand how crises fostered unexpected social-ecological changes and their ramifications. Greece had become, unwillingly, a unique social (ecological) laboratory that could yield important answers for our understanding of dynamics of social-ecological change.

I had to make a tough decision, to continue working on my project in Central America, or upend everything. Given the unique opportunity to study such an important world event as it was happening, I decided in late 2012 to shift my dissertation topic to the study of the back-to-land trend in Greece (i.e., examining in particular why and how urbanites that had never farmed before were now turning to the land). In the process, I met amazing people deeply committed to changing themselves, their lives, and maybe society along the way.

As I documented how new food producers were transforming their lives, I knew my analysis could only tell part of their story. So, I began to work on a documentary film with friends and colleagues

to simultaneously explore my dissertation questions through another lens (quite literally). We are now in the production stages of a transmedia documentary about emerging sustainability initiatives, including the back-to-land trend (the topic of my dissertation). To ensure public awareness and dialogue about the back to the land trend, and other alternative initiatives that infrequently receive media coverage, we co-founded a media cooperative in Greece (<http://cinergies.coop/>). This cooperative, called Cinergies, recently started a European project (Ideals in Action) to work with four different grassroots organizations in Southern Europe (France, Portugal, Italy, and Greece). As a co-founder, I have nurtured this social cooperative from its infancy, while at the same time balancing my time with dissertation work. Our commitment to alternative forms of communication and linking the arts and sciences allow us to combine different forms of knowledge to co-create conversations with scientists, artists, farmers and the wider public. I am grateful for all I have learned and all I still have to learn.

In some ways, this dissertation only tells half a story. It provides a detailed quantitative and qualitative analysis of how and why people are transforming their lives and engaging with new ideas of how we access and reconnect with nature. Numbers are important. They tell us a lot. And I hope the statistical patterns documented in this dissertation, along with my contextualization through qualitative research, can provide important insight for academics, practitioners, community organizers and farmers. But behind every bar chart and regression table are hands digging in the dirt to sow seeds, people sitting long into the night at cooperative meetings to plan for the next day and the next year. There are people singing and dancing to celebrate a life worth living. Their stories are embedded in this dissertation.

CHAPTER I. Introduction

1. Problem statement

“Transformations” has emerged as a rallying concept in research and policy circles. Programs like Future Earth and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) realize that incremental changes will not be enough to reach some semblance of sustainability. We may need to fundamentally transform our relationships with the Earth System if we are to make real progress on complex and intertwined social-ecological crises such as climate change, biodiversity loss, rising inequalities and increasing poverty. At least 60% of the ecosystem services humans rely upon are already threatened in a context where many people do not make a decent living (MEA 2005).

Yet “the future does not need to be bleak”; many solutions may already be embedded in pre-existing small-scale transformations that provide place-specific responses to many challenges that people face (Bennett et al. 2016: 41). The very disparate nature of these initiatives, however, characterized by diverse ideas, practices, and strategies, requires deep investigation to understand how place-specific sustainable social-ecological transformations emerge (Wise et al. 2014; Patterson et al. 2015; Pereira et al. 2015; Fazey et al. 2016). Sustainable social-ecological transformations are broadly defined here as significant changes that alter human-environment interactions in a way that sustains the earth’s biophysical systems while meeting human needs (Kates et al. 2001; Walker et al. 2004). Such transformations range from changes in perceptions, norms, and values to changes in behavior and practices (O’Brien 2012b; O’Brien and Sygna 2013), which in turn may foster broader sustainability-oriented social-ecological outcomes (Moore et al. 2014). Major crises may provide windows of opportunities for such social-ecological transformations (Olsson et al. 2014; Frantzeskaki et al. 2016; Olsson et al. 2017) because they “change dominant understandings, values, institutions, and social relationships through which society is organized and defined” (Loorbach et al. 2016:19). In short, these crises are “game changers” that alter the ways people think and act.

The global financial collapse of the late 2000s was such a game changer, and Greece was one of most affected countries (Loorbach et al. 2016). The Greek crisis can provide valuable insights to understand how people adapt and transform during times of crisis, and potential transformational pathways that emerge. Debates over the Greek economic crisis – and more broadly the Eurocrisis – are centered on issues of economic and financial sustainability, and to some extent on political and social impacts: poverty, unrest, unemployment. Few studies have focused on the social-ecological consequences of the economic crisis, and how these affect ecosystem services and different dimensions of human wellbeing. This oversight is troubling given that economic crises are seemingly becoming more frequent and less predictable, threatening sustainability efforts (Stiglitz 2000; Atkinson and Morelli 2011). Greece's economic crisis has resulted in unexpected social-ecological changes whose magnitude and implications remain to a large extent understudied. One such change is the Greek back-to-land trend, which refers to efforts by urbanites to reconnect to land-based activities during the crisis (2008-onwards).

This dissertation aims to expand our understanding of adaptations and transformations in times of crisis, and their links to capacity: how is it mobilized and/or enhanced in time of crisis? And what role does the environment play in this process. The Greek back-to-land trend is used to explore crisis-related transformational dynamics. The main research question is framed in terms of three sub-questions, each addressed in three chapters, as follows:

The overall research questions address: How are people transforming their livelihoods in times of crisis, and what is the role played by the environment in this process?

1. Why are people seeking to reconnect to the land, and what is the role played by agency?
2. What assets do people mobilize for their turn back to the land?
3. What are the different ways environmental safety nets translate into human wellbeing in times of crisis?

I approach these questions by pulling together three complementary literatures that deal with similar concepts through different lenses: adaptation and transformation, ecosystems services, and research on back-to-land movements and counter-urbanization. A note to the reader: the theoretical background is in large parts repeated in the chapters which have been written as self-contained units.

2. Theoretical background

2.1 Adaptation and transformation

Adaptation and transformation, and the attributes that enable it (i.e., adaptive capacity), have emerged as core concepts in fields studying social-ecological change and response including resilience, vulnerability and sustainability (Nelson et al. 2007; Turner 2010; Engle 2011; Park et al. 2012; Eakin 2015; Patterson et al. 2015). This turn to 'capacity' as coined by Eakin (2015) is linked in part to the emergence of intractable and often interconnected global issues, such as climate change or economic globalization, that increase the vulnerability of people in different places (O'Brien and Leichenko 2000; Eakin and Luers 2006; Leichenko et al. 2010). Adaptation research thus seeks to understand the ways that people and systems respond to, plan for, and seek to overcome social-ecological risk (Smit and Wandel 2006) to sustain human wellbeing and/or a well-functioning resilient system; two normative goals that can be at odds (Eakin et al. 2009; Eriksen et al. 2011).

Adaptation can be approached from a system or actor-level (Nelson et al. 2007). The former is often related to resilience broadly defined as the ability of a system to recover from change coupled with the ability to learn and re-organize (Folke 2006). The latter is concerned with human agency in the context of change, and defines adaptation as "decision-making process and set of actions undertaken to maintain the capacity to deal with future changes and perturbations without undergoing significant changes in function, structural identity, or feedbacks of that system while maintaining the option to develop" (Nelson et al. 2007: 397). In short, adaptation is what people (or

organizations) do to manage resilience, and is related to each actor's adaptive capacity and agency.

Sustainable social-ecological transformations are broadly defined as significant changes in human-environment interactions that help sustain the earth's biophysical systems while meeting human needs (Kates et al. 2001; Walker et al. 2004). Such transformations range from changes in perceptions, norms, and values to changes in behavior and practices (O'Brien 2012a; O'Brien and Sygna 2013) which in turn may foster sustainability-oriented social-ecological outcomes (Moore et al. 2014). System-level transformation implies a process of structural change (i.e., changes in fundamental patterns and interactions in the social-ecological system), which require social, symbolic, physical and material changes including alterations of sense-making, worldviews, power relations, social networks, ecosystems, physical infrastructure and technology (Feola 2015). O'Brien and Sygna (2013) refer to transformations in three interrelated spheres from shifts in the practical sphere (i.e., behaviors and technical responses) to shifts in the political sphere (i.e., institutions and laws) and finally the personal sphere (i.e., individual and collective beliefs, values and worldviews). In their view, the personal sphere – worldviews and values people hold – ultimately shapes how structures and systems (i.e., the political sphere) are viewed, and in turn influence possible solutions (i.e., the practical and political spheres).

The sustainable livelihood approach is particularly relevant to understand adaptive/transformational capacity as it provides a framework to analyze key components that make up a livelihood and the contextual factors that affect those (Reed et al. 2013). The livelihood approach also provides a way to assess human wellbeing which is framed in terms of the capabilities, assets (endowments and entitlements), and activities that sustain and give meaning to a person's life (Chambers and Conway 1992; Scoones 1998; Bebbington 1999; Carney et al. 1999; Sen 1999; Robeyns 2005; Weeratunge et al. 2014). A livelihood is considered sustainable when it can cope with and recover from stresses and shocks while maintaining and enhancing its capabilities and assets in the present

and the future, while not undermining the natural resource base (Carney et al. 1999); in short a livelihood is considered sustainable when it is adaptable and resilient.

In the livelihood approach, assets are often characterized in terms of different capitals: natural, social, human, physical and financial. Together these capitals constitute a person's livelihood portfolio, and thus his or her adaptive capacity. Little is known as to how different assets interact to enhance or mobilize capacity (Berman et al. 2012; Eakin et al. 2014). While assets that people hold can be measured, it is often hard to predict whether adaptive capacity will translate into adaption or transformation (Engle 2011). Agency is needed for assets to be mobilized and capacity put into action (Brown and Westaway 2011). Ecosystem may also play an important role in capacity formation due to their triple function: they provide a broader context within which life is possible, produce goods and service but also affect the ways that people convert resources into capabilities (Polishchuk and Rauschmayer 2012; Reed et al. 2013). This latter point has been further explored in the cultural services literature.

2.2 The social turn in ecosystem services

Understanding natural capital is not sufficient, however, to understand adaptive capacity. Improving natural capital, as measured by ecosystem functions, does not necessarily directly translate to improved human wellbeing (Turner 2010; Fish 2011). Ecosystem services defined as the benefits that people derive from nature (Daily et al. 2000) emerged as a concept that unpacks natural capital, highlighting the dynamism and complexity of interactions between different components of ecosystems and the multiple ways that those might benefit humans (Rodríguez et al. 2006; Bennett et al. 2009). The widely used Millennium Ecosystem Assessment (MEA 2005) separated ecosystem services into four categories (supporting, regulating, provisioning and cultural services) based on the nature of the benefit provided to people, focusing primarily on understanding supporting/regulating and provisioning services, leaving out cultural services that are harder to measure (Chan et al. 2011; Chan et al. 2012a; Chan et al. 2012b; Satterfield et al. 2013). Yet, further understanding non-material benefits that people derive from nature can expand our

understanding of the ways that ecosystem services actually contribute to human wellbeing (Daniel et al. 2012; Díaz et al. 2015; Díaz et al. 2018).

Indeed, cultural services help us re-conceptualize ecosystem services as being co-produced by both ecological and social processes (Fish 2011; Chan et al. 2012a; Chan et al. 2012b; Reyers et al. 2013). This is especially the case in human dominated systems, such as agricultural landscapes, that rely on ecosystem processes and human knowledge, technology, institutions to co-produce benefits. Second, cultural services touch upon non-material dimensions of human wellbeing that are often not included in ecosystem service assessment but matter greatly to people (cultural heritage, sense of place, spirituality, values regarding the good life) (Klain and Chan 2012; Russell et al. 2013; Satterfield et al. 2013). Thus, cultural ecosystem services highlight the presence of diverse value systems – not solely associated with economic valuation – that frame how people perceive, manage and relate to ecosystems (Chan et al. 2012b; Luck et al. 2012; Jax et al. 2013; Raymond et al. 2013). While operating from different starting points, both ecosystem services and adaptation research have to grapple with values and how those frame people's agency. Both processes – adaptation and ecosystem services – are often deeply contextual, place and scale-specific, and rely on values (Adger et al. 2009; O'Brien 2011; Ernstson and Sörlin 2012; Eakin et al. 2014). Calvet-Mir et al. (2012) use the example of home gardens in Spain to examine humanized landscapes, highlighting their importance for conserving in situ biodiversity, food production, and maintaining a relationship with 'nature'. Third, ecosystem services research is gradually integrating insights from social sciences that emphasize the importance of understanding unequal access to resources and power asymmetries as key processes affecting both the provision of ecosystem services and their realization into benefits (Daw et al. 2011; Robards et al. 2011). Hicks and Cinner (2014) combine Sen's entitlement approach to the study of ecosystem service bundles to show that ecosystem benefits are mediated by different access mechanisms across coral reef fisheries in the Western Indian Ocean.

The social turn to ecosystem services research calls for an exploration of how ecosystem services actually relate to and affect different dimensions of human wellbeing, and how in turn human actions enhance or decrease ecosystem services (Carpenter et al. 2009; Ballet et al. 2011; Robards et al. 2011; Daniel et al. 2012; Luck et al. 2012; Polishchuk and Rauschmayer 2012; Pelenc et al. 2013; Reyers et al. 2013).

2.3 Crisis and pathways of change

Adaptation research is increasingly seeking to embed adaptation decisions within wider pathways of social-ecological changes and responses (Reed et al. 2013; Câmpeanu and Fazey 2014; Wise et al. 2014; Rauschmayer et al. 2015). Conceptualizing actor's decision-making as part of adaptive pathways relates to understanding wider cultural, political, economic, and environmental contexts (Wise et al. 2014), while also examining response to multiple exposures (Leichenko et al. 2010). Whether a given adaptation strategy is adaptive and maladaptive depends on a shifting context whereby agents adjust their action in response to wider structural constraints present at the time (Fig. 1.1). Simultaneously, agent's adaptation decisions shape and transform these wider structural constraints, maintaining or transforming socio-ecological pathways (Giddens 1984; Carr 2008; Wise et al. 2014). Given this recognition, a resurgence of studies seek to understand agency and structure (Giddens 1984) within the context of environmental change, adaptation, and transformation (McLaughlin and Dietz 2008; Brown and Westaway 2011; Westley et al. 2013; Olsson et al. 2014; Barnett and Eakin 2015).

Agency characterizes individuals as "autonomous, purposive, creative actors, capable of a degree of choice" (Lister 2004: 125) and is directly related to adaptive capacity. Indeed even system-based approaches, such as resilience, conceptualize adaptive capacity as an attribute of human systems that are defined by the ability to learn, anticipate, and take reflexive action (Walker and Salt 2012). Capacity is thus not only related to what assets people have but is linked to internal cognitive attributes, such as self-efficacy (i.e., recognition of the need to adapt and belief that adaptation is

possible and desirable), relational attributes, such as the ability to influence and mobilize others (i.e., collective action), and existing barriers and enablers to implementation (structure) (Brown and Westaway 2011; Eakin 2014). Unpacking agency in the context of adaptation and transformation requires relating these choices to structural contexts to illuminate the tradeoffs or synergies that emerge from people's choices (Coulthard 2012).

In her research linking poverty and agency, Lister (2004) distinguishes between four interrelated dimensions of agency: everyday agency (i.e., how to make ends meet), strategic agency (i.e. developing longer term strategies), personal agency (i.e., linked to personal trajectories and choices, to self-efficacy), and political agency (i.e., connected to the ability to affect wider change). These four dimensions can be used to structure decisions along two main axes defining responses: personal vs. collective (political agency) and everyday vs. strategic, which relate to coping, adaptation, and transformational responses within broader pathways of change (Brown and Westaway 2011; Coulthard 2012; Campeanu and Fazey 2014).

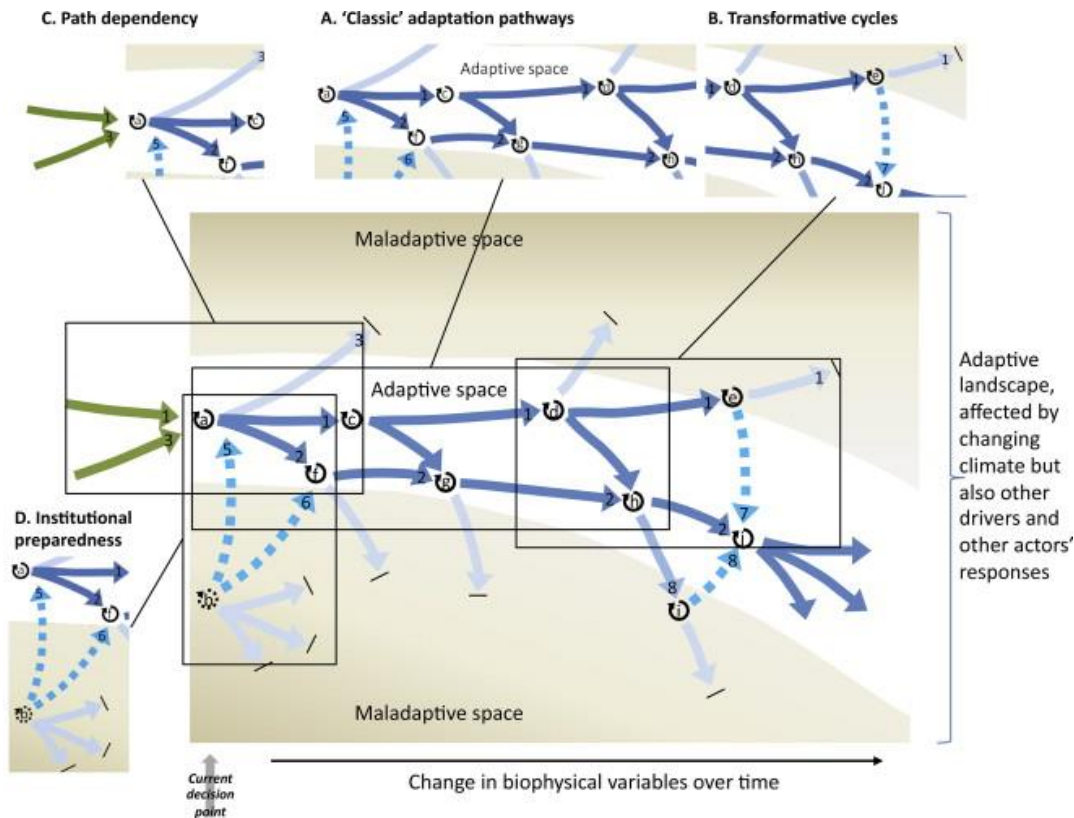


Figure 1.1 Adaptive pathways. Decision-making actor's adaptive pathway through a shifting adaptive landscape (i.e. boundaries between adaptive and maladaptive responses change due to biophysical and socio-institutional changes). Dark blue lines represent adaptive decisions while light blue represent maladaptations (Wise et al. 2014: 333).

The interest in adaptation pathways – and the interplay between agency and structure – is driven by the importance of understanding persistence and transformation in socio-ecological systems (Reed et al. 2013; Olsson et al. 2014). Indeed, if adaptation or transformation is to be facilitated, we need to understand how individual capacity is formed and how in turn it translates into collective action and/or changes at wider scales (Berman et al. 2014; Eakin et al. 2014; Eakin 2015). In the context of climate change, for instance, this relates to debate over the necessity to facilitate “transitions of governance arrangements and transformation of societal processes, norms and values [structural conditions]” in order to achieve sustainability (Wise et al. 2014: 329). Pelling et al. (2014) differentiate between resistances (i.e., reinforcements of existing development pathways), incremental adjustments (i.e., marginal and incremental changes that increase adaptability without however radically changing the underlying structure) and transformational pathways (i.e.,

fundamental system change, for instance changes in power relations, development priorities, values and practices).

While crisis and disasters are often thought of in negative ways, crises can also open windows of opportunity to reroute socio-ecological pathways (Pelling 2010; Westley et al. 2011; Loorbach and Huffenreuter 2013; Westley et al. 2013; Pelling et al. 2014; Rauschmayer et al. 2015). McSweeney and Coomes (2011) found that hurricane Mitch in Honduras enabled poorest households in an indigenous community to initiate institutional change that promoted more equitable land distribution and more sustainable forest use. Gelcich et al. (2010) show how political turbulence and dwindling fishing stocks led to fisheries transformation in Chile; a process facilitated by preexistence of a functional fishermen's network that was able to scale up and benefit from enabling policies. Gelcich et al. (2010) Westley et al. 2013 discuss opportunity contexts defined as "openings in political systems that arise from changes in formal and informal political institutions [that drive] the mobilization of resources and collective action". In these cases, shocks – whether ecological, political, social or economic – lead actors to question institutional arrangements and open spaces for new ideas and relationships (Westley et al. 2013). These spaces are often pre-existing niche spaces that are given an opportunity to scale up or shadow networks that get mobilized (Westley et al. 2011; Loorbach and Huffenreuter 2013; Olsson et al. 2014). These niches – defined as small protected spaces in which old practices can be nurtured and new practices can develop protected from pressures by the prevailing regime – often provide seeds for innovative ideas, practices and knowledge to emerge (Bennett et al. 2016). For instance, historic community gardens provide bio-cultural refugia safeguarding seeds, agricultural knowledge and social relations that are essential for the food security of cities in times of crisis (Barthel et al. 2010; Barthel et al. 2013a; Barthel and Isendahl 2013). Yet, little is known about what enables these niche experiments to scale up (Olsson et al. 2014).

As noted by Braat and de Groot (2012:1), "the economic crisis may be used profitably [...] to teach humanity what ES and biodiversity are contributing to welfare". There is a plethora of literature

highlighting how nature plays a key role in crisis adaptation by providing safety nets in rural contexts (e.g. non-timber forest products) (Dercon 2002; McSweeney 2004; Shackleton and Shackleton 2004; Sunderlin et al. 2005) and urban contexts (e.g., community gardens) (Buchmann 2009; Barthel et al. 2010; Tidball 2012; Tidball and Krasny 2012; Barthel et al. 2013a; Barthel and Isendahl 2013; Barthel et al. 2013b; Colding and Barthel 2013; Gray et al. 2013). Examples in urban areas include U.S. relief gardens and Victory gardens in the UK during WWII (Lovell 2010). Another example is that of rural and peri-urban gardens for urban residents (*dachas*) that provided 40% of the Russian agricultural output three years after the collapse of the Soviet Union, constituting an essential safety net for 40 million urban and peri-urban households (Seeth et al. 1998). Tidball (2012) argues that people seek to reconnect with nature in times of crisis not only because they seek material benefits (i.e., food) but also because remembering the affinity that we have with the rest of nature and expressing and acting on that affinity, for instance creating restorative places (i.e., gardens), confers resilience at multiple scales. This hypothesis, which he calls urgent biophilia, asserts that humans need to reconnect with nature in times of crisis for material and non-material reasons, and that this reconnection is the source and product of resilience (Tidball and Krasny 2012). Less is known as to how people – especially people that are disconnected from land-based livelihoods such as urbanites – relate to, mobilize and access these resources in the first place.

'Back-to-the-land' is a fuzzy concept that encompasses a multiplicity of experiences and "migration processes that take people into areas [or activities] which they consider by and large to be more 'rural' than those they have moved from" (Halfacree 2001: 161). Research on back-to-land movements – also called counter-urbanization, neoruralism, homesteading, voluntary simplicity or "off-the grid" – highlights that there were significant movement of people out of the cities to rural areas to reconnect with nature in times of societal upheaval (e.g., sociocultural revolution of the 1960-1970s, war times, economic crises [great depression, post-USSR]) (Fielding 1982; Jacob 1997; Halfacree 2001; Paniagua 2002; Halfacree 2004; Mitchell 2004; Halfacree 2006; 2007; 2008; Vannini and Taggart 2013); a trend in opposition to the mainstream urbanization process which

drives a disconnection between people and the ecosystems they rely upon (Cumming et al. 2014). Gould (2005a) reports that an estimated million people migrated to rural and peri-urban areas in the United States in the 1960-70s, and about 50 million expressed interest in simpler lifestyles; a trend which she contrasted to homesteading movements of the 1930s that focused on alleviating impacts of the great depression. Many of these back to the land experiments were fertile innovation incubators (niche spaces) for ideas and practices that are nowadays important for sustainability: organic farming and other alternative food systems, transition towns, low-carbon economies, de-growth movement etc. (Jacob 1997; Laschewski et al. 2002; Gould 2005b). In France, regions where young urbanites moved to in the 1960-70s, are now strongholds for rural environmental conservation through the promotion of alternative food products and movements (Mamy and Roussel 2001; Papy et al. 2012). Similarly, neorurals in the U.K. are important supporters and promoters of alternative food networks (Halfacree 2006; 2007). Interestingly, back-to-the landers often hold different view of nature from conservationists as they “rely on nature as a resource for daily needs – and thus occupy a different cultural space than wilderness preservationists” (Gould 2005a: 149). As a consequence, we can hypothesize that their perceptions and management of ecosystem services will differ from other rural dwellers but also from traditional conservation movements. Despite considerable research regarding these alternative livelihoods, few studies focus on the ways that back-to-landers perceive and manage their land and livelihoods (exceptions include studies of Quebec neoruralism (Paquette and Domon 2003; Roy et al. 2005) and US back-to-landers (Jacob 1997)). None frame the ‘back-to-land’ process trend in terms of adaptation responses to wider social-ecological changes.

3. Study area

3.1 Economic crisis in Greece

A global financial crisis has been affecting the World’s economy since 2008, and the southern members of the European Union (Spain, Portugal, and Greece) in particular. Unemployment currently hits 23.8 million people, 12% of the EU population, resulting in poverty and social unrest (EUROSTAT 2015). One of the first country’s affected by the economic crisis, Greece obtained

emergency lending from the Troika (European commission, European Central Bank, and International Monetary Fund) conditional on the establishment of austerity measures. These structural adjustments led to significant social impacts: general unemployment rose from 7.5% in October 2008 to 26% in December 2014 (the highest in Europe); wage income decreased by a third from 2008-2012 (Giannitsis and Zografakis 2015), while household consumption fell by 15% in the 2008-2011 time period (Gerstberger and Yaneva 2013). Hit the hardest are Greece's youth (under 25), 50% of whom are now unemployed (ELSTAT 2015). The effects of the crisis are particularly felt in the capital, Athens, where costs of living are higher and livelihoods more specialized (Skordili 2013). In 2009-2010 alone, there was a 51% increase in poverty level in the capital (*ibid*). These conditions have led many researchers and journalists to compare conditions in Greece to the 1929 Great Depression in the U.S., with the notable difference that the depression in Greece has no "New Deal" to assist with recovery (Norris 2013).

The primary sector is the only sector of the Greek economy which experienced an increase in value post-economic crisis (~20%) (PASEGES 2011: 11). Employment in the primary sector increased, shifting from 11.3% in 2008 to 13% in 2012 (~78,000 people) (Fig. 1.2). These official statistics refer to people that registered as professional farmers, not accounting for the harder to track informal agricultural economy. In March 2012, the ministry of agriculture randomly polled 1,286 people in the two largest cities (Athens and Thessaloniki), finding that 7 out of 10 people actively planned to go to the countryside (i.e., corresponding to about 1.5 million people proportionally). High costs of living, financial insecurity, and the perception that life is easier in the countryside were major reasons mentioned. About a third of the people polled wanted to engage in agriculture – primarily organic agriculture – and a quarter had initiated efforts to move back to the land. 67.5% had assets that they could mobilize in the countryside (i.e., houses or fields) but lack of farming knowledge was a major limiting factor for 63% of the people polled.

3.2 Back-to-the-land in the context of profound restructuring of rural areas

This renewed interest in primary production in Greece occurs within a broader, pre-crisis trend shifting away from agriculture and other land-based livelihoods, characteristic of most developed countries. This rural exodus occurred later in Greece than elsewhere in the European Union (EU). In 2008 Greece still had about 15% of people employed in the primary sector, usually older people (>65 years old), higher than the 5% of the overall workforce that constitutes the average in the rest of the EU (PASEGES 2011). Interestingly, the majority of farm holdings in Greece are small-scale, averaging 4.76 ha as opposed to 13 ha in the rest of EU (PASEGES 2011).

The presence of small-scale farms is partly explained by Greece's highly heterogeneous topography, 60% of the territory consists of mountainous areas and 20% of the land residing on 3,000 islands (Giannakopoulos et al. 2011). It is also linked to processes of urbanization that started post-WWII. In the 1950-1970s, Greek rural areas experienced a mass outmigration to large (coastal) cities – mostly Athens – and abroad, due to a variety of push and pull factors including war, the industrialization of urban centers, and the paucity of services and lucrative employment in rural areas (Beopoulos and Skuras 1997). As a result, mountainous areas and islands experienced extensive land abandonment, while coastal land uses intensified. These demographic changes coincided with the efforts of successive Greek governments to modernize agriculture via the introduction of mechanization, improved seeds, use of inorganic fertilizers, pesticides, and the introduction of non-rainfed irrigation systems, mainly along the coastal plains where economies of scale could be more easily implemented. Greater emphasis on modernization, promoted by subsidies from the European Common Agricultural Policy, contributed to an intensification of land practices on prime agricultural lands and to the abandonment of marginal lands, both practices, interestingly, that contribute to land degradation (Lorent et al. 2008; Barbayiannis et al. 2011). To conclude, the back-to-land movement seeks to integrate into rural areas and food production at a time when rural areas are affected by significant interrelated drivers of change: land degradation (i.e., soil loss) and water scarcity under changing climatic conditions. These constraints are

exacerbated by the dismantlement of the welfare state under austerity conditions which increases governance challenges in both rural and urban areas (Geels 2012).

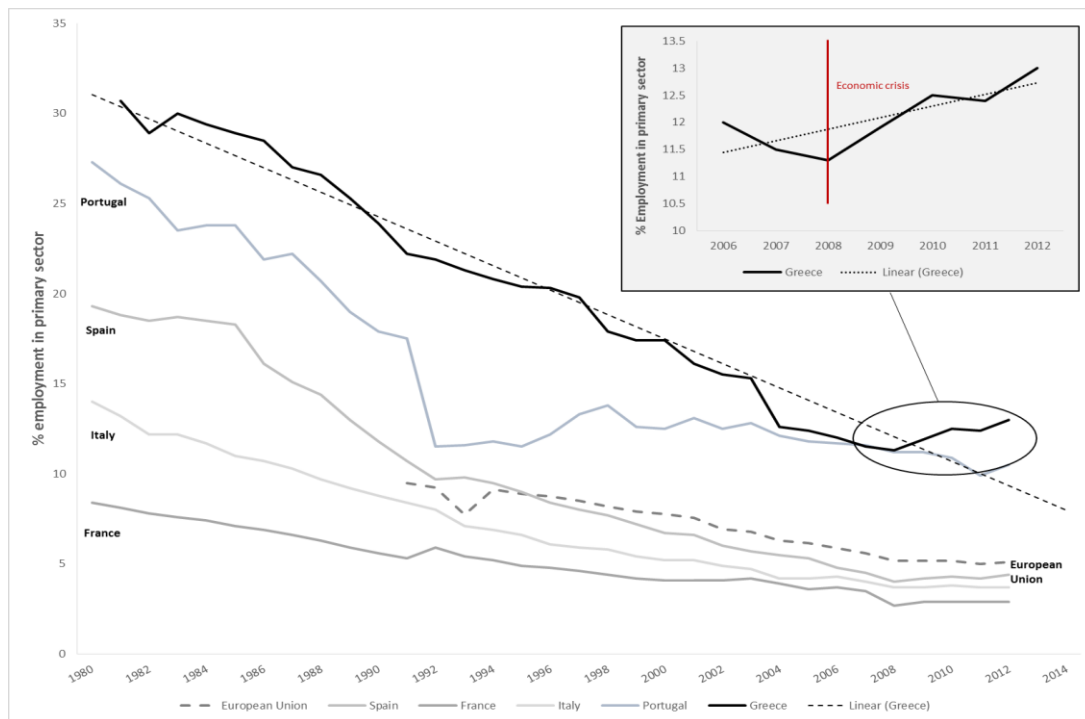


Figure 1.2 Percent employment in the primary sector (i.e. agriculture, fisheries, forestry and animal husbandry) from 1980-2012 in selected European Union countries. Black line represent Greece. Created from World Bank Data (2017).

Social connectivity between rural and urban areas is one of the mechanisms that hypothetically facilitate a turn to local food production. It promotes access to land, know-how, and psychological support. Family networks that span urban and rural areas persist through the rekindling of ties during traditional holidays and summer breaks, when urbanites visit their relatives in the countryside (Goussios 2010). Duquenne (2008) found that strong geographic mobility is present between place of residence (usually the city) and place of family origin (the village); a phenomenon that remains “invisible” and “unquantified” among policy circles. While this type of urban-rural coupling is not new, its importance in adaptation has not been discussed in the context of the crisis.

4. Overview of chapters

Each chapter in the dissertation constitutes a standalone research paper intended for publication. As such, each of the three main chapters, II-IV, has its own introduction, methodology, and case study, results, discussion and conclusion section.

Chapter II draws on the qualitative analysis of 76¹ interviews of back-to-landers to understand why people are going back to the land (their motivations), how this relates to agency and personal transformation, and what implications might be for system-level, social-ecological transformations. Individual transformation is explored through an in-depth examination of ways that agency is mobilized in response to changes in the broader context and social discourse, which combined with prior experiences and resources, leads to different motivations. The link between individual transformations and system-level change is driven by collective action and/or emergent change that occurs when individual transformations multiply is also briefly explored and discussed.

Chapter III creates a typology of different back-to-land strategies, focusing on the assets that households mobilize in order to go back to the land. Particular attention is paid to the different mobilities adopted in order to manage land, the ways these mobilities enhance households' capacities and the limits they encounter. Logistic and multinomial logistic regression models are built to identify which assets best explain different strategies adopted. Findings are complemented with insights from a qualitative analysis of key themes related to mobility.

Chapter IV argues that most discussions of the importance of ecosystems in times of crisis focus on material benefits that people derive from ecosystems, such as food or income. This chapter finds that non-material benefits play an important role in helping people be and feel safe in times

¹ During my fieldwork I interviewed more than a 100 new food producers, 23 urban gardeners and community organizers, and more than 50 experts or members of organizations that are related to the back-to-land movement (i.e. provide knowledge, financial support and so on). Due to the sheer amount of data acquired, I focused this analysis on a subset of 76 interviews of new food producers, randomly selected among the broader sample but stratified based on different types of back-to-land strategies.

of crisis. Results are based on an analysis of key themes emerging from qualitative data collected during the semi-structured interviews of 76 back-to-land households.

5. Significance

This dissertation aims to improve our understanding of adaptation and transformation, conceptualized in terms of pathways of change. There is limited understanding in the literature regarding how adaptive capacity is created rather than simply harnessed, and how different attributes of adaptive capacity are mobilized and enhanced in times of crisis. I explore in particular the process of natural capital creation by linking livelihood/capability approaches to ecosystem services research. This dissertation also aims to improve a subset of ecosystem services research interested in the social-ecological co-production of benefits and how those translate into human wellbeing. The case-study seeks to unpack the deeply relational nature of human-environment interactions, especially in a crisis context, and the role that agency plays in shaping how people negotiate their lives and interact – sometimes even transform – the very institutions that structure their choices.

The Greek back-to-land trend is occurring in the midst of deep restructuring of Greece's governance, economic, social and ecological systems. The renewed interest for food production by young people speaks to debates over 1) food security and resilience and 2) the restructuring of agriculture in developed countries. Indeed, this back-to-land process is manifesting in a European context characterized by a dwindling primary sector headed by an ageing population of farmers and a deep transformation of rural and urban spaces. Thus, amidst the chaos brought about the economic crisis, there is hope. Hope that somehow the back-to-land trend can scale up and drive urban and rural transformations towards sustainability. By providing an in-depth assessment of the motives, practices and aspirations of new farmers, my dissertation allows for a more in-depth assessment of social-ecological changes underway, and may help identify reforms in policy or practices that can facilitate different types of back-to-land processes.

CHAPTER II. Crisis, Transformation, and Agency: Why are People Going Back to the Land in Greece?

1. Introduction

Understanding the nature of social-ecological transformations² has emerged as a key research and policy agenda in integrative fields such as resilience and sustainability. This interest in transformations is linked to the realization that unprecedented levels of anthropogenic changes undermine the prosperity of human societies and the functioning of the Earth's system to such an extent that adapting might not be enough (O'Brien 2012a; Raworth 2017). Most studies of adaptation and transformation have focused on environmental crises: climate change or natural hazards, yet the earth system and social systems have also been wrecked by social disturbances such as economic and political crises, and these drive social-ecological transformations that need to be further understood (Leichenko et al. 2010; Loorbach et al. 2016).

Transformations of social-ecological systems are fundamentally about agency: human intention, motivation, and power to influence and to resist (Davidson 2010; Brown and Westaway 2011; Eakin 2015; Temper et al. 2018). Most studies of social-ecological transformations focus on deliberate system-level transformations, those that are strategically guided by a set of influential actors (Westley et al. 2011; Westley et al. 2013; Moore et al. 2014; Werbeloff et al. 2016). These deliberate system-level transformations are often thought to be facilitated by major crises, whether ecological, political or social, that open windows of opportunity for change (Olsson et al. 2004; Olsson et al. 2006; Biggs et al. 2010; Birkmann et al. 2010; Folke 2016; Frantzeskaki et al. 2016). System-level transformations may also occur when multiple individual transformations scale up (Kates et al. 2012; Feola 2015). Little is known about how crises foster these individual transformations, and how these may relate to different types of system-level change (deliberate vs. uncoordinated).

² Social-ecological scholarship refers to research that seeks to understand the interplay between social and ecological/environment dynamics and includes the interrelated fields of resilience, adaptation/vulnerability, sustainable transitions and sustainability.

This article seeks to fill this gap by looking at how crisis fosters agency and individual transformations in the case of Greece's back-to-land movement, whereby urbanites sought to reconnect with land-based livelihoods during the economic crisis (2008-onwards). To do so, the article draws on the qualitative analysis of 76 interviews of back-to-landers to understand why are people going back to the land (their motivations), how this relates to agency and personal transformation, and what implications might be for system-level social-ecological transformations. Individual transformation is explored through an in-depth examination of ways that agency is mobilized in response to changes in the broader context and social discourse, which combined with prior experiences and resources, leads to different motivations. The links between individual transformations and system-level change, driven by collective action and/or emergent change that occurs when individual transformations multiply, are also briefly explored and discussed.

2. Understanding transformations

2.1 Crisis and transformation

Crises are defined in a broad sense as “collective stress situations” (Quarantelli and Dynes 1977: 23) which change “dominant understandings, values, institutions, and social relationships through which society is organized and defined” (Loorbach et al. 2016:19). While crises – whether ecological, political, social or economic – often accelerate processes of dispossession and inequality (Klein 2007; Pelling and Dill 2010), they also may open windows of opportunity for sustainable social-ecological transformations (Westley et al. 2011; Kates et al. 2012; Pelling et al. 2012; Loorbach and Huffenreuter 2013; Westley et al. 2013; Brundiers 2016; Loorbach et al. 2016). In these cases, crises provide opportunities for new ideas and relationships to emerge that challenge existing institutional arrangements (Olsson et al. 2006; Westley et al. 2011; Westley et al. 2013; Olsson et al. 2014). For example, McSweeney and Coomes (2011) found that hurricane Mitch in Honduras enabled poor indigenous households to initiate institutional change that promoted more equitable land distribution and more sustainable forest use. Gelcich et al. (2010) show how political turbulence and dwindling fishing stocks led to fisheries

transformation in Chile; a process facilitated by pre-existing fishermen's networks that were able to scale up and benefit from these enabling policies.

Sustainable social-ecological transformations are broadly defined here as significant changes in human-environment interactions that help sustain the earth's biophysical systems while meeting human needs (Kates et al. 2001; Walker et al. 2004). Such transformations range from changes in perceptions, norms and values to changes in behavior and practices (O'Brien 2012a; O'Brien and Sygna 2013), which in turn may foster sustainability-oriented social-ecological outcomes (Moore et al. 2014). System-level transformation implies a process of structural change (i.e., changes in fundamental patterns and interactions in the social-ecological system), which require social, symbolic, physical and material changes including alterations of sense-making, worldviews, power relations, social networks, ecosystems, physical infrastructure and technology (Feola 2015). O'Brien and Sygna (2013) refer to transformations in three interrelated spheres from shifts in the practical sphere (i.e., behaviors and technical responses) to shifts in the political sphere (i.e., institutions and laws) and finally the personal sphere (i.e., individual and collective beliefs, values and worldviews). In their view, the personal sphere – worldviews and values people hold – ultimately shapes how structures and systems (i.e., the political sphere) are viewed, and in turn influence possible solutions (i.e., the practical and political spheres).

Most research on transformations emerging from sustainability, resilience, transition studies focus on deliberate transformations driven by influential actors (e.g., leaders, entrepreneurs) (Olsson et al. 2006; Westley et al. 2011; Westley et al. 2013; Werbeloff et al. 2016). Yet, as noted by scholars in other fields such as political ecology, transformations often are chaotic and contested, emerging from social movements (Temper et al. 2018) or potentially from multiple individual transformations that scale up (Kates et al. 2012; Feola 2015). Much less is known about the ways that crises lead to individual transformations through the exercise of agency, and how these individual transformations may related to deliberate or uncoordinated (emergent) system-level transformations, which is the focus of this article.

2.2 Agency

Agency has emerged as a central concept in social-ecological research, including the interrelated fields of resilience, sustainability and adaptation to global environmental change, due to the realization that resolving social and ecological issues and steering societies towards desirable transformations requires a greater understanding of individual and collective human intention, motivation, action (Davidson 2010; Brown and Westaway 2011). Agency refers to the ability to act, to make one's own free choices and change one's life circumstances (Bandura 2006; Brown and Westaway 2011; Coulthard 2012). An agency-oriented approach recognizes that humans have intentions, motivations, inner lives that shape how they view risks and opportunities and make decisions. The ability to seize windows of opportunities during times of crises is intrinsically tied to agency (Brown and Westaway 2011; Westley et al. 2013; Werbeloff et al. 2016). Before acting one needs to identify that there is an issue, assess potential ideas or solutions about what to do, and believe that one's actions, individually and/or collectively, can lead to change (self-efficacy) (Bandura 2000; Bandura 2006).

Agency tends to be approached in terms of two broad dimensions. The first, or what I call "internal" agency relates to cognitive and psychosocial processes and their interplay with the social-ecological context, which enable people to influence their own life circumstances. Internal agency refers to the cognitive processes involved in order to act such as forethought (i.e., the ability to anticipate the future) and self-efficacy (i.e., belief that their actions can lead to change), which in combination with available resources and social and environmental context, affects how goals and aspirations, perceptions of risk and opportunity are formed (Mitchell 1982; Bandura 2000; Bandura 2006). Self-efficacy is given particular weight because it is critical to how risk and opportunities are assessed, and it influences what motivates people to choose particular actions (Bandura 1982; Mitchell 1982; Bandura 2000). Internal agency can thus be broadly characterized as processes involved in changing one's self (internal agency) that involve creating inner lives, identities, dreams and aspirations. Creativity and imagination are key elements of internal agency, essential to exercise forethought and foster self-efficacy (Bandura 2006). Internal agency has been extensively

discussed in psychology (Bandura 1982; Mitchell 1982; Bandura 2000; Bandura 2006) and applied in climate change and natural hazards vulnerability and adaptation studies that seek to understand the subjective dimensions of adaptive capacity (i.e., how people perceive risk and opportunity differently based on differing cognitive and psychosocial attributes) (Grothmann and Patt 2005; Frank et al. 2011; Kuruppu and Liverman 2011; Fresque-Baxter and Armitage 2012; Eakin et al. 2016). The second or “external” agency relates to the ability to influence and mobilize others to determine collectively life’s conditions, and as such is closely related to the concept of power (i.e., the ability to mobilize people and resources to achieve a goal) (Bandura 2000; Avelino and Rotmans 2009; Avelino and Rotmans 2011). Most resilience and sustainability transition studies tend to focus on external agency, focusing on particular kinds of agents (i.e., social innovators, leaders) that are able to organize and influence others to seize an opportunity (Smith et al. 2005; Westley et al. 2011; Loorbach et al. 2017).

These two dimensions of agency are interrelated. To be able to influence others (external agency) one has to have a strong sense of internal agency, meaning that one has to have the desire to act and believe that their actions will lead to change (Coulthard 2012). Manuel-Navarrete (2010) argues that social and political struggle require both people with external agency, and the existence of emancipated individuals that have undergone internal transformations, calling for more attention to internal agency. Both internal and external agencies are deeply intertwined with existing social-ecological contexts which may catalyze or limit agency (Sewell 1992; Manuel-navarrete and Buzinde 2010). Understanding the interplay between internal and external agency is particularly important because both represent fundamental aspects of agency. By focusing on both dimensions of agency, the concept of agency can connect actor-oriented decision-making at the individual level to the potential for transformation at the system level (Coulthard 2012).

3. Conceptual framework

Grothmann and Patt (2005) developed a framework to explain how adaptation to climate change was linked to subjective internal cognitive dimensions. Their framework related people’s

perceptions of climate and adaptation risk and opportunities to broader social discourses as well as personal experiences, which in turn structured adaptation decisions undertaken. Eakin et al. (2016) further developed this framework by relating internal cognition (also called subjective capacity) to social-ecological context and linking capacities (e.g., social and political capitals) to understand adaptation or lack thereof. I expand upon these two frameworks to further link subjective dimensions of capacity to concepts of transformations. In my framework, personal transformation is related to internal agency linked to past experiences, broader social-ecological context including social discourse and collective action, as well as individual objective capacities (e.g. assets and entitlements), which shape the risk and appraisal process and in turn the formation of motivations. The novelty of this framework lies in focusing on individual transformations and how these might be related to system-level ones. Here, individual transformation refers to important changes in self-identity, core values and/or the way that risk and opportunity is appraised, in short to a radical change in the way an individual perceives him or herself and makes decisions (internal agency). These individual transformations are related to system-level transformations through two linkages. First, by linking, similarly to what Eakin et al. (2016) did, individual motivations to collective action through what I call “external agency”, the ability to mobilize others. Second, by relating system-level transformation to multiple uncoordinated individual transformations that may lead to a new emergent system (Kates et al. 2012; Feola 2015). The first case would lead to deliberate transformations while the second to uncoordinated emergent system-level transformations, even though the underlying individual transformations may be deliberate.

In this article, I apply this framework to understand how the Greek crisis fostered personal transformations. First, I presents a short overview of motivations cited for going back to the land and how these are associated with past experiences and resources. Second, I examine in more detail how the economic crisis mobilized agency and led to individual transformations by changing social discourse and broader context, how risk and opportunity is appraised as well as collective action (external agency). Most of the focus is on internal agency and its link to individual

transformations but I also briefly discuss collective action (external agency), and the potential for system-level transformation.

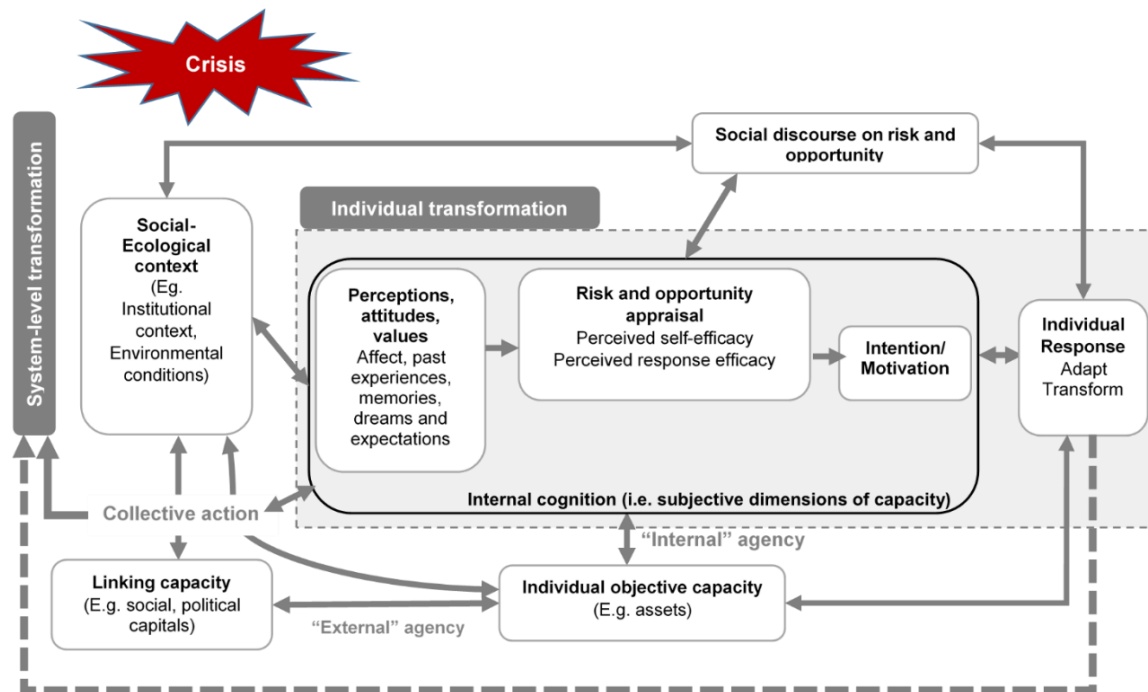


Figure 2.1. Conceptual framework illustrating how crises relate to transformations by changing 1. The social-ecological context and social discourses, 2. Individuals' objective capacities (i.e., access to various entitlements), which affect, 3. Individuals' internal cognition including how risk and opportunity are appraised and 4. Collective action and linking capacities, which may or may not change affect internal agency. These in turn lead to different motivations/intentions that lead to differing individual responses. Some of these responses are linked to collective action, which may or not, lead to deliberate system level transformations. Additionally, the multiplication of individual transformations may lead to emergent system-level transformations (dashed arrow). Inspired by (Grothmann and Patt 2005) and Eakin et al. (2016).

4. Case-study

4.1 The economic crisis

A financial crisis has been affecting the global economy since 2008, and the southern members of the European Union (Spain, Portugal and Greece) in particular. One of the first countries affected by the economic crisis, Greece obtained emergency lending from the so-called "Troika" (European commission, European Central Bank and International Monetary Fund) conditional on the establishment of austerity measures. These structural adjustments led to significant social impacts: general unemployment rose from 7.5% in Oct. 2008 to 26% in Dec. 2014 (the highest in Europe);

wage income decreased by a third from 2008-2012 (Giannitsis and Zografakis 2015), while household consumption fell by 15% in the 2008-2011 time period (Gerstberger and Yaneva 2013). Hit the hardest were Greece's youth (under 25), 50% of whom were unemployed in 2014 (ELSTAT 2015). The economic crisis led to a very abrupt worsening of social and economic conditions, especially in urban areas (Skordili 2013; Matsaganis et al. 2016; Giannitsis and Zografakis 2018). These conditions have led many researchers and journalists to compare conditions in Greece to the 1929 Great Depression in the U.S., with the notable difference that the depression in Greece has no "New Deal" to assist with recovery (Norris 2013).

4.2 Back-to-land trend

The primary sector is the only sector of the Greek economy which experienced an increase in value during the economic crisis (~20%) (PASEGES 2011: 11). Employment in the primary sector increased, shifting from 11.3% in 2008 to ~13.5% in 2013-2014 (~78,000 people) (World Bank Data 2017)³. These official statistics only refer to people that registered as professional farmers, thus not accounting for the harder-to-track non-registered farmers. Nonetheless, an emerging counter-urbanization trend (move to rural areas) was observed in Greece during the crisis (Gkartzios 2013; Remoundou et al. 2016; Gkartzios et al. 2017). Some Greek scholars argue that this move back to land is due to the fact that rural areas are now seen as refuges in times of crisis (Kasimis and Papadopoulos 2013; Kasimis and Zografakis 2013; Daudon and Vergos 2015), others see in the move back to land evidence of the increased vulnerability of both urban and rural populations (Anthopoulou et al. 2017). No study examines in depth the motivations expressed by back-landers nor how those reflect processes of personal transformation, which is the object of this study.

³ The percentage dropped to 12.9% in 2015 probably due to the retirement of old farmers and the emigration of a significant number of the active population abroad. Note – For men, percent employment in agriculture increased from 10.83% of total male employment in 2008 to 13.98% in 2014 and 13.28% in 2015.

5. Methods and Analysis

This analysis is based on in-person, semi-structured interviews of 76 households that turned to land-based activities post-crisis (after 2008) in various regions of Greece. Most of the interviews were conducted in 2014, with a few follow-up interviews conducted in 2015. These households were residing – and some still do – in urban areas before the crisis, and were not substantially involved in land activities previously. Snowball sampling, which enables the study of hard-to-find populations, was employed for the selection of households (Bernard 2006). In snowball sampling, sampling grows from an initial set of contacts, usually obtained through key informants and/or documents, with each additional contact providing a referral for other relevant people to interview. Snowball sampling is challenged by a selection bias that might lead to missing potentially important isolates (Atkinson and Flint 2001). To minimize this bias, initial interviewees were drawn from diverse and unrelated sources (>10), including referrals from academics, civil society members, business and government organizations, from people that started farming themselves as well as identities found from newspaper, blogposts and social media posts that discussed back-to-land initiatives.

The semi-structured interviews integrated a standardized list of questions aiming to generate quantitative data to open-ended questions focused on flexible thematic content that allowed people to express themselves more freely (Hay 2005: 81). These open-ended questions were iteratively expanded upon based on key themes that emerged during the interview process. I collected information regarding household life stories, demographics, livelihood activities, incomes and assets (pre- and post-economic crisis), land access, reasons behind their decision to start farming, ways that they perceive, relate to, and manage their land and different components of their land (i.e., soil, water, farming techniques adopted, knowledge acquisition and market strategies), and the livelihood and land outcomes of these transformations (see Appendix A).

This article is based on the analysis of qualitative content from the interviews using a grounded-theory approach (Bryant and Charmaz 2007). Grounded theory refer to set of iterative, inductive

strategies to analyze data, starting with individual experiences and cases to progressively develop more abstract conceptual categories (Charmaz 1996). One of the defining characteristics of grounded theory is that analytic categories are principally derived directly from the data rather than based on a priori concepts or hypotheses (Charmaz 1996; Bryant and Charmaz 2007). In this case, initial concepts and theories did frame the ways that questions were formulated but room was left to iteratively integrate new concepts that emerged during the data collection process. During the analysis stage, I went through various phases of coding using Nvivo 9 to facilitate the process.

This article focuses on main themes emerging from two main initial questions: “why did you go back to the land?” and “how did the economic crisis affect your decision?” Answers to the question “why did you go back to the land?” were coded into seven broad themes that explain people’s motivations (see Table 2.1). Additionally, key themes related to agency were also coded for, including discussions of the role of creativity and imagination, relating the crisis to personal transformation (internal agency) and/or the emergence of collective action (external agency) discussed in particular in relation to the code “political action”. Key quotes relating to different themes are presented in the results. All names are pseudonyms to safeguard the anonymity of people interviewed, and quotes are identified by a unique code only known to the main investigator. All quotes were translated from Greek by the main investigator.

The analysis of qualitative data was complemented with statistical measures of association, such as chi-square and Fischer’s tests for categorical variables (Agresti 2013), to provide context as to how different motivations related to past land experiences and resources (here types of land access); all elements of the conceptual framework (see Fig. 2. 1). Prior land experiences refer here to the farming knowledge and experiences that people acquired growing up, which were organized into four main types: “professional farming family”, “self-consumption farming family”, “recreational nature experience” and “no experience” (see section 6.2).

6. Results and discussion

6.1 Why were people going back to the land?

6.1.1 Different motivations for going back to the land

People expressed different motivations for turning to land-based activities, and were motivated by more than one reason (see Table 2.1). Reconnecting to nature was the most frequently cited motivation for going back to the land, closely followed by a search for a good life and self-sufficiency (>50%). The need for greater employment security and believing that going back to the land was a political action were also important motivations (>30%).

Table 2.1 Motivations for going back to the land

Motivations	Description	Percent mentioned
Employment security	Need to secure a stable job and secure source of income	33%
New investment	Primary sector seen as an investment opportunity for economic growth (without having a green growth focus)	18%
Green economy	Desire to invest in new, more environmentally friendly, land production systems (geared towards creating a green business)	17%
Reconnect to nature	Need to be close to the environment and various attributes associated with living in more 'natural' areas	54%
Being healthy	Desire to eat 'good' food, without chemicals (usually organic), rediscovering the taste of food. A general concern over health	26%
Good life	Search for a meaningful and good life, with better life and work conditions. Often mention raising a family, having more time.	51%
Self-sufficiency	Desire to become more autonomous, to get a sense of security and independence	51%
Political action	people stating explicitly that they considered turning to land-based activities as a form of resistance and a political statement	33%

6.1.2 How did prior land experiences influence motivations?

Motivations were influenced by the farming and land experienced people had while growing up (see Fig 2.2). People that had professional farmers in their background, usually their grandparents, (11% of overall households), were strongly motivated by economic reasons, including greater employment security and the potential for the development of green economies. Even though most hadn't directly farmed, they had a basic understanding of what farming as a business is about. They were also more likely to have strong perceptions that farming was a risky business without

necessarily always being knowledgeable about farming. People with this prior land experience were also strongly motivated by a desire for self-sufficiency.

Others grew up in contact with gardeners or subsistence farmers during their childhood (27.5% of overall households). Most of people in this category did not necessarily grow food themselves but they had memories of people growing food and experiences of rural life more generally. For instance, as noted by one interviewee: *“I didn’t have extensive experience with the land, but as a kid, when I visited my grandparents, I was exposed to rural landscapes in my daily life: my grandfather fishing, farming, making cheese, cutting tomatoes or beans from the garden, collecting eggs”* (I65). People that had that type of childhood experiences were strongly motivated by their desire to reconnect with nature owing to their positive childhood memories. In comparison to people with professional farmers in their background, they were more likely to view rural areas as a place where they could have better life and work conditions.

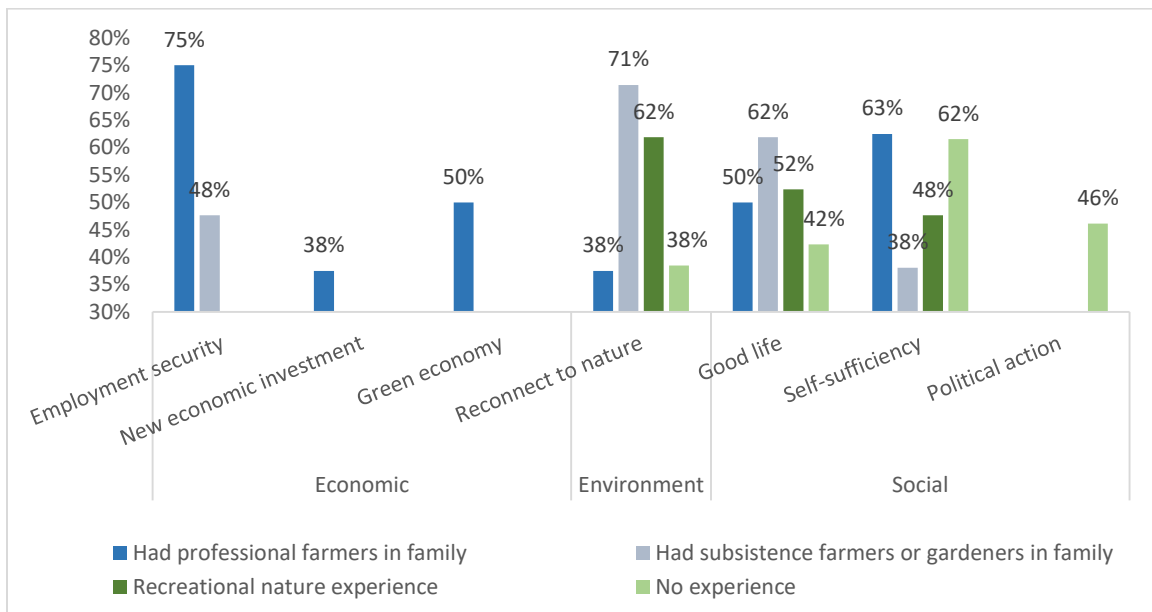


Figure 2.2 Main motivations linked to prior land experiences. Percentages refer to percent households that had that motivation within each category. Only frequencies above 30% are presented here.

The third type of prior land experiences refer to people that did not have any prior experience with food production, although they sometimes visited their village of origin or other rural areas as children (27.5% of overall households). Their experiences were mostly about recreation in nature as illustrated by this interviewee: *“I was entirely ignorant [of farming]. I used to come to my village but I hadn’t learned anything. I had no relation with food production. I used to come during the summers and I went to swim. Back then I would never spend the time to learn these [farm] things”* (180). People in this category were mostly motivated by a desire to reconnect to nature and in search food a good life, with better work and life conditions.

The fourth group, “No or very limited experience”, neither had a village of origin nor spent time in rural areas prior to turning to land-based activities (34% of overall households). Interviewees often mentioned the expression, “I am a child of the city”, to refer to their profoundly urban upbringing, disconnected from nature as well as rural areas. People with little prior experience were strongly motivated by a desire for self-sufficiency, partly because of feelings of insecurity that the crisis generated. As noted by one person with no prior land experience: *“I was inspired to grow food during the crisis, as it happened for thousands of others. At the beginning, I was facing it as coerced need for self-sufficiency. At some point I realized that I didn’t know how to put a seed in the soil, to grow a plant. And that made me feel very weak.”* (137). Interestingly, 43% of people in this group referred to farming as a political action vs. 24-29% in the other groups.

6.1.3 How are motivations linked to resources?

Motivations were also influenced by the resources that households had access to. Land in particular was a very important assets for going back to the land, and that tended to be mediated by the social relations that people hold. 64% of households had access to land through their family networks, 25% through collectives (i.e., group projects, eco-communities), and 11% bought or rented land. Motivations that were more market-oriented including employment security and green economy were strongly associated with having access to family lands (Fischer’s exact test, $p=0.050$ and $p=0.010$, respectively for the two motivations listed), except the motivation “new economic

investment” which was significantly associated with land bought or rented (Fischer’s exact test, $p=0.015$). Motivations that were less economically-oriented in nature (i.e., better work and life conditions, health, reconnecting to nature, self-sufficiency) were not significantly associated with types of land access, except for the motivation “political action”. Those that mentioned political action as a motivation for going back to the land were more likely to gain access to land through collectives (Fischer’s exact test, $p=0.075$).

This section revealed that people had multiple motivations to go back to the land and those were influenced by the prior experiences and resources that people had access to. The next section focuses on the crisis-related process of personal transformation and its link to agency.

6.2 No longer crazy: changing context and social discourse

6.2.1 Crisis and insecurity

The economic crisis led to a very abrupt worsening of social and economic conditions, especially in urban areas. While several interviewees mentioned unemployment as a reason for deciding to go back to land (30% of households were unemployed), lack of employment stability also played a key role for many, as stated by one person: *“I wanted to be my own boss and have work! Stable work. I changed jobs 7 times in the last 3 years. I did jobs where I stayed 2 months, 3 months, 1 month. It’s not easy. How could I live like this?”* (I19).

This instability created deep crisis-related fears linked to the dependency and vulnerability that people had when living in a wage economy during times of economic recession. Going back to the land, and growing food in particular, was seen as a way to enhance one’s capacity to deal with present and future economic and/or political collapse. This can be clearly seen in the following quote that associated growing food to future survival: *“In 2010, I started seeing gardening more seriously...like something needed for survival”* (I109). Learning how to grow food gave people a feeling of strength and self-efficacy, as stated by one person concerned about his potential

unemployment: *"I started thinking "what will I do if I lose my job?", now that I produce my food, I feel stronger, it gives you confidence" (1191).*

Among those that still had an employment, the economic crisis led to a worsening of labor conditions with people having to work longer hours and losing many of the labor protections that existed previously.

These overall precarious labor conditions made farming and the opportunity to be one's "own boss" incredibly attractive. Work conditions were becoming so difficult that people linked the crisis and living conditions in the city to a "loss of humanity" that could only be regained through a process of personal transformation, as illustrated by the following quote:

"I couldn't stand being in Athens the last 3 years because of the economic crisis. I left my work voluntarily because I couldn't cope anymore...It was a daily abuse to my dignity with the constant requirements that they had, the work shifts, the stress and anxiety, and the (shrinking) earnings. I don't believe that going to the square [protests] is a solution. The solution is to change your life alone, and whoever wants to do the same can do it. I left because I wasn't feeling human in Athens anymore. I felt like a cog in the wheels of the system and I was unhappy. Depressed." (122)

6.2.2 Farming is a good idea: changing social discourse regarding farming and life in rural areas

Changes in social and economic context affected the overall societal discourse regarding rural areas and farming. People mentioned experiencing greater social acceptance, even support, from their families and friends, which facilitated their individual transformation as illustrated below:

"My family sees my occupation more positively with the crisis. [...] The farmer from the past was connected to poverty. Now the majority of people views going back to land as an economic opportunity. [...] It's also linked to a broader turn to quality. At many levels, including in diets, services and human relations. People have been submerged for so many decades with crap....advertisement, showing off...that we have to get rid of a lot of garbage to rebuild our values... [...] Now when you say to people "I live in the countryside and I produce agricultural goods, I am a farmer", the other is looking at you with respect, and says that it's great that there are some people doing something good. There are people that are starting to value this, beyond economics. They value what you do as an action. A movement. The way you are doing it, with respect for the land and differently. In the past if you said "I have an organic tomato" people would think you're crazy." (165)

"Many people have left to go to rural areas. When I was a kid in '80s, people used to write graffiti on the walls saying "country bumpkins go back to your villages and not only for Easter". There used to be a significant rejection of rural life by urbanites. Now that's not the case, urbanites even see rural areas positively. Something has changed" (183)

“In the past when I was discussing coming to the village, people were more negative, they were thinking it was crazy. Now more people are doing it, and people in general are saying “you were right... it’s a good idea to have some basic food supply, your own garden”. People have started accepting this turn to the land and to the village as a good idea and I think it’s because of the crisis” (12)

This change in general attitudes bolstered people’s agency. Going back to the land no longer seemed so unattainable. More people were able to get the support of their families, help that was important given that land (as discussed in section 6.1), physical capital (e.g., inherited farm equipment) and financial resources were often accessed through family networks. This meant that the change in overall context and social discourse not only changed people’s perceptions of the value of farming and rural areas, but also increased the available assets that interested back-to-landers had access to.

The perception that farming is socially and economically undesirable remains alive, especially among farming families that experienced hardships in the past. This is exemplified by the case of Markos M. who while coming from a farming family did not know anything about farming because his family did not want him to become a farmer.

“Growing up, I was barely involved in farming. My parents used to be very poor and when they were farming they always incurred losses. One year – the good year as we say – they had a surplus and they opened a business and said no more farming. Starting then my contact with agriculture was a form of punishment: If you don’t study you will become like your uncles that are farmers said my parents. In rural areas to be a farmer is not valued, it doesn’t have social prestige. And that’s what they were trying to convey to me. I don’t have a good relationship with my family. They do not want to help me become a farmer, they consider it bad that their child that was accepted to become an engineer will come back to be a farmer. They view it as a shame.” (152).

Markos M. then specified that his family refused to lend him their old farming machinery in order to dissuade him from continuing on his path to become a farmer. This example highlights that while overall social discourse changed regarding the value of farming, this was by no means universal and each household experienced different reactions from their social circle.

6.3 Mobilizing agency and personal transformation

6.3.1 Going back to land as a choice

About a third of households emphasized that return to the land was not a response to the crisis per se but rather a choice. By claiming such a choice, while being fully cognizant of the many ways by which the crisis had challenged Greek society and their lives, these interviewees were in fact emphasizing their agency. They were not victims of the crisis but agents that were taking control of their lives. Expressions like “take our own lives in our hands”, “seizing our personal strength”, “doing something” were often mentioned when talking about their decision. For instance, Katerina P. firmly stated that going back to her village was her family’s choice, but then went on to clarify:

“I think it would be an exaggeration to say that the crisis didn’t affect us. It affects everyone differently. It didn’t affect me in my personal life but it touched my social circle so, it’s the same. [...] I didn’t have assets in my name, I didn’t owe anything, I wasn’t fired from a job so it certainly didn’t affect me that way. But... before coming to the village I was involved in the big protests in Athens, and was looking to participate, to make sense of what is going on. When we came here I thought that our escape was a way to show the system that you are not participating or at least that there is a way to live differently. The crisis was a way to start thinking. I love doing things with my hands, and I want to learn more because in the back of my mind there is the thought ‘what if something happened...’Anything could happen twice as hard, so it’s good for people to know everything. So the crisis has surely influenced me maybe not so much economically because my needs were always very limited.” (166)

This quote illustrates well the risk and opportunity appraisal process involved. For Katerina P. and her husband going back to her village of origin and turning to farming was perceived to be a relatively low risk activity: they neither had debts nor were they tied to a well-paying job in the city. The move also provided the opportunity to engage in activities they loved such as working with their hands and being close to nature while resisting the crisis in their own way; going back-to-the-land was a way of “doing something” and “to show the system that there is a way to live differently”. This sense of agency is also clearly visible in another households’ response that framed the crisis as an opportunity emerging through the need to do something:

“The crisis is a general feeling of disappointment. Acting (I can produce, I can do) is against that feeling of disappointment. It gives strength, and it plays a very important role [in driving people]. If other jobs were going well, you would not think of working here unless you had parents that are farmers. You need to have a fear, an insecurity. The crisis is an opportunity.” (197)

The perception that one has a choice and that this choice may change things is very important for agency. Giannis O., whose father used to be a farmer, was forced due to unemployment to leave the city to work with his father in a periurban area of Thessaloniki, Greece second largest city. He

is one of the few interviewees to describe his going back-to-the-land experience as a loss of freedom; which may be linked to the fact that he is not starting a project of his own but rather rejoining the family farm under the supervision of his father.

When I was 26 I became unemployed for a second time. I found another job but they didn't give me any benefits (health insurance). So I decided to experiment with my father [working the land]. But it's twisted because I don't know if that's what I want to do. I still haven't decided if I want to be a farmer. Maybe it's because I was forced to enter into farming and it might be different for people that chose to do this" 112

6.3.2 The crisis as a catalyzer of latent desires

Overall, many households framed the crisis as an opportunity to start farming: an activity that many were previously interested in but did not do because the risk and opportunity appraisals were very different pre-crisis (i.e., family and societal pressures, high opportunity cost since they would have to leave good jobs etc.). Others went further to say that the crisis was a “catalyzer, speeding up a decision that was sometimes in the back burner for years, as illustrated by the following quotes:

“The economic crisis made ponder where we are going. To try and find something to do, a solution. And because I had some infrastructure [in his village], and because I liked working the land, I tried it easier. That's what was positive about the economic crisis. My friends were always telling me to become a farmer and I never listened. And here I am. I did it 15 years later.” (119)

“The crisis played a major role in my decision, it pushed me to think more seriously about going back to the land, something that I was thinking about for years. And it led me to make it a reality. Immediately. I didn't have other choices...” (122)

“The crisis made things easier for me. It happened when I was on the verge of deciding to come here and everything became easier and clearer for me and for my family for whom it no longer was just my craziness but also the wider context” (142)

Whether the crisis is really an opportunity or not ultimately depends on factors that are not solely within the purview of individual actors. But by framing their situation as an opportunity, interviewees reclaimed their agency. This observation was illustrated by Nikos M.: *“The crisis was a big opportunity for me. Meaning that I found the positive in this crisis that was imposed on us. That's how I saw it, and I am glad I did see it that way from the start because I might not have done anything otherwise.” (15).*

6.3.3 Changing life goals and values

Other households mentioned that they hadn't thought of going back to the land before the crisis. For them, the crisis deeply changed the way they framed their personal life goals and values. This occurred because former markers of success, such as professional advancement and income gains, were often no longer attainable and were now questioned and associated with the root causes of the crisis itself, as discussed in the following quotes:

"The crisis played an important role in my decision to change. I changed my life goals entirely. Until recently I was a painter that was very much interested in a successful career. One or two years after the crisis, I left painting, it was no longer inspiring me. I was no longer interested in expressing something symbolic about society because I could no longer understand what broader goals and values were present." (137)

"Before I was entirely into a capitalistic mode of living in Athens. I wanted to be a businessman, to make it and conquer everything. I did it all: studies, professional advancement etc. And I had bosses that were handing carrots and were saying "everything is yours, keep on going". I mainly changed after thinking about it all. The upheaval happened during the crisis when I started thinking how did things get to this and what am I doing? That's why I decided to start learning how to be self-sufficient" (150)

The crisis started a deep questioning of societal values and meanings, and the nature of the existing social contract. Many did not frame the crisis as an economic crisis but a "crisis of values", for which a deep societal restructuring was necessary:

"The economic crisis is not an economic crisis but what many call a crisis of values. We had the impression that we lived in a world that had it all. In essence, we didn't have anything. Now many people that have lost their jobs have the opportunity to do something new. Some people that saw their income shrinking, used their brains to see how they could find complementary income, not to be rich but to have an aside. Yes, this crisis was an opportunity. I don't say economic crisis, I say crisis. Society saw the values that it had lost [solidarity, friendship, reconnecting to nature]" (155)

6.3.4 Opportunity for creativity and imagining new futures

Several interviewees mentioned that a turn to land-based activities gave them "prospect". The ability to imagine and plan for a better future. Self-efficacy, or the belief that actions can effect change, is at the core of agency, and most of the interviewees conveyed that their actions were not done only in response to the shock of the crisis but to go beyond it by planning for a better future and more meaningful lives for themselves and their children. For most of the interviewees, the crisis spurred a deeper thinking about the meaning of life and the attainment of fulfilling desires and

needs. Despite incredibly difficult conditions, households mentioned that their transition phase was also a creative moment. As eloquently stated by one interviewee: *“Now with the crisis a lot of people have started to exercise something basic that they didn’t use as much before: their minds and their imaginations. Previously people were living in rhythms that don’t leave time for reflection, in a robotic everyday life. Now people have to sit down and imagine and think “what can I do?”, and that spark of imagination and use of the mind is very important”* (114). Creativity here is inherently related to internal agency, and the recognition of new capacities through the exercise of imagination.

6.4 Interplay between internal and external agency

6.4.1 Engagement in collective action

As noted by Katerina P. earlier, the crisis is a way to “start thinking”. Such wake up calls are often necessary for the actualization of personal transformations, and to potentially bolster collective action as discussed below by another person:

“The crisis acted as a catalyzer affecting some people positively and others negatively. In any case, it has accelerated processes of change. People that were undecided, or had a very small interest or that considered such a step [turning to land] in the realm of a faraway fantasy, have now been hit in the face and are now exploring the situation better: thinking differently and about potential collective solutions. They feel the need – as I do – to defend their dignity with their life, their daily action and to keep a responsible stance when confronted with social, economic, environmental changes.” (165)

Given the failure of the state to provide support and the deep restructuring of social and economic relations, many households felt that the only solution was to take initiative and self-organize, and going back to the land epitomized this solution. As a result several new collective initiatives emerged to try and fill in the gap left by the collapse of the welfare state, including as noted below, self-organized initiatives to manage health, food, education and other services:

“As the crisis – this crisis of values that we are living in – deepens, more and more people are trying to self-organize and self-manage their health, their food, their education; services that they were not worrying about previously because they were provided by the State. [...] So, I consider that the crisis in that regard was good for people. People have started to realize that they can manage some things on their own. And that’s what we’ve seen in the past years in Greece with the emergence of a multiplicity of initiatives that deal with health, self-organized clinics, schools, self-management of food etc. (175)

This questioning of social values, norms and relations was also associated with key collective events that led to the increasing politicization of several interviewees. For instance, the 2011 mass and multi-month occupation of Athens' main square (Syndagma)⁴ was referred to by several households as the source of their political awakening and a strong motivator for their turn back to the land. Thomas R. explained how engaging in the square movement led to his personal transformation, and helped him decide to become a farmer:

“Since 2010 when we entered into the first memorandum, I was constantly in various movements in [Syndagma] square. There I started waking up from the lethargy that I was living in. Because when you have a good work and good money, some things don't preoccupy you much. [In Syndagma] I realized that if we wanted something serious – initially I believed in revolution but saw that it couldn't be implemented – we needed serious solutions. And they must be realized now. The most important thing was to get to the food chain from the start: agricultural production.”(15)

Participation in collective action amplified individual processes of personal transformation, and vice-versa. Meeting other people that shared similar ideas and concerns gave people strength, because they realized they weren't alone. In the case of Syndagma square, people mentioned that the square was where they first engaged in self-organization given that people had to self-manage a health clinic, food, lodging and so on for a large group of people. Thomas R. left the square with a decision to start farming and he also ended up co-founding a self-organized social grocery store in Athens which allowed him to bring farming goods, including his own, closer to urban residents. The example of Thomas R. is not singular. 49% of the households interviewed joined or co-founded a knowledge or sales-oriented self-organized cooperatives or collectives during the crisis. Knowledge self-organized groups aimed to increase the exchange of knowledge and experiences while sales oriented cooperatives aimed to facilitate market or barter exchanges of goods. Their involvement was not always constant and some collective efforts didn't last long but this finding

⁴ Syndagma square is the square in front of the Greek parliament where many protests occur. From May to August 2011, anti-austerity groups occupied Syndagma square to protest austerity measures and the rapid deterioration of economic and social conditions. The occupation of the square was inspired by broader anti-austerity movements such as the indignados in Spain, Indignés in France and the Occupy Movement in North America. Time at the square was transformative for many because it allowed groups that had shared interest and ideas to meet (this was noted by my interviewees). It was also transformative because people re-enacted at a smaller scale principles of self-organization. During the 4 month occupation people self-organized a clinic, food provisioning, and all aspects of the daily life in the square, many went on to build and join self-organized groups later on (Arampatzi 2017).

provides evidence of the relation between personal transformation (internal agency) and efforts towards collective action (external agency). The importance of collective action is also evident based on the fact that 25% of households accessed land through collective land arrangements (i.e., eco-communities, self-managed farms and gardens). Sustained engagement in collective action was more difficult once people left for rural areas. Yet, many still viewed going back to the land as being transformative and a political action regardless as to whether it was linked to collective action.

6.4.2 The transformation potential of going back to the land

Going back-to-land was thus often framed as a profoundly transformative and political action. First, because it enabled households to be less dependent on the dominant economic system that was identified as the source of their woes. This is eloquently expressed in the following quote: *“I realized that sustainability and self-sufficiency have to do with being able to satisfy your needs in a small, closed system, local... and these concepts have great political significance, and are more revolutionary than many other revolutionary actions. Revolutionary in the broader sense as they undermine the foundations of the existing economic system. Before I saw the revolutionary potential of these concepts – sustainability, self-sufficiency and self-organization – but I hadn’t experienced them [yet]” (I28)*. Second, because by doing so people became engaged in new types of social and ecological relationships, which they viewed as transformative. There was a distinct difference between those that believed that profound transformative change comes from within, by changing oneself, and those that believed that change comes by actively changing others. For the first, societal transformation is deeply linked to internal agency and the ability of people to reassess their needs, dreams and desires to actualize a personal transformation. The following quotes illustrate this view that emphasizes that “personal revolution” (in people’s own words) comes first from within:

“For me the crisis is that we have lost our contact with nature. We think that life is in the city, work, 8 hours long, 5 days a week, holidays 15 days a week... consumerism... and so on. I started realizing that if we wanted to escape from that type of crisis we have to change our way of life. It’s a matter of starting your own personal revolution, to do your personal change and hope that you will provide a good example to attract others in such a change.”(I76)

“I don’t believe that going to the square [protests] is a solution. The solution is to change your life alone, and whoever wants to do the same can do it.” (122)

“The crisis was a way to start thinking. [...] I do see it (back to land) as a form of resistance, as strange as it may seem. But I believe that revolutions and resistances do not come from the mass, they come from what each of us do for themselves and how they show it to others” (166)

As evidenced by the quotes above, those that strongly believed that change comes based on profoundly personal transformations viewed societal transformation as a contagion: people would be inspired to follow if that change fit their own needs and aspirations. In contrast, others among people interviewed believed that transformative change is primarily linked to collective action. These people focused on the need to organize and network, to exercise external agency. In that view, while individual transformation is key, there comes a moment when wider connection, or scaling up, must occur for societal change to come about, as discussed in the quote below:

“Small islands or cells of an alternative world are created that satisfy some of the needs that the system does not fulfill. And that is a very important thing, because when you create these islands and if these islands connect to one another then you have created a different world. That’s how you reach a large mass of people: each person choose an island and eventually maybe these islands network to form a new world. I think that we are at that embryonic stage where these islands – these spaces – of an alternative world are being created. It’s a matter of choice for everyone what will happen next” (128)

7. Conclusion

7.1 Why were people going back to the land?

The crisis was a “game changer” that changed “dominant understanding [...] of how society is organized and defined” (Loorbach et al. 2016:19), leading to profound personal transformations, which explain why people chose to go back to the land. About 50 percent of people went back to the land to reconnect to nature and in search of a good life, and to reduce the feelings of risk and insecurity that the crisis generated notably by enhancing one’s self-sufficiency (i.e. learning how to grow food)) and creating their own jobs. People saw in the turn back to the land the means to do something to reduce their vulnerability but also as a way to give meaning to their lives. Furthermore a third of people associated going back to the land as an act of resistance, characterizing it as a political action. Motivations were influenced by people’s material capacities (particularly land and

knowledge)⁵. Those that had professional farmers in their background were more likely to farming as an economic opportunity, others were more interested in non-material dimensions⁶. Those with little prior land experience were most likely to view going back to the land as a political action, in parts because they felt extremely vulnerable and growing food was identified as a means to enhance their capacity to deal with the crisis. Indeed, learning how to grow food gave them agency, people mentioned feeling stronger and more confident (internal agency). Those with little prior land experience were also more likely access land through collective arrangements, which means that they had to exercise external agency.

7.2 Agency and personal transformation

The crisis led to people mobilizing their agency to both navigate the effects of the crisis and to open up new opportunities, all of which led to individual transformations in people's values, sense-making and actions as expressed by the decision to change their lives and go back to the land. Many people emphasized that going back to the land was a choice. In doing so, they were asserting their agency. Rather than being victims of the crisis, they chose to see themselves as agents capable of taking control of their own lives. Many even related the crisis to an opportunity. First because the crisis catalyzed latent but inactive desires to live differently. Many people had vague dreams of reconnecting to nature and becoming farmers but hadn't done so before the crisis. Second because the crisis changed the life goals and values of people that weren't interested in going back to the land at all before. The crisis changed markers of success and prestige, such as professional advancement and making 'lots of money', which were now seen as unattainable and meaningless. Third, the crisis provided opportunity for people to exercise their creativity and imagine new futures. By upending prior values and norms, the crisis also opened up opportunities for new expressions of agency: to imagine new ways of living, working, and engaging with land and nature.

⁵ Chapter III further explains what assets people mobilize and the strategies they employ in order to move back to the land.

⁶ Chapter IV focuses on what reconnecting to nature means for people, highlighting material and non-material dimensions of environment-related safety nets.

The crisis facilitated these personal transformations by changing the risk and opportunity context. Due to the worsening of social and economic conditions, going back to the land was no longer seen societally as something crazy, but rather as a good idea. People also had much less to lose: they often no longer had jobs and if they had a source of unemployment, conditions were so difficult that the situation was untenable. The change in social discourse over the value of farming and life in rural areas also meant that people were better able to negotiate their livelihood transformation with their families and broader social circle. That means that they were better able to gain support, economic and otherwise, which helped them in their efforts to go back to the land.

Lastly, participation in collective action, such as protests or self-organized initiatives, was both a reason and an outcome of personal transformations. Engagement in collective action amplified people's self-efficacy, people felt they were not alone and that change was possible as a result. These engagements in collective action were also spurred however by initial personal transformations that made people realize that they could do something and that action was needed. As a result of this interplay between personal transformations and collective action, 49% of the households joined or co-founded self-organized collectives or cooperatives during the crisis, most of which were related to their efforts to go back to the land (knowledge or sale-related self-organized initiatives).

7.3 Importance for sustainable social-ecological transformations

These personal transformations are very important for potential broader sustainability-oriented social-ecological transformations for two reasons. First, these personal transformations involved changes in beliefs, values as well as practical actions that centered on efforts to build a good life in reconnection with nature. Ultimately people's values and perceptions influence what is considered possible and desirable, and thus changes in beliefs and values that are compatible with a sustainable world are crucial (O'Brien and Sygna 2013; Abson et al. 2017). Second, going back to the land provides sustainability experiments, which may be essential to steer the overall system towards sustainability (Bennett et al. 2016). This is particularly the case because the crisis spurred

new expressions of agency, leading people to imagine new futures and ways to engage with nature and with each other; which in turn may lead to increased innovation, experimentation and actions towards sustainability. Broader transformations require these innovations and experimentations which rely on people's "capacity to create untried beginnings from which to evolve a fundamentally new way of living when existing ecological, economic, and social conditions make the current system untenable" (Westley et al. 2011: 763).

It remains unknown however as to whether these back to land efforts will sufficiently scale up to change the overall social-ecological system. Many people framed their turn back to the land as a political action that could have far reaching impact. They differed in their views however as to how change would come about. Some viewed processes of individual transformations, driven by internal agency, as the main motor for societal transformation. This relate to broader discussions of the potential importance of uncoordinated (emergent) transformation. Others thought that societal change could only come about through collective action and the exercise of external agency, emphasizing the need for deliberate system-level transformations. Ultimately, as discussed earlier, both internal and external agency are mutually self-reinforcing, and processes of broader change will probably come about through both uncoordinated transformative actions and deliberate efforts to change parts of the broader system.

To conclude, this study highlights the complexity involved when seeking to understand transformation. Most studies focus on deliberate system-level transformations paying less attention to the processes of individual transformations. Doing so is problematic because individual transformations underpin efforts towards collective action and deliberate transformations, and also due to the potential for uncoordinated system-level transformations.

CHAPTER III. Re-connecting to the Land amidst Crisis: Mobilities, Livelihoods, and Land Management in the Greek Back-to-Land Trend

1. Introduction

The back-to-land trend in Greece whereby urban people turned to farming during the economic crisis (2008-onward) is a highly mediatized yet poorly understood phenomenon (Cockburn 2011; Babington and Papadimas 2012b, a; Donadio 2012; Stolarz 2012; Williams and Dineen 2012; O'Brien 2015; Apostolou 2017, 2018). The back-to-land trend is portrayed by the media either as a panacea or as naïve and often desperate moves to rural areas by hapless urbanites. Little is known about other forms that the back-to-land movement might take nor about what happens next. What resources did people mobilize to go back to the land, and what are outcomes for people's wellbeing and in terms of their land practices?

The study of back-to-land movements focuses on the migration to more rural locations (i.e., counter-urbanization) of urbanites interested in reconnecting to nature (Gould 2005b). As such, back-to-land case studies provide interesting, concrete examples of efforts by urbanites to reconnect to nature to make a new living in rural areas. Yet, despite a considerable literature highlighting the migration processes of urban populations to rural areas (Champion 2001; Halfacree 2001; Mitchell 2004; Halfacree 2007), surprisingly few studies examine what people actually do to go back to the land, what do they do once on the land and how this change relates to their wellbeing (but see Jacob (1997) for the US).

This article fills this gap by providing an in-depth assessment of the resources that Greek back-to-landers mobilized to go back to the land during the crisis and the outcomes observed in terms of material wellbeing and land management. Given the importance of migration processes in the back-to-land literature and the surprising finding while doing this research that not all back-to-landers had moved to rural areas, this article compares, using logistic models, the strategies employed by households that managed rural lands while still residing in rural areas to those that had moved to rural areas. The article is based on the quantitative and qualitative analysis of 76 interviews of

Greek back-to-landers that turned to land-based activities after 2008. This article draws upon the counter-urbanization and back-to-land literature using a livelihood lens to make three main contributions. First, this article posits that the Greek back-to-land trend needs to be approached as a livelihood transformation rather than a migration dynamic per se, which allows for a more nuanced understanding of the different forms that the back-to-land movement is taking in Greece. Second, the article provides a detailed assessment of the different assets and strategies people mobilized to go back to the land. Particular attention is paid to the ways people sought to enhance their capacities in order to go back to the land and also to the limits they experienced while doing so. Third, this article relates different types of back-to-land strategies to people's (material) wellbeing and land management practices. This research shows that the back-to-land trends is not homogenous and involves different yet related livelihood transformations, each of which requires different types of support to ensure their viability and longer term sustainability.

2. Revisiting counter-urbanization and back-to-land trends through a livelihood 'lens'

1.1. The livelihood lens

The livelihood approach, developed to highlight the multidimensional dimensions of vulnerability/poverty, provides a useful analytical framework to understand adaptation and transformation processes at the individual, household, or community level (Chambers and Conway 1992; Reid and Vogel 2006; Reed et al. 2013). In this approach, human wellbeing is framed in terms of the capabilities, assets, and activities that sustain and give meaning to a person's life (Chambers and Conway 1992; Scoones 1998; Bebbington 1999; Carney et al. 1999; Robeyns 2005). A livelihood is considered sustainable when it can "cope with and recover from stresses and shocks and maintain and enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Carney et al. 1999: 8). In short, a livelihood is considered sustainable when it is adaptable and resilient.

In the livelihood approach, assets are commonly characterized in terms of different capitals: natural, social, human, physical, and financial. Combined, these capitals constitute the livelihood portfolio

of each person or household, providing a measure of capacity. The livelihood literature has paid considerable attention to ways that people mobilize existing resources, interacting with institutional, social and environmental contexts, in order to sustain their livelihood, and associated qualities important to them such as sense of place or identity (Eakin et al. 2012; Marshall et al. 2012). Livelihood studies tend to focus on places where people had long-standing relationships to place and a known set of assets available. Less is known about how people access new types of capital, how different capitals may interact and how capacity be enhanced (Berman et al. 2012; Eakin et al. 2014). Intangible assets (e.g., sense of place, feeling of kinship) are notoriously hard to measure. Tangible assets (e.g., land, income) can be measured, but it is often hard to predict whether and how the capacity they generate is translated into adaption or transformation, leading Engle (2011) to refer to the latent nature of capacity. Natural capital, in particular, is often seen as somewhat immutable (yet subject to loss) and essential for capacity building (Polishchuk and Rauschmayer 2012; Reed et al. 2013). Extensive research shows that access to natural capital is typically unequal among households (Leach et al. 1999; Ribot and Peluso 2003; Daw et al. 2011). Less is known as to how human agency in combination with other assets (i.e., knowledge, financial capital, social relations) may create 'new' natural capital (Berbés-Blázquez et al. 2017) and potentially expand adaptive capacity. Access to land is not sufficient, the back to land livelihood transformation also requires agency to imagine and act upon new possibilities (see chapter II) as well as the acquisition of new knowledge, old and new social relations, and other capitals (e.g., financial support, farm equipment).

1.2 Re-examining counter-urbanization and back-to-land trends

Counter-urbanization refers to “migration processes which bring people into areas which they consider by-and-large to be more 'rural' than those they have moved from” (Halfacree 2001: 161).⁷

Counter-urbanization studies, stemming from rural geography and sociology, focus on

⁷ 'More rural' infers a process of demographic deconcentration from an urban area to a more rural area (Mitchell 2004). These more rural areas include peri-urban or intermediary areas (such as smaller provincial towns) as well as more remote rural areas.

assessments of demographic changes (Berry 1976 for the US; Champion 1989 for the UK; Duquenne 2014; Anastasiou and Duquenne 2015 for Greece) as well as rich accounts of the motives and the social transformations of ruralities resulting from these migration processes (Rivera Escribano and Mormont 2007).⁸

Back-to-land movements integrate studies of migration to a more rural location – counter-urbanization – to the desire to reconnect more fully to land and nature, often through a turn to agricultural production (Halfacree 2007). Research on back-to-land movements – also called neoruralism, neoagrarianism, homesteading, voluntary simplicity or “off-the grid” – highlights that there were periodically significant movements of people out of cities into rural areas interested in reconnecting to land-based livelihoods, especially in times of societal upheaval, such as warfare, economic crises, and social revolutions (Fielding 1982; Léger 1982; Jacob 1997; Seeth et al. 1998; Altieri et al. 1999; Paniagua 2002; Halfacree 2006, 2007, 2008; Buchmann 2009; Vannini and Taggart 2013; Calvário and Otero 2014). Gould (2005b) reports that, in the United States, an estimated million people migrated to rural and peri-urban areas in the “social revolution” of the 1960-70s, and about 50 million expressed interests in simpler lifestyles. Historically, rural areas that host back-to-landers often also promote alternative food networks (Mamdy and Roussel 2001; Halfacree 2006, 2007; Papy et al. 2012; Wilbur 2014). Many of these back to the land experiments were fertile innovation incubators for ideas and practices that are nowadays important for sustainability: for example, organic farming and other alternative food systems, transition towns, low-carbon economies, and degrowth movement (Jacob 1997; Laschewski et al. 2002; Gould 2005a; Brown 2011; Wilbur 2013) . Yet, despite considerable research regarding these movements, few studies focus on the livelihood strategies and capacities, including different types

⁸ Ruralities refer to the idea in rural sociology and rural geography that rural areas are not homogeneous spaces but rather complex mosaics characterized by different social and ecological processes (Cloke 2006). New notions of rurality challenges the idea that of rural areas are necessarily ‘natural’, ‘agricultural’, productive or post productive (Hadjimichalis 2003).

of migrations deployed by various people to turn to the land (see, however, Jacob (1997) for the US).

In the media, the back-to-land trend tends to be either glorified as the panacea for the sustainable transformation of farming systems or discounted as romanticized dreams of desperate and naïve urbanites (Cockburn 2011; Babington and Papadimas 2012a, b; Donadio 2012; Norris 2013; O'Brien 2015; Apostolou 2018). While the former clearly ignores the challenges involved for new entrants into farming and in shifting food systems towards sustainability more generally, the latter discounts the potentially transformative outcomes of back-to-land efforts (Calvario 2017). As noted by (Halfacree 2008: 479) counter-urbanizers are too often portrayed as “sophisticated middle class urbanites moving to start a new life in an idyllic rural setting” whose actions lead to rural gentrification and conflicts with locals (Guimond and Simard 2010; Phillips 2010; Abrams et al. 2012; Galani-Moutafi 2013; Cortes-Vazquez 2014; Mamonova and Sutherland 2015). Yet, counter-urbanizers are more complex than this portrayal indicates.

First, the ‘rural idyll’ narrative mostly focuses on the search for better quality of life and reconnection to nature (Champion 2001; Roy et al. 2005), underplaying the importance of other intertwined factors, such as the search for employment or the appeal of rural entrepreneurship (Paniagua 2002; Camarero and Oliva 2008; Akgün et al. 2011; Halfacree and Rivera 2012).⁹ Other contextual factors also play important roles. For example, urbanites are attracted to more rural areas, especially in times of crisis, by lower costs of living (e.g., cheaper housing and food) and the perception of greater opportunity, principally in the primary sector (Escribano (2007) for Spain; Šimon (2014) for the Czech Republic; for Greece, see: Zografakis and Karanikolas (2012); Kasimis and Papadopoulos (2013); Gkartzios (2013); Remoundou et al. (2016), Anthopoulou et al. (2017); Gkartzios et al. (2017)). Second, the ‘rural idyll’ narrative discounts what people actually do on the

⁹ See Chapter II which highlights the fact that people hold and act upon multiple motivations. Additionally, reconnecting to nature and a good quality of life do not preclude but rather deeply include the importance of having a meaningful livelihood.

land as trivial, insufficiently providing detailed or nuanced understandings of different back-to-land processes and missing, as noted by Cooke and Lane (2015), the opportunity to look at new and differentiated human-environment relations. For instance, a study of the environmental knowledge and practices of newcomer smallholders in England finds that, despite a policy view to the contrary, newcomers were quite informed but limited by time and money barriers to make land improvements (Morris 2010). Similarly, Munton et al. (1989) found little difference in agricultural practices between full-time smallholders and other types, including part-time and hobby farmers. Yet hobby and part-time farmers receive minimal policy attention despite their important rural landscape management role. Third, social relations between newcomers and locals are not axiomatically antagonistic. The entrance of newcomers into rural areas can lead to new alliances and collaborations, for instance to protect green commons (Fortmann and Kusel 1990; Jones et al. 2003). Social integration may be facilitated if there are pre-existing family ties linking urban and rural households, which in turn supports the back-to-land trend due to the sharing of knowledge and resources between newcomers and locals (Mamdy and Roussel 2001; Laoire 2007; Goussios 2010; Kasimis and Papadopoulos 2013), but do not preclude the difficulties of (re)integrating into rural spaces socially and economically, especially in a context of crisis (for Greece see: Petrou and Koutsou (2014); Anthopoulou et al. (2017)). Fourth, counter-urbanization and back-to-land studies tend to have a sedentarist bias that portrays migration as an exceptional and singular event (Halfacree and Rivera 2012). Doing so, undermines our understanding of other urban-rural linkages that may be associated with going back to the land.

3. Methods

3.1 Case study

The Greek economic crisis (2008-onwards) and associated austerity measures led to significant social impacts. General unemployment rose from 7.5% in October 2008 to 26% in December 2014 (the highest in Europe). Wage income decreased by a third from 2008-2012 (Giannitsis and Zografakis 2015), while household consumption fell by 15% in the 2008-2011 time period

(Gerstberger and Yaneva 2013). The effects of the crisis were particularly felt in the capital, Athens, which experienced a 51% increase in poverty levels (Skordili 2013).

Only the primary sector of the Greek economy experienced an increase in value during the crisis (~20%) (PASEGES 2011). Employment in that sector increased, rising from 11.3% in 2008 to ~13.5% in 2013-2014 (~78,000 people) (World Bank Data 2017).¹⁰ These official statistics, however, only refer to people who registered as professional farmers, failing to account for the harder to track informal agricultural economy or those that are still in transition. In March 2012, the ministry of agriculture randomly polled 1,286 people in the two largest cities (Athens and Thessaloniki), finding that seven out of ten people actively planned to go to the countryside (i.e., corresponding to about 1.5 million people) (KAPA research 2012). While there is no evidence that 1.5 million people have left for the countryside, nonetheless an emerging counter-urbanization trend was observed in Greece during the crisis (Remoundou et al. 2016; Anthopoulou et al. 2017; Gkartzios et al. 2017).¹¹ Additionally, there is a renewed interest for food production in both rural and urban areas (Kasimis et al. 2013; Partalidou and Anthopoulou 2016). As discussed previously, some Greek scholars argue that Greek counter-urbanization is different from the heavily studied Anglo-Saxon model where the move to the countryside involves middle-class, often pre-retirement, people (i.e., gentrification of rural areas) (Gkartzios et al. 2013; Gkartzios and Scott 2015; Remoundou et al. 2016; Gkartzios et al. 2017). The authors argue that rather than being motivated by the appeal of rural areas (i.e., rural idyll) Greek urbanites are attracted by rural areas for economic reasons (i.e., lower costs of living, opportunity for jobs) that are linked to the crisis. This view is in part supported by other research (Zografakis and Karanikolas 2012; Kasimis and

¹⁰ The percentage dropped to 12.9% in 2015 was probably due to the retirement of old farmers and the emigration of a significant number of the active population abroad. For men, the percent employment in agriculture increased from 10.83% of total male employment in 2008 to 13.98% in 2014 and 13.28% in 2015 (World Bank Data).

¹¹ Estimating the actual number of people that have left urban areas, and/or started to engage in land-based livelihoods is extremely difficult given the fact that many engage in the informal economy (not always opting to register as professional farmers or declaring their agricultural sources of income). Many are also in a transition phase not having yet the requirement to be listed as farmers.

Papadopoulos 2013; Kasimis et al. 2013; Daudon and Vergos 2015; Papadopoulos 2015) that shows that rural areas, and farming, are now seen as a refuge in times of crisis.

The refuge potential of Greek rural areas might be related to the fact that rural and urban areas never were entirely disconnected in Greece due to a late urbanization process compared to other European countries and to the maintenance of small-scale family farming (Duquenne 2008; Zacoboulou et al. 2008; Goussios 2010; Kasimis and Papadopoulos 2013; Petrou and Koutsou 2014). While urban-rural ties were pre-existing the crisis, significant moves out of the city of people with no family ties were observed during the crisis (Anastasiou and Duquenne 2015; Gkartzios et al. 2017).

This renewed interest in the primary sector occurs within a broader trend of people moving away from land-based activities and rural areas, which characterizes most developed countries that have experienced a demographic transition (Cumming et al. 2014). Greece had about 15% of its population employed in the primary economic sector in 2008 as opposed to 5% in the rest of Europe but the preponderance of Greek farmers are older people (>65 years old) (PASEGES 2011). The potential addition of new and younger people in the primary sector is significant for employment but also for rural development and the persistence of farming landscapes. These facets explain why the back-to-land movement plays such an important role in national policy debates.

2.2 Data and analysis

This analysis is based on in-person, semi-structured interviews of 76 households that turned to land-based activities post-crisis (after 2008) in various regions of Greece. Most of the interviews were conducted in 2014, with a few follow up interviews conducted in 2015. These households were residing – and some still do – in urban areas before the crisis, and were not substantially involved in land activities previously. Given that there is no clear and easily bounded sample universe from which a random sample can be drawn, snowball sampling was employed for the selection of households. Snowball sampling methodologies are challenged by a selection bias that

might lead to missing potentially important isolates. To minimize this bias, initial interviewees were drawn from diverse and unrelated sources, including referrals from academics, civil society members, business and government organizations, from people that started farming themselves as well as identities from newspaper, blogposts and social media posts that discussed back-to-land initiatives. The interviews did not focus on a specific region of Greece to capture the diversity of back-to-land processes.

The semi-structured interviews integrated a predetermined and standardized list of questions aiming to generate quantitative data to open-ended questions focused on flexible thematic content and allowing interviewees to express themselves more freely (Hay 2005: 81). I collected information regarding household demographics, livelihood activities and assets (pre- and post-economic crisis), land access, the reasons behind their decision to start farming, the ways that they perceive, relate to, and manage different components of their land (i.e., soil, water, farming techniques adopted, how is knowledge acquired, market strategies), and the livelihood and land outcomes of these transformations.

For this analysis, households were stratified based on their adopted migration strategy and their back-to-land typology (see Table 3.1). In the first stratification, the group “urban” refers to households that manage periurban and rural fields while residing in an urban area; the other group “rural” represents households that left large urban centers for more rural areas – the classic back-to-landers (Fig. 3.1). The second stratification builds a back to land typology where the first type, “entrepreneur”, refers to households that focus most of their time to create a farm business and often derive most of their income from land-based activities. The second type, “complementary”, refers to households for whom land provides an additional source of income and where the land manager only devotes part of his or her time to farming. The third type, “self-consumption”, refers to households that produce or gather food for their own families or friends, without engaging in economic transactions.

Table 3.1 Household stratifications by migration strategy and back to land typology

N= 76	Entrepreneur	Complementary	Self-consumption	Total
Manage lands from urban areas	15	16	11	42
Moved to rural areas	19	4	11	34
Total	34	20	22	76

A logistic (model 1) and multinomial logistic model (model 2) were developed in STATA 13.1 to examine what factors influenced the interviewees' decision to manage land from urban areas versus moving away (model 1), and understand what best explained the back-to-land typologies observed (model 2). For all models, independent variables were not highly correlated (≤ 0.5) and the variance inflation factors of all included explanatory variables did not exceed 1.5, which indicates that multicollinearity was not a serious concern in the estimated models (Chatterjee and Price 1991). For all models, the likelihood ratio chi-square had a p value < 0.05 , indicating that the model fit significantly better than a null model. Pseudo R^2 in logistic regressions do not provide the same meaning of variance as in OLS regressions, and should therefore be understood cautiously (Menard 2000; Peng et al. 2002). As such, I also assessed other measures of goodness of fit, including other R^2 indices and percent of correct classification (computed in SPSS 25). The Hosmer-Lemeshow goodness-of-fit tests were not significant for the logistic and multinomial logistic regressions, implying good model fit. Additionally, Pearson and Deviance goodness-of-fit tests were found to be insignificant ($p > 0.05$) for the multinomial logistic mode, suggesting that the model fits the data well (Hosmer and Lemeshow 2000; Agresti 2013; Long and Freese 2014). The analysis of marginal effects, which is used to assess how changes in one independent variable affected the probability of changes in a given outcome, was undertaken using Stata 13.1. Coefficients in logistic regressions only show whether a given explanatory variable influences positively or negatively a given outcome and are notoriously hard to interpret. Marginal effects are estimates of the change in an outcome for the change in one independent variable, holding all other variables constant (Long and Freese 2014: 97).

I subsequently tested whether households' livelihood and land management outcomes (i.e., income, self-sufficiency, types of crop managed and land investments) significantly differ between

those that stayed in urban areas and manage land from afar (urban group) and those that moved to a more rural area (rural group), as well as based on whether they produce food for self-consumption (self-consumption group, n=22) or for market sale (“market-oriented group includes complementary and entrepreneur group, n=54). Statistical difference was estimated in SPSS 25 using chi-squared tests and Fisher’s exact test for categorical variables and t-tests, and Wilcoxon rank sum and Kruskal-Wallis tests for continuous variables. Quantitative results are complemented by anonymized illustrative quotes from the interviews, which were translated from Greek by the main investigator.

4. Results and discussion

4.1 Should I stay or should I go? Factors influencing migration strategies

Interviews revealed that many households (55%) managed rural activities while maintaining urban residency (see Fig 3.1). This result is surprising given that most back to land narratives focus on the experience of people moving and living in rural areas (Cockburn 2011; Babington and Papadimas 2012b; Donadio 2012; Norris 2013). What explains why households decided to manage lands from afar rather than move to a rural settings and be closer to their fields?

The logistic regression in Table 3.1 assesses what determinants explain managing land from an urban area versus moving to a rural area. Marginal effects show that having access to uncultivated lands and inherited farm physical capital were the most important determinants, significantly increasing the probability of moving to a rural area by 32 and 41 percentage points, respectively. In lesser order of magnitude, each additional hour needed to access field locations and the amount of land potentially available also increased the probability of moving to a rural area by about 7 and 2 percentage points. Additional years of formal education and being unemployed prior to the livelihood shift decreased the probability of moving to a rural area by 5 and 26 percentage points, respectively. Having productive tree crops or a house to stay in close to field locations did not significantly influence the probabilities of any outcome.

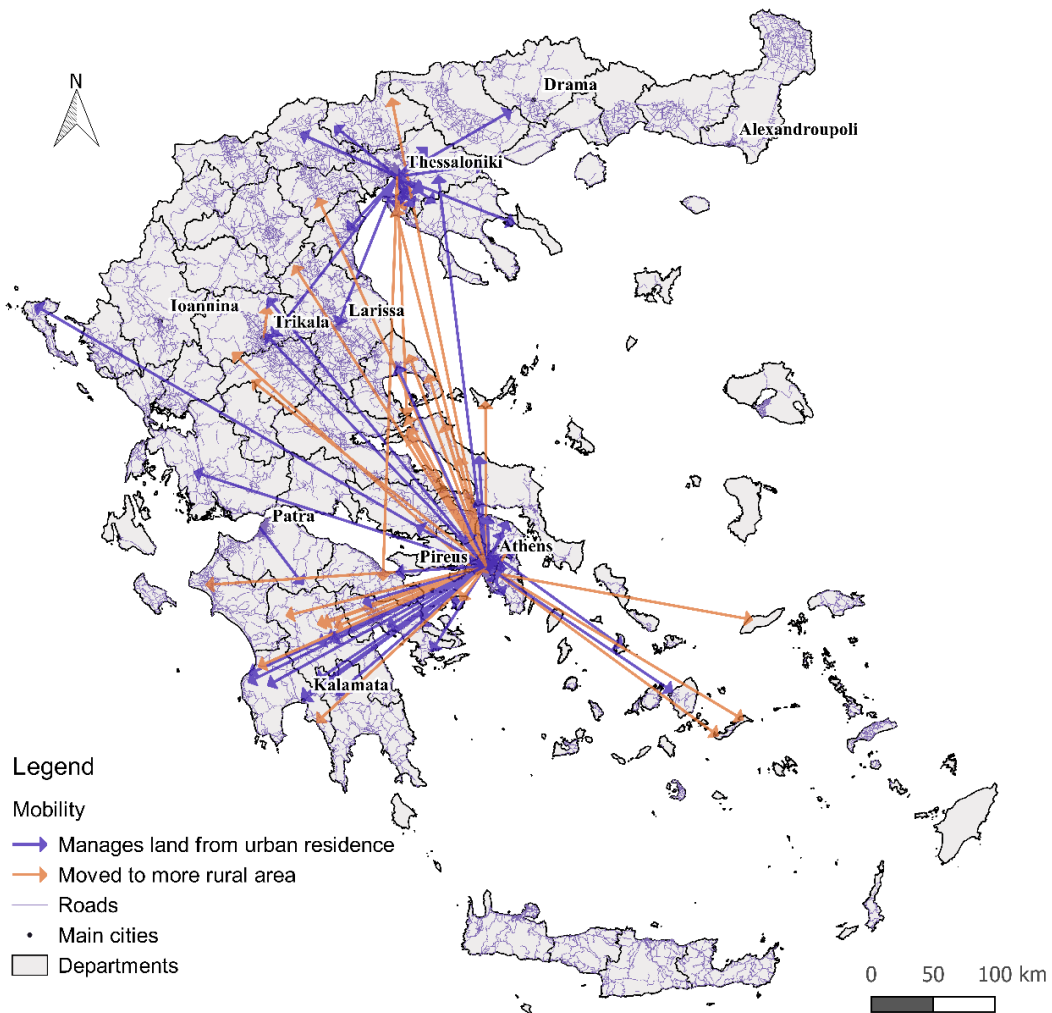


Figure 3.1 Map of the different mobilities adopted to manage rural lands. Arrows represent home residences to current field locations. Some households left urban areas for more rural areas (orange arrows, n=34), while others continue to live in urban areas while managing lands in more rural areas (purple arrows, n= 42).

Having inherited farm physical capital, which is a variable that is significantly correlated to having active farmers in the family (chi-square 23.56, $p=0.00$), emerged as a particularly important enabler of a move out of urban areas. Similarly, each additional hectare of land available increased the probability that a household opted to move to a rural area. Surprisingly, having access to a rural house did not influence the probability of the move, in contrast to qualitative findings of rural housing effects by Gkartzios (2013).

N=76	Model 1 (logistic) Non-urban vs. urban (base outcome)	
	Coefficients (SE)	AME
Human capital		
Education (years)	-0.34 (0.15)**	-0.052***
Physical & Social capital		
Inherited farm K	2.59 (1.13)**	0.405***
Rural housing (yes/no)	-0.45 (0.78)	-0.068
Financial capital		
Was unemployed (yes/no)	-1.67 (0.82)**	-0.262**
Time to field (hours)	0.45 (0.19)**	0.071***
Natural capital		
Land available (in ha)	0.11 (0.06)*	0.018*
Uncultivated lands (yes/no)	2.26 (0.85)***	0.324***
Productive trees	0.66 (0.67)	0.104
Constant	2.14 (2.33)	0.459
Goodness of fit	Likelihood ratio χ^2 (16) = 31.65; Prob.> χ^2 = 0.0001; McFadden pseudo R ² 0.31. Other goodness of fit measures: Cox-Snell pseudo R ² 0.348, Nagelkerke pseudo R ² 0.465, Area under ROC = 0.85, correctly classified 77.03%	

Table 3.2 what determines managing lands from an urban area vs. moving to more rural area? Model 1: Logistic regression assessing factors influencing moving to a more rural area (“non-urban” integrates intermediate and rural residences n= 34) vs. staying in an urban area (n=42). AME refers to average marginal effects, showing how the dependent variable is predicted to change as each of the independent variables change (from 0 to 1 for categorical variables and for one unit increase for continuous variables), all others equal. *, ** and *** indicate statistically significant associations at 10%, 5% and 1% level, respectively.

Variable	Description	Mean	SD	Min	Max
Education	Number of years of formal education, whereby 12 years = finished high school	15.65	2.397	10	22
Inherited farm K	Farm machinery and infrastructure – such as a tractor or an (old) greenhouse – that land managers have access to. This variable is correlated with households that had parents or grandparents that were active farmers at some point in their lives & total amount of land available	0.16	0.367	0	1
Rural housing	Land manager(s) that own or have access to housing near their fields prior to their move (categorical variable).	0.57	0.499	0	1
Land available	Land that a household had access to prior to back-to-land transformation (in hectares) either through family networks (64%), collectives/groups (25%), bought or rented (11%)	3.39	5.78	0	38.05
Was unemployed	Land manager was unemployed prior to livelihood shift (categorical variable)	0.30	0.46	0	1
Uncultivated lands	Land plots were not cultivated (for more than 15 years) prior to the livelihood shift (categorical variable)	0.68	0.468	0	1
Productive Trees	Household had access to mature tree crops (olive, fruit and nut bearing) prior to livelihood shift (categorical variable)	0.51	0.5	0	1
Time to field	Time needed for the household to access his/her fields (in hours) prior to a residence change. Time rather than distance was provided given that some households needed to take a boat or ferry or some didn't have a car and used public transportation.	2.5	2.19	0	10

Table 3.3 Independent variables for model 1

Having uncultivated land was positively associated with moving to rural areas. Managing those lands requires additional work and attention that may make it more difficult to manage lands from afar. Rather than an enabler per se, having uncultivated lands may be a factor explaining why some households needed to move closer to their fields if they were to make transitioning to land-based livelihoods possible. Similarly, having fields that take a long time to access from the residence increased the probability of moving to a rural area. While I did find that some households go great distances (>4 hours) to manage lands from their urban residence, 71% of households managing land from urban areas were within 2.5 hours (one-way) distance to their fields.

4.2 Factors explaining the different types of back-to-land transformations observed

Reconnecting to land-based livelihoods required capacity to do so, which entailed favorable preconditions, such as knowledge, resources (i.e., land, equipment, financial support), and networks that were not always present. As illustrated in Figure 2, the different back-to-land groups did not have the same capacity (represented here by their asset portfolio)¹². The self-consumption-oriented group had the lowest capacity: little prior (childhood) land experience, low income and high unemployment, and less access to land through family networks. Indeed, the self-consumption group, whether in urban or rural areas, relied primarily (>60%) on land that was accessed through collective arrangements, which often takes more time and effort to gain access to¹³. Households not only need to have generic capacities – be young enough to be able to work the land, have some savings or support to live while changing livelihoods, and so on – but had to acquire specific capacities linked to the new land-based livelihoods in which they were engaging. In that regard, the entrepreneur group had the highest specific capacity as illustrated by their higher levels of prior (childhood) land experience, having access to rural housing, inherited farm physical capital and land, and the presence of relatives that can help them in the process of transition. The complementary group was somewhere in between: having access to family lands, including

¹² All variables but age are initially dummy variables (0-1). Age ranges from 24 to 59 and was normalized to have 59 as 1.

¹³ Includes lands lent by people to newly formed collectives of people seeking to farm.

productive trees, but having less rural housing and limited land experience. Despite these differences, all groups had to learn experientially how to farm and deal with reintegrating into a different social-ecological context, especially when moving more permanently to rural areas.

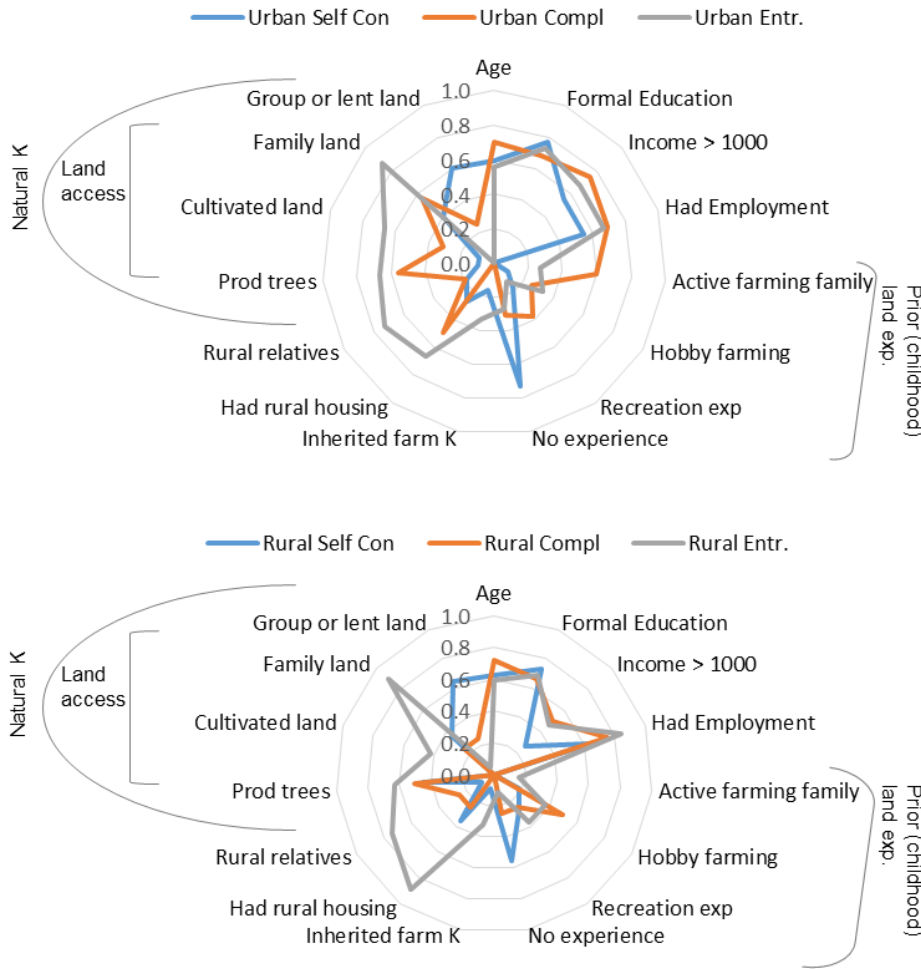


Figure 3.2 Asset portfolio of different back-to-land groups. Urban vs. rural back-to-land groups (self-con= self-consumption-oriented, compl= complementary, entr= entrepreneur). Assets normalized (0-1).

Figure 3.3 presents the average marginal effects for all independent variables in a multinomial logistic regression (Table 3.3) examining which determinants best explained belonging to the self-consumption, complementary, or entrepreneur back-to-land groups. Independent variables (Table 3.4 for detailed description) include those associated with land-related knowledge, resources, and social network as well as the mobility strategy adopted (staying in urban area vs. moving to rural

area). Results show that being part of the self-consumption group is associated with low levels of land-related experience as evidenced by the fact that having no prior (childhood) land experiences and starting with urban gardening increases the probability of belonging to this group by 26 and 18 percentage points, respectively. This group also tended to not have access to productive tree crops and was linked to having low prior income. Despite these low levels of land-based experience and resources, households in the self-consumption group were positively associated with having moved to rural areas. The complementary group, in contrast, is primarily associated with managing lands from urban areas. In contrast with the self-consumption group, they had childhood land-related experiences but did not have relatives in rural areas as the entrepreneur group did.

N=76	Model 2 (multinomial logistic)	
Explanatory variables	Entrepreneur	Complementary
	Coefficients (SE)	Coefficient (SE)
Knowledge/ Experience		
Work on his/her farm (years)	0.67** (0.33)	0.21 (0.29)
Started with urban gardening (yes/no)	-1.85 (1.19)	-1.72 (1.08)
No prior land experience (yes/no)	-2.32 (1.05)	-2.32** (0.93)
Moved to non-urban area (yes/no)	-0.64 (2.25)	-2.63** (1.21)
Resources		
Family financial help (yes/no)	2.64** (1.25)	0.13 (1.10)
Low prior income (yes/no)	-3.36*** (1.29)	-1.77 (1.07)
Had productive tree crops (yes/no)	2.25** (1.004)	2.19*** (0.93)
Social network		
Relatives in rural area (yes/no)	2.42** (1.11)	0.39 (1.1)
Constant	-1.33 (1.66)	2.07 (1.27)
Goodness of fit Likelihood ratio χ^2 (16) = 75.072; Prob.> χ^2 = 0.00; McFadden pseudo R ² 0.4616. Other goodness of fit measures: Cox-Snell pseudo R ² 0.628, Nagelkerke pseudo R ² 0.711, correctly classified 71.1%		

Table 3.4 what determines different back-to-land typologies? Model 2: Multinomial logistic regression whereby the dependent variable is back-to-land type (for self-consumption (S), complementary (C) or entrepreneur (E)). The base outcome is being a self-consumption farmer (n=22) which is compared to a those that derive income from land-based activities as a complementary source of income (n=20) or to those that seek to become farm entrepreneurs (n=34). *, ** and *** indicate statistically significant associations at 10%, 5% and 1% level, respectively.

Table 3.5 Independent variables for model 2

Variable	Description	Mean	SD	Min	Max
Work on his/her farm	Number of years that households works on specific land plot(s)	2.75	1.53	0	6
Started with urban gardening	Indicates households that starting their back-to-land shift by experimenting and growing food in urban areas (categorical variable)	0.30	0.46	0	1
No prior land experience	Households that didn't have childhood experiences seeing people farming and had very little experience in rural areas (categorical variable)	0.34	0.48	0	1
Relatives in rural area	Households that had relatives in the rural area where their land plot(s) is located (categorical variable).	0.42	0.497	0	1
Low prior income	Income prior to crisis was <1000 euros/month weighted by household size (categorical variable)	0.45	0.50	0	1
Moved to non-urban area	Households that moved out of urban areas (categorical variable)	0.45	0.50	0	1
Productive tree crops	Household had access to mature tree crops (olive, fruit and nut bearing) prior to livelihood shift (categorical variable)	0.51	0.50	0	1
Family financial help	Households that obtained financial help from their family for their turn back-to-land (categorical variable)	0.57	0.50	0	1

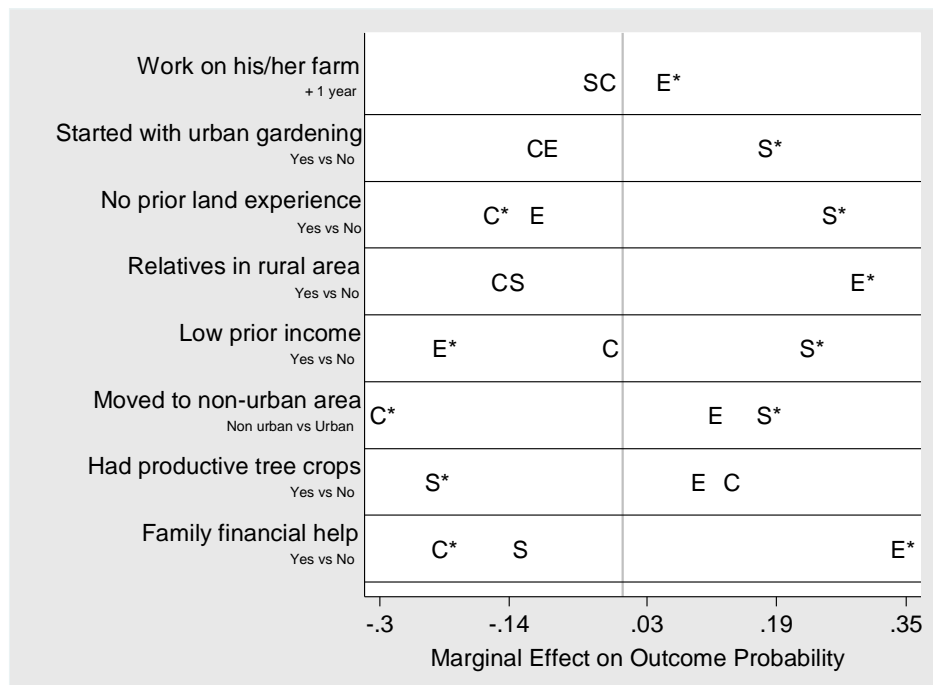


Figure 3.3 Probability of belonging to different types of back-to-land groups. Average marginal effects (AME) for all independent variables in the multinomial logistic regression (Table 3). Marginal effects are estimates of the change in an outcome for the change in one independent variable, holding all other variables constant (Long and Freese 2014: 97). Letters refer to type of back-to-land whereby E= Entrepreneur, C= Complementary and S= Self-consumption group. Note: An outcome probability of 0.2 means an increase probability of 20 percentage points. * refers to significance at 10% level.

Having relatives in rural areas increased the probability of belonging to the entrepreneur group by 30 percentage points. This group exhibited the strongest pre-existing ties to rural areas, including presence of relatives and in terms of number of years working on the same land plot(s). While the other two groups had access to land as well, they were still in an experimental phase: learning how to farm, including attending workshops and experimenting with urban gardening, assessing whether or not their farm plot(s) were manageable, and setting up their farms. The entrepreneur group spent less time assessing which land plot to manage or learning how to farm. They tended to dive into experimentation on their farm plots sooner, due in part to their closer ties to the rural world. They were associated with stronger support from their family network, as evidenced by the importance of family financial help which increases the probability of belonging to the entrepreneur group by 35 percentage points.

Results show that the different back to land groups are associated with difference in prior land experience and available investments in rural areas that shape their back to land strategies. Households with little experience with farming and rural areas – such as the self-consumption group – were at the experimentation stage, seeking to learn how to farm. During that stage, producing food for self-consumption not only enables households to have food but also enables them to learn how to farm. In that regard, experimentations in urban areas are very important and often provide a stepping stone for households to experiment on previously uncultivated lands outside of the city. The complementary group has some prior knowledge of rural areas and farming – mostly through childhood experiences – but do not have a strong social network in rural areas, which makes it more difficult for them to leave urban centers. They have, however, productive trees that enable them to derive an income relatively quickly and start further investments in their lands and rural infrastructure. The entrepreneur households have more ties to rural areas and have more rural assets (including housing, productive trees) and as such are better able engage in market-based land production and for some move to rural areas.

4.3 How do back-to-landers manage their lands?

Self-consumption oriented households manage smaller land plots than market-oriented ones, the last including the complementary and entrepreneur groups. While urban self-consumption households manage slightly smaller land plots than their rural counterparts (mean 0.09 ha vs. 0.13 ha, respectively), this difference is not significant. Market-oriented households use similar amounts of land whether located in urban or rural areas (mean 1.8 vs. mean 1.9 ha, respectively). These land plots are quite small, well below the 4.7 ha average for Greek farmers (PASEGES 2011). 43% of households managed to access more land than that with which they began, mostly used to increase their market production. Of these added lands 4% involved accessing additional family lands, 21% had land lent to them by neighbors or through a collective, and 17% bought or rented land. As a consequence, market-oriented households managed more land plots than self-consumption ones (3.74 vs. 1.81 fields). Urban households – whether market or self-consumption – managed more fields in different regions, far from one another (Man-Whitney $z = 3.486$, $p = 0.0005$).

Back-to-landers overwhelmingly adopted organic farming practices, mostly for ideological purposes but also due to high costs of inputs and, for some, to raise the value of their goods. Self-consumption households all practice organic farming and associated practices, such as natural farming, or permaculture. For market-oriented households there is a slight difference between those that manage lands from urban areas and those that moved to rural areas. The former are more likely to engage in organic farming (93% of urban households vs. 78% of rural households, chi-square 2.750, $p = 0.098$). Most households were not only interested in conventional organic farming, which tends to focus on avoiding inorganic fertilizers, but also believed in the necessity of maintaining biodiversity on their farm and enhancing soils. These practices reflected their desire to reconnect to nature and sustain natural ecosystems (see Chapter II). Yet, creating these new low input-high biodiversity systems takes time and many households, especially among the entrepreneur group that had to make a living in the short term, ended up shifting to simpler, but still organic, monocultures as illustrated by one back-to-lander:

“I started with the logic of growing a diversity of vegetables to sell to a nearby urban population by working on 0.15 ha. Now I try to specialize in one product tomatoes and I expanded to 1 ha when I realized that it was not financially sustainable before.” (132).

Interestingly, there is no significant difference in terms of crop types between urban and rural households, with the exception of animal husbandry (poultry and livestock) and foraging that tend to be practiced in rural areas (Fig. 3.4). This finding implies that people managing lands from rural areas are not distinct in terms of cultivated products from those that moved to rural areas. Urban households tend to produce vegetables – for self-consumption – in urban areas or in fields that are very close to their place of residence, and manage other types of crops from afar, which explains why they have more land plots in geographically distinct areas.

Despite actively engaging in farming practices and even selling their farm goods, only a minority of households were registered as farmers. Given that they did not engage in market activities, none of the self-consumption group were identified as farmers. In the market-oriented group, only 17% were registered as farmers and 9% had initiated the process. These results highlight the invisible nature of the back-to-land trend that remains for the most part absent from official statistics. Being invisible may very well be a benefit in many ways, given that these households were less likely to be burdened with bureaucratic requirements or have to pay taxes on their often very low farm income, but it also prevented them from having access to health insurance.

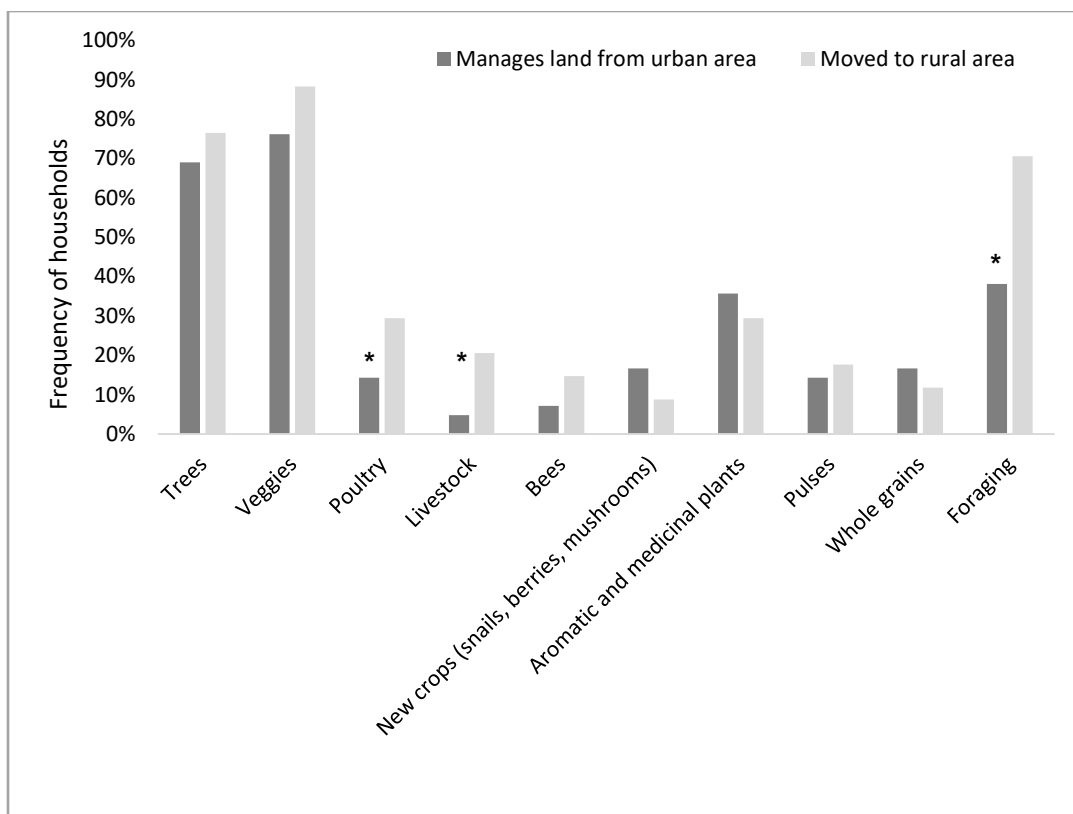


Figure 3.4 Type of crops by migration strategy Star (*) denotes chi-square statistically significant difference

4.4 Material wellbeing: Income, living costs and self-sufficiency

Households relied on different income sources to make a living, depending on their adopted migration strategy and type of back-to-land (Fig. 3.5). Self-consumption-oriented urban households relied entirely on off-farm income to make a living. As noted above, these are among the poorest households in the sample, and food production was important to alleviate food expenditures and obtain healthy food for their families. Market-oriented urban households, which include both complementary and entrepreneur groups, derived a third of their gross income from land-based activities after an average of 2.5 years on their farm, and the rest from wage income (47%) and a mix of other activities occurring in both urban and rural areas. Self-consumption-oriented rural households derived 41% of their income from wage labor that they could do from afar as well as rental income (23%), family support (17%), and government support (15%). One strategy commonly mentioned was to rent their house in the major urban center where rents are higher and

move into cheaper housing in rural areas. Market-oriented rural households, which are mostly comprised of the 'entrepreneur group', derived 67% their gross income from land-based activities (farming and foraging), with only 8% coming from non-farm wage income.

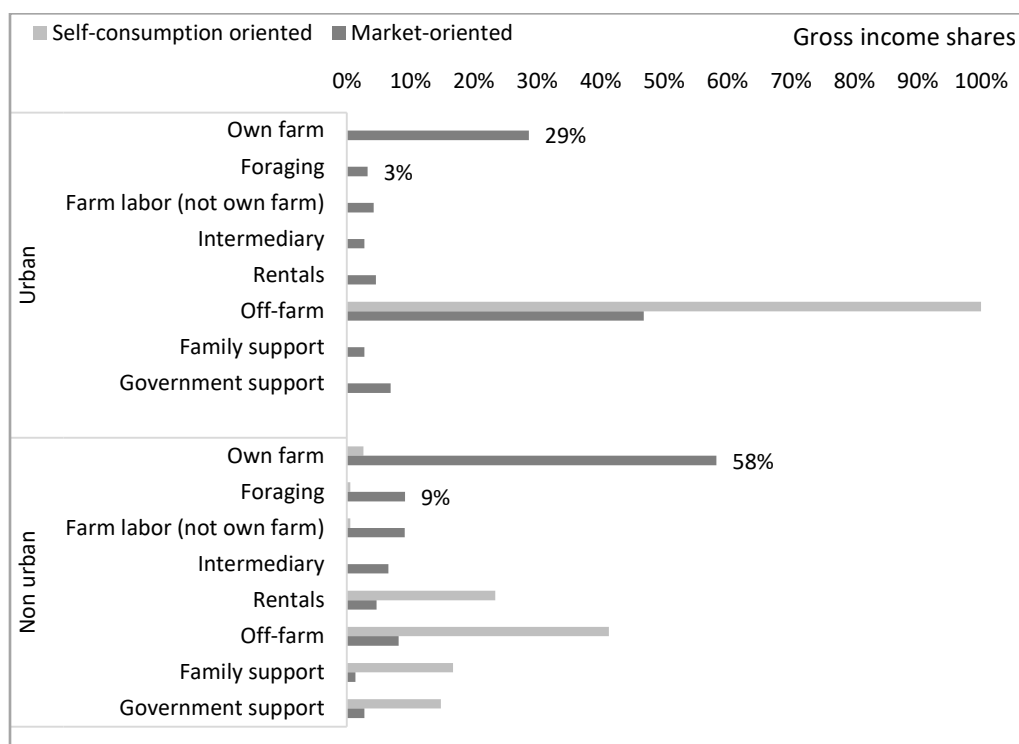


Figure 3.5. Income shares by type of back-to-lander and migration strategy

The economic crisis considerably decreased households' disposable income. On average, net equivalized¹⁴ monthly income decreased by 50% post-crisis (Fig. 3.6). Self-consumption oriented households, whether in urban or rural, had a significantly lower income on average pre-crisis (1,115 Euros/month vs. 1,514 Euros/month for households that engaged in market-oriented land activities [t test= 2.04, p=0.0453]). Not only did these households have a lower income pre-crisis, they were affected disproportionately post-crisis. Self-consumption-oriented urban households experienced the greatest income reduction, seeing their net income decrease by 67%. In comparison,

¹⁴ Equivalized income refers to income that is weighted based on household size, whereby a weight of 1 is given to the first adult, 0.5 for each subsequent adult and 0.5 for children. Equivalization recognizes that there are economies of scale in consumption and has been adopted by Eurostat and OECD to report disposable income.

households that engaged in market-oriented land activities from urban areas experienced the lowest decrease in income (reduction by 42%). Households that moved to rural areas, whether for market or self-consumption, experienced similar decreases in income, about 50%, that were also often associated with the loss of health insurance. People either did not have enough money to pay for health insurance or were not fully transitioned to conditions that provided insurance. For instance, those not yet registered as farmers did not have access to health insurance through the farmers' insurance plan. Rural households were significantly less likely to have health insurance compared to their urban counterparts (chi-square 4.94, $p=0.026$). Similarly, self-consumption oriented households also were more likely to not have access to health insurance compared to market-oriented households (chi-square 4.47, $p=0.034$).

The decrease in disposable income was accompanied by cuts in living expenses. Equivalized living costs pre-crisis were 1,204 Euros/month, which were reduced a third to 363 Euros/month post-crisis for all households (paired t-test= 3.129, $p=0.012$). Households that stayed in urban areas decreased their living expenditures by 50%. This decrease involved cutting recreation, producing more of their food, reducing other costs, such as heating, by 50%. Households that moved to rural areas decreased their household expenditures by 67% post-crisis. Living costs differed significantly (t-test 4.02, $p=0.0002$) for those that moved to rural areas (~ 253 Euros/month equivalized living costs) versus those that stayed in urban areas (~ 512 Euros/month equivalized living costs).

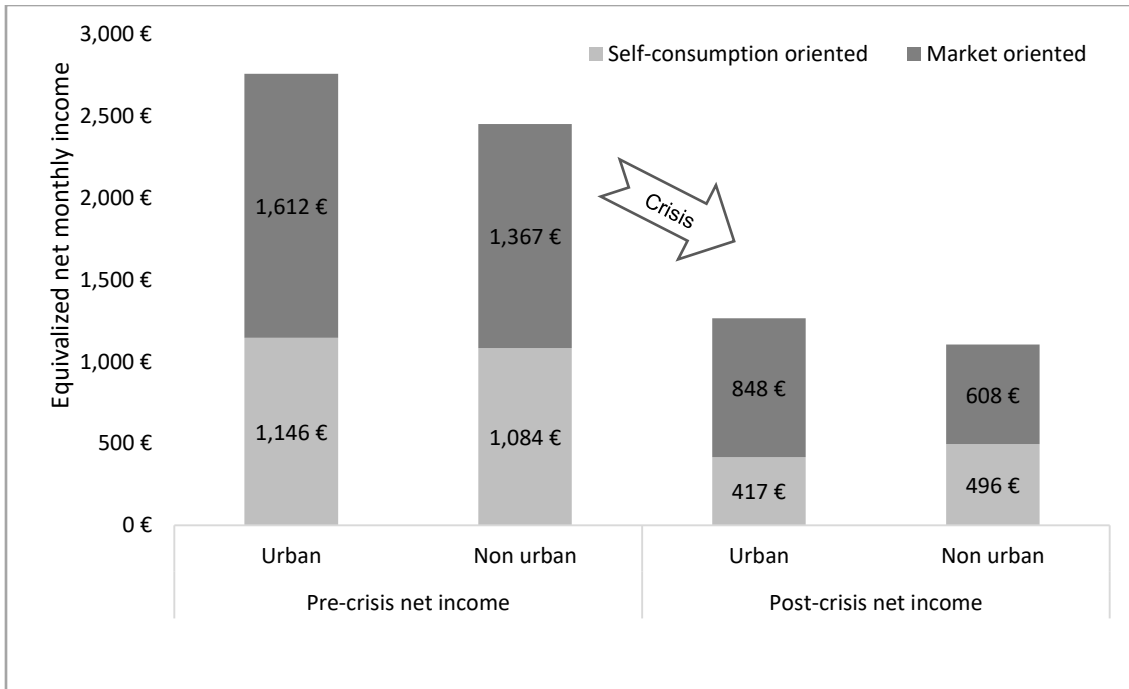


Figure 3.6. Pre and post-crisis incomes. Equivalent net monthly incomes pre and post crisis for households that manage lands from urban areas (urban) and those that moved to more rural areas (non-urban), as well as based on type of land-based activities pursued: for self-consumption or that are market oriented (includes here complementary and entrepreneur groups).

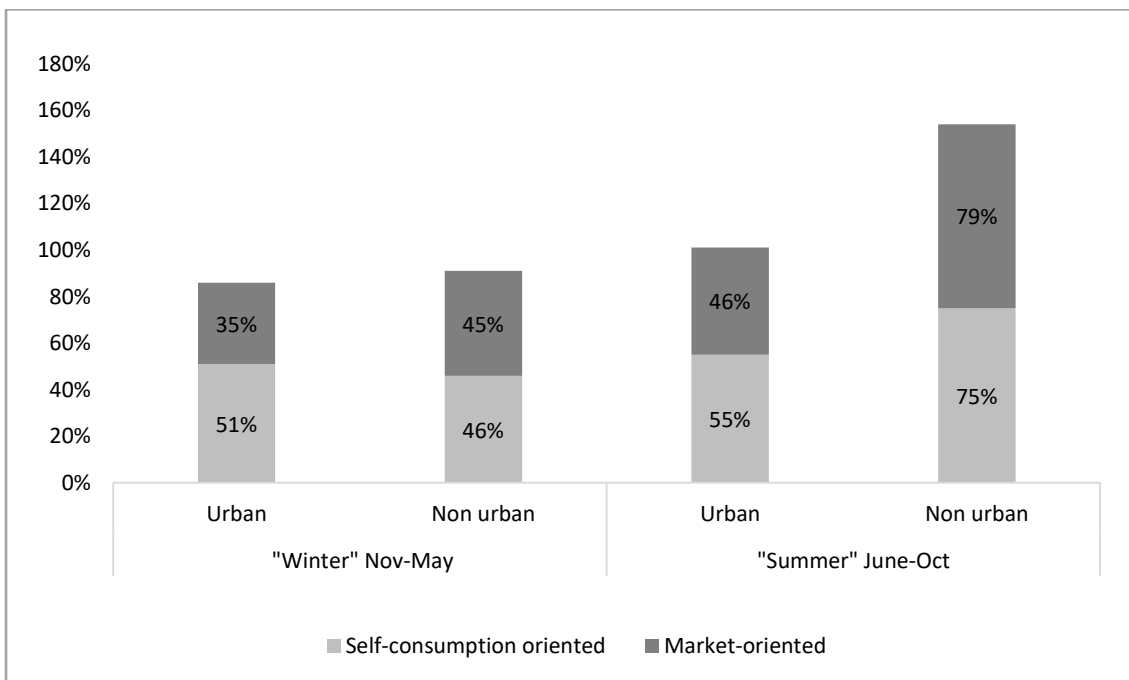


Figure 3.7 Reported vegetable self-sufficiency

Lower living costs were facilitated by the production of food for self-consumption. Whether households only focused on self-consumption or engaged in market-oriented land activities, most produced their own vegetables whether in urban or rural areas (Fig. 3.7). In fact, planting a vegetable garden was among the first activities that back-to-landers engaged in, both to provide healthy food for the household and to learn and experiment with farming. Most households that moved to rural areas focused time and effort to produce their own vegetables regardless of whether or not they also sold farm products. Self-sufficiency for these households was greater for summer vegetables (>70% self-sufficiency) rather than winter ones (>45% self-sufficiency), due to the reduced productivity of crops during winter times and sparse experience growing and preserving foods. Even urban market-oriented households maintained 35% self-sufficiency in the winter and 55% in the summer, lower than the other categories but still important.

Living costs in rural areas are also lowered due to a greater self-sufficiency in meat, eggs, cheese from animal husbandry and a culture of exchange and reciprocity among rural residents, a practice remaining today. As noted by this back-to-lander, lower incomes in rural areas were somewhat balanced by lower living costs and a greater quality of life:

“When you live in a village or closer to nature, you have some basic things that people don't have as easily in the city. It would be harder to starve in a village as opposed to the city if things become harder. Weirdly I feel there are ways to get by in the village. You can find things to do, you will never get a lot of money but you also need so much less... there is this balance. Here we have a better quality of life” (I2)

While everyday living costs are lower in rural areas, transportation costs were very high and increasingly challenging to sustain in both urban and rural areas. Back-to-land livelihoods often depend on continued mobility, which commonly rely on possessing a car or having access to one through family and friends. Gasoline and highway tolls were identified as a major and at times prohibitive cost by back-to-land households. Indeed, urban households need to be able to access their fields, and rural households are often dependent on car transportation to access different services (e.g., supermarkets, hospital, schools), to socialize, and to sell their farm goods. While

this was less of an issue at the beginning of the crisis when people had savings, as the crisis deepened, mobility became more and more of a challenge as illustrated by the following quotes:

“Conditions are very difficult up here. Not only do we have an economic crisis but I am 1200m in the mountains and to go to the city I need to drive for 60km and I need to pay 25 euros one way with my own car [when he makes 160 euros/month]” (142)

“The good thing is that Athens is two and half hours away exactly. That is very important to me because we always have to count our expenses, just the tolls and gas is so high” (131)

“I don’t have a car anymore [it was too expensive]. I gave away the license plates. Now I am isolated for the past three months and there is no bus in the village.” (150)

Mobility allowed households to manage time between urban and rural areas for a variety of reasons, some related to back-to-land strategies (e.g., better market access in urban areas or need to access one’s fields) and others to maintain previous social relations and/or wage labor in the city. The deepening of the Greek economic crisis thus posed considerable challenges to mobilities observed during this research, and back-to-land households either will have to achieve greater financial sustainability to sustain mobility or will be forced to stop managing lands from afar and settle closer to their fields.

5. Conclusion

In the Greek case, reconnecting to the land did not involve a ‘simple move out of the city’ but instead required harnessing and investing in old and new land-specific capacities, including knowledge, assets and networks. Most studies conflate back-to-land with counter-urbanization but the back-to-land trend is first and foremost a livelihood transformation whereby urbanites are seeking to reconnect to land-based activities; this reconnection may happen in urban areas as well as rural areas or spanning these spaces.

A livelihood lens, accompanied by detailed, empirical data, helps us conceptualize different back-to-land groups and associated strategies as part of broader trajectories of livelihood transformation. In this process, not all back-to-land households will end up as professional farmers. Rather, Greek households adopted different strategies based on their existing capacities, strategies that may

change as new capacities are acquired. For instance, several households started producing food for subsistence before starting to sell their farm products. The back-to-land transformation involves learning how to farm on increasingly larger plots, learning how to manage abandoned fields, acquiring farm-related physical capital, harnessing labor and credit and if engaging in market activities, learning how to sell farm-related goods and services. The self-consumption group is that which needed to acquire the most new capacities because they had the lowest incomes pre-crisis, little family land available and no childhood land experience. Urban gardening was identified as an important knowledge and experimentation stage for households with little prior (childhood) knowledge. The increase of urban gardening spaces post-economic crisis (Partalidou and Anthopoulou 2016) is thus related to the overall process of back-to-land transformation. The complementary group mostly adopted an overall strategy of livelihood diversification, maintaining employment and ties in urban areas, while expanding into a new livelihood, land-based, activities. In contrast, the entrepreneur group – that had the most land-specific capacities – engaged in livelihood specialization, focusing most of their time and efforts into their new livelihood. Both the complementary and entrepreneur groups had access to productive tree crops (e.g., mature olive, nut and fruit trees). This access constituted legacies of past land uses which provided immediately accessible sources of income, provided that households learned how to harvest and care for trees.

Solely focusing on the move to rural areas, as media and government agencies have done in Greece, does not provide a full understanding of the mechanisms of the back-to-land livelihood transformation, and in turn, misses opportunities to provide support for different back-to-land groups at different stages of their evolution. For instance, this research shows that urban experimentation stages are actually essential for household with little experience. Strengthening urban spaces for this experimentation may indirectly support further use of rural spaces, either through distant management or by relocation. For the complementary group, in contrast, more attention needs to be paid to support mechanisms for developing connections to rural areas, including housing and social ties, given the fact that they do not have family relatives in rural areas. For the entrepreneur group, further support mechanisms relate to the next stage: helping them

integrate farming as new entrants and learn how to better produce food and market their farm goods.

In terms of wellbeing, going back to the land provided new opportunities in terms of income and food for both urban and rural household and lower costs of living and better quality of life for those that moved to rural areas. This last observation supports in part the view of rural areas as 'refuges' (Kasimis and Zografakis 2013). Most households are still struggling to make a living, however, and the deepening of the economic crisis puts further pressure on wage income, on which a large part of the back-to-land households rely. Furthermore, after so many years of crisis, many households, whether urban or rural, have insufficient savings left, indicating even leaner times may be in store. High transport costs are also increasingly challenging the new mobilities observed during this research. Even though land and rural areas provide a 'refuge', there are limits to this refuge and to the ability of back-to-land households to enhance their capacity alone, especially in the context of long-term crisis. As noted by Anthopoulou et al. (2017), rural areas are also affected by the economic crisis and still continue to be plagued by the same issues affecting small-scale farming that existed prior to the economic crisis (i.e., ageing population, small, scattered land plots and little government support). A further scaling up of the back-to-land trend will require collective action. This collective action may come from greater level of organization either by back-to-land households and/or other groups seeking to build food networks, or through greater government intervention, or both.

In terms of land management, households managing land from urban areas and those that moved to rural areas surprisingly did not significantly differ in terms of their land management, including the types of crops they grew or their farming practices. The overwhelming majority chose to engage in organic farming, mostly for ideological reasons. These findings show the potential important role played by back-to-land households, whether they stay in urban areas or move to rural areas, in the potential growth of sustainable food systems in Greece. For this potential to be further realized however, more attention needs to be given to capacity building targeted to support the needs of

different kinds of back to land efforts, which is crucial to ensure the survival of these small-scale farms and to help households better derive a living from the land. The reconnection to land was initiated, now it needs to be sustained.

CHAPTER IV. From Safety Net to Reconnection: More than Food or Income, the Intangible Benefits of Going Back to the Land in Times of Crisis

1. Introduction

The concept of ecosystem services (ES), commonly defined as benefits that people derive from nature, is increasingly used to assess the relation between ecosystems and human wellbeing (Daily 1997; Daily et al. 2000; MEA 2005; Turner 2010; Summers et al. 2012; Bennett et al. 2015). ES research is now a cornerstone for international science and policy on sustainability, resilience and global change as evidenced by its importance for key organizations such as Future Earth, the Global Land Change Program and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Mauser et al. 2013; Díaz et al. 2015). The Millennium Ecosystem Assessment (MEA) was very influential in shaping how the ES to human-wellbeing relationship is framed (MEA 2003, 2005). This assessment categorized ecosystem services into four main types (i.e., supporting, provisioning, regulating and cultural services) that were then linked to core constituents of well-being defined as: basic materials for a good life, health, security and good social relations (MEA 2005)¹⁵.

Security is identified as an important part of human wellbeing given that ecosystems often provide safety nets that allow people to withstand social and/or ecological crises. Safety nets are commonly defined as “something that provides security against misfortune or difficulty” (Meriam-Webster 2018). In the MEA, security is defined as “access to resources, safety and the ability to live in a predictable and controllable environment” and only examined in terms of material benefits that people derive from provisioning and regulating services, neglecting to examine the link between cultural services and security (MEA 2003: 75). This oversight reflects a broader trend in ES

¹⁵ Provisioning services correspond to goods directly extractable from nature (e.g., food, timber), regulating services refer to regulatory ecosystem processes (e.g., carbon sequestration, erosion control), cultural services relate to the non-objective benefits arising from human-environment relationships (e.g., aesthetics, recreation, education and spirituality), while supporting services refer to ecosystem functions necessary for the existence of all other services (e.g., soil formation, nutrient cycling) (MEA 2005: 50).

research of leaving out cultural services that are harder to measure and conceptualize (Chan et al. 2011; Chan et al. 2012a; Chan et al. 2012b; Milcu et al. 2013; Satterfield et al. 2013). Yet, increasingly there is a recognition that further understanding non-material benefits that people derive from nature can expand our understanding of the ways that ecosystem services actually contribute to human wellbeing (Daniel et al. 2012; Díaz et al. 2015; Plieninger et al. 2015; Díaz et al. 2018).

Research on cultural ecosystem services (CES) has advanced our understanding of the non-material, intangible benefits that people derive from nature (Chan et al. 2012a; Chan et al. 2012b; Daniel et al. 2012).¹⁶ CES refer to “ecosystems’ contribution to the nonmaterial benefits that arise from human-ecosystem relationships” (Chan et al. 2011: 206). These non-material benefits are not phenomena that are marginal and relegated to particular kind of experiences such as aesthetics, spirituality, education or recreation as previously defined in early ES scholarship (e.g. Costanza et al. 1997; De Groot et al. 2002; MEA 2005). Rather, non-material dimensions permeate every aspect of the ecosystem service to human well-being process despite being invisible to many ecosystem service scientists and decision-makers (Chan et al. 2011; Chan et al. 2012a; Satterfield et al. 2013). Indeed, ecosystem services are co-produced through the interplay of ecosystem processes and human values, knowledge, perceptions that steer different management, technologies and institutional approaches (Chan et al. 2012b; Ernstson 2013; Reyers et al. 2013; Chan and Satterfield 2015; Comberti et al. 2015; Fischer and Eastwood 2016; Fedele et al. 2017; Díaz et al. 2018).¹⁷ Yet, despite expanding notions of what matters to people, CES research has not yet focused on concepts of safety nets and security (Gould and Lincoln 2017).

¹⁶ In this article, “nature”, “environment” and “ecosystems” are often used interchangeably to refer to the broader biophysical system. This fluid use of the terms reflects the ways that people interviewed refer to these concepts in vernacular terms.

¹⁷ The concept of co-production is not new to human-environment geographers that have long studied and discussed the interplay between humans and their environments, and the co-produced outcomes of this interplay (e.g. Barrows 1923; Sauer 1925; Roy 1993; Turner 2002). It is relatively new however in ecosystem services research which originated in ecology and economics (Gómez-Baggethun et al. 2010); disciplines that have tended to approach human and ecological systems as separate and distinct until very recently.

Thus, despite the centrality of security for human well-being, the non-material dimensions of environmental safety nets remain untheorized. Prior research has extensively discussed how the environment provides safety nets in times of need, including work on natural hazards and disasters, forests and livelihoods and urban community gardens (Chambers and Leach 1989; Wisner et al. 2004; Barthel and Isendahl 2013). Most of this research, however, tends to focus on the material benefits provided by ecosystems in times of crisis, food and income security in particular, paying less attention to the intangible, non-material dimensions of security and the environment.

Using Greece's back-to-land movement post-economic crisis as a case-study, this article furthers our understanding of environmental safety nets and security. The article argues that environmental safety nets have material and non-material dimensions that are intertwined and that both these dimensions are important to understand security and its role for human wellbeing. Beyond a mere academic exercise, further understanding non-material dimensions of environmental safety nets improves our understanding of human behavior, explaining for instance, why people connect to nature in times of crisis despite experiencing sometimes limited economic returns. Given that non-material dimensions are increasingly given more weight in important policy assessment such as the IPBES (Díaz et al. 2018), there is an opportunity for integrating new insights about the importance of non-material benefits for environmental safety nets and security, and thus expand our understanding of the ecosystem to human well-being linkage.

2. Towards a thicker understanding of the ecosystem-well-being connection

2.1 Cultural services (CES) and human well-being

The literature on CES highlights that ecosystem services are co-produced, often interdependent and filtered through a 'culture' lens, meaning through context-specific human valuation (Fish 2011; Chan et al. 2012a; Chan et al. 2012b; Reyers et al. 2013; Fish et al. 2016; Fedele et al. 2017). The CES literature also shows that material benefits are often inherently accompanied by non-material and intangible benefits that are often as important as the material ones. For instance, fish simultaneously have tremendous importance for food security (provisioning service) but also relate

to people's identity and sense of place (cultural service) (Chan et al. 2012b). Despite the importance and ubiquity of CES, these benefits are often 'invisible' in the eyes of decision-makers and many ecosystem services scientists, in parts because they are hard to quantitatively measure (Raymond et al. 2008; Chan et al. 2011; Chan et al. 2012a; Chan et al. 2012b; Daniel et al. 2012; Satterfield et al. 2013; Chan and Satterfield 2015; Raymond and Kenter 2016; van Riper et al. 2017). Despite being invisible, non-material dimensions of human wellbeing matter greatly to people shaping how they choose to engage with nature (e.g. linked to cultural heritage, sense of place, spirituality, values regarding a good life) (Klain and Chan 2012; Russell et al. 2013; Satterfield et al. 2013; Klain et al. 2014; Fish et al. 2016; Raymond and Kenter 2016; Kaltenborn et al. 2017; Klain et al. 2017). Indeed, CES highlight the presence of diverse value systems – not solely associated with economic valuation – that frame how people perceive, manage and relate to ecosystems (Chan et al. 2012b; Luck et al. 2012; Jax et al. 2013; Raymond and Kenter 2016; Díaz et al. 2018).

CES research does not focus on the non-material dimensions of ecosystem-related safety nets and security, despite its potential great importance for people's resilience. Most CES research still focuses primarily on the initial dimensions proposed by the MEA (i.e., education, spirituality, recreation and aesthetic) (Milcu et al. 2013). Fortunately, CES research is gradually expanding to include other non-material, intangible benefits emerging from our connection to nature (Gould and Lincoln 2017), including sense of place (Raymond et al. 2008; Raymond and Stedman 2017), relational values (Chan et al. 2016; Muraca 2016; Klain et al. 2017) and experiences and capabilities (Chan et al. 2012b; Chan and Satterfield 2015; Fish et al. 2016).

While CES research has grown to include more complex dimensions of the contribution of ES to human wellbeing, it has yet to examine concepts of safety nets and security, leading to a perpetuating view that environmental safety nets are primarily associated with material ecosystem benefits derived from provisioning and regulating services (MEA 2003, 2005).

2.2 Crisis and nature – (environmental) safety nets in different literatures

The risk and hazards literature illustrated early on the interplay between human vulnerability and ecosystem degradation, emphasizing the important buffering role played by ecosystems (Wisner et al. 2004; Kathiresan and Rajendran 2005; Alongi 2008; Shepard et al. 2011; Costanza et al. 2014; Spalding et al. 2014). For instance, several studies have shown that wetlands provide coastal protection against hurricanes (Kathiresan and Rajendran 2005; Alongi 2008) or that forests contribute to flood mitigation (Wisner et al. 2004; Bradshaw et al. 2007; Laurance 2007). In the risk and hazards literature, environmental safety nets tend to be associated with regulating services that buffer households from environment-related risks.

In the forest and livelihoods literature, scholars have shown that non-timber forest products (NTFPs) provide essential economic safety nets to households in times of need (Chambers and Leach 1989; Godoy et al. 1998; Pattanayak and Sills 2001; Dercon 2002; McSweeney 2004; Shackleton and Shackleton 2004; Pierce and Emery 2005; Sunderlin et al. 2005; Angelsen and Wunder 2006; Takasaki et al. 2010; Liswanti et al. 2011; Angelsen et al. 2014; Shackleton and Pandey 2014; Wunder et al. 2014). Access to these forest safety nets differs based on age and income of land managers (McSweeney 2004) and depends on the continued existence of traditional ecological knowledge and management (Sills et al. 2011; Shackleton and Pandey 2014). The importance of knowledge, culture and management for the continued flow of these forest-related ecosystem service illustrates the importance of co-production for the delivery of ecosystem services. While most case studies of forest safety nets are in developing countries, there are also examples of the importance of NTFPs for economically marginalized populations in the United States (McLain et al. 2008; Vaughan et al. 2013). In this literature, environmental safety nets are most often conceptualized in terms of their economic importance for sustaining livelihoods of the poorest.

Scholarly work on home and urban community gardens illustrates their important roles as food and economic safety nets in times of crisis. In the UK and the US, urban allotment and community

gardens multiplied during World War I and World War II, providing food security to urban populations (Crouch and Ward 1988; Humphreys 1996; House of Commons 1998; Lovell 2010; Barthel and Isendahl 2013; Barthel et al. 2013b; Mok et al. 2014). In the UK for instance, urban allotment gardens doubled during World War I from 600,000 plots to 1,5 million plots producing 2 million tons of vegetables by 1918 (House of Commons 1998). Several of these allotment gardens waned after the war before resurging in times of need during World War II (Barthel et al. 2013b). In Russia, home gardens provided 40% of Russian agricultural output following the collapse of the Soviet Union thus providing an essential food safety net for an estimated 40 million households (Seeth et al. 1998). Similarly, urban agriculture rapidly developed in Cuba after the US embargo, providing food and small sources of income to urban households (Altieri et al. 1999; Buchmann 2009). While studies of urban community and home gardens show that working in gardens contributes to several non-material benefits (e.g. sense of community and belonging, knowledge, health, and civic mobilization) (Allen 1999; Barthel et al. 2010; Colding and Barthel 2013; Russell et al. 2013; Bleasdale et al. 2016; Ives et al. 2017). Only a very small subset of studies examine these non-material benefits in a context of crisis (Tidball 2012; Camps-Calvet et al. 2015; Chan et al. 2015; Partalidou and Anthopoulou 2016). None discuss the linkages between material and non-material benefits in relation to environmental safety nets and human wellbeing.

3 Case Study: Greece post-2008

3.1 The New Great Depression

The Greek economic crisis (2008-onwards) and associated austerity measures led to significant social impacts. General unemployment rose from 7.8% in 2008 to 26.5% in 2014 (the highest in Europe) (EUROSTAT 2017).¹⁸ Wage income decreased by a third from 2008-2012 (Giannitsis and Zografakis 2015), while household consumption fell by 15% in the 2008-2011 time period (Gerstberger and Yaneva 2013). The crisis was so severe that more than 45% of the population

¹⁸ Unemployment was at its highest at the time of the interviews in 2014. In January 2018, unemployment decreased in Greece but still remains the highest in Europe at 20.9% far ahead from all other European States. Spain which is in second position has an unemployment rate of 16.3% in 2018 (EUROSTAT 2018).

dropped below the pre-crisis poverty threshold (adjusted for inflation) (Perez and Matsaganis 2018: 6).¹⁹ Indeed, while pre-crisis mean equivalized net income ranged from 800-1200 euros/month, it dropped post-crisis to about 550-600 euros/month (Andriopoulou et al. 2018: 29, see Fig. 1).²⁰ Changes in income distribution pre- and post-crisis also show the rapid shrinking of the middle class and the general pauperization of Greek society; a situation that government-related social safety nets were entirely unable to remediate (Andriopoulou et al. 2018: 49):

“Many household heads lost their jobs, and a considerable proportion of the population was left with limited or even zero financial resources. Unemployment insurance was flat and inadequate and provided for a limited period of time, long-term unemployment assistance was almost non-existent and Greece was one of the very few members of the EU without a benefit of last resort (i.e., a Minimum Income Guarantee scheme). Unsurprisingly, the experience of the crisis for several households with unemployed heads or unemployed members or both was a free fall without a safety net.”

3.2 Effects on health

Increased unemployment and job insecurity led to the deterioration of physical and mental health in Greece (Vandoros et al. 2013; Drydakis 2015). Depression and suicide rates rose during the crisis, especially among unemployed men (Economou et al. 2013; Kontaxakis et al. 2013; Antonakakis and Collins 2014; Parmar et al. 2016).²¹ Greece experienced the greatest drop in self-reported happiness among 126 countries surveyed for the 2016 World Happiness report (Helliwell et al. 2016: 27). To make matters worse, funding and access to health services decreased during the crisis as most state-provided social safety nets were dismantled (Drydakis 2015; Katsikas et al. 2018).

¹⁹ Eurostat, the European statistical office, estimates relative poverty based on a cut-off point of 60 percent of median equivalized income after social transfers. Perez and Matsanis (2018) argue that at-risk poverty needs to be assessed based on the 2007 (pre-crisis) poverty threshold to account for the generalized lowering of median income.

²⁰ Equivalization refers to a weighing procedure to normalize income (or other variables) based on household size and composition, a procedure used by Eurostat and the Greek national Statistics agency (ELSTAT). Here, the total net monthly household income is divided by the number of number of household members using the modified OECD scale whereby the first adult counts as 1, each additional adult as 0.5 and each child as 0.3 (EUROSTAT 2014).

²¹ The crisis hit men particularly hard in parts because Greece is still a relatively traditional society where men were or were perceived to be the main breadwinners.

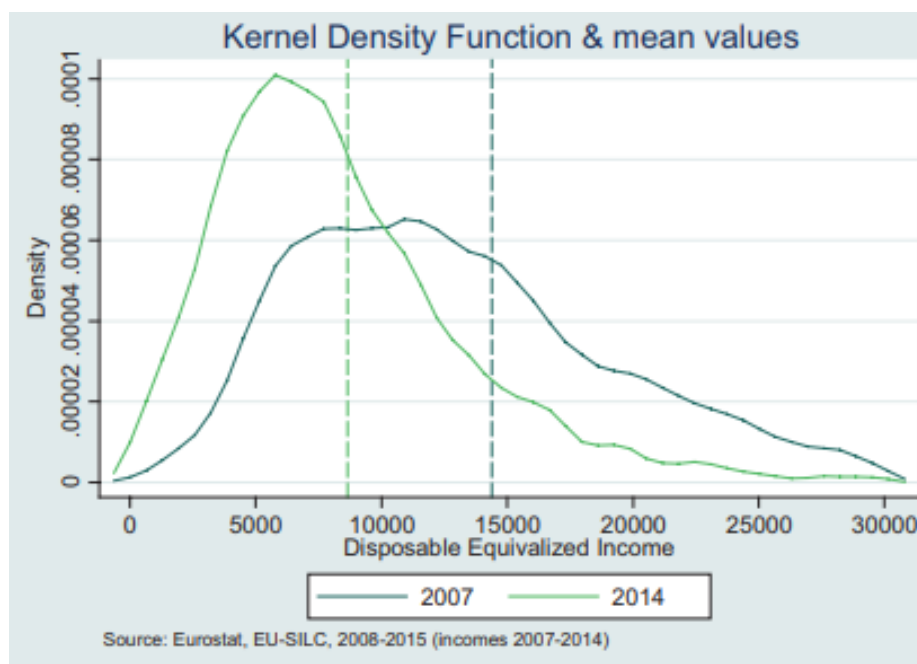


Figure 4.2. Income distribution 2007 and 2014 (pre- and post-crisis)
(Andriopoulou et al. 2018: 29)

3.3 Back-to-land trend

It is in this context of Greek Great Depression that people are turning back to the land. Indeed, only the primary sector of the Greek economy experienced an increase in value post-economic crisis (~20%) (PASEGES 2011: 11). Employment in that sector increased, rising from 11.3% in 2008 to ~13.5% in 2013-2014 (~78,000 people) (World Bank Data 2017)²². These official statistics do not account for the harder to track informal agricultural economy or those that are still in transition. In 2012, an opinion poll for the Ministry of Rural Development and Food found that 7 out of 10 people in Greece's large urban centers were actively planning to go to the countryside (KAPA research 2012). This emerging back-to-land trend has been confirmed by Greek researchers but its exact nature is still very much debated (Gkartzios 2013; Anastasiou and Duquenne 2015; Anthopoulou et al. 2017; Gkartzios et al. 2017)²³. Rural areas are now seen as refuges in times of crisis and new

²² The percentage dropped to 12.9% in 2015 was probably due to the retirement of old farmers and the emigration of a significant number of the active population abroad. For men, the percent employment in agriculture increased from 10.83% of total male employment in 2008 to 13.98% in 2014 and 13.28% in 2015 (World Bank Data).

²³ Estimating the actual number of people that have left urban areas, and/or started to engage in land-based livelihoods is extremely difficult given the fact that many engage in the informal economy (not always opting

spaces of opportunity for rural people as well as urban people newly interested in engaging in land-related activities (Kasimis et al. 2013; Daudon and Vergos 2015; Karanikolas et al. 2015; Papadopoulos 2015; Karanasios 2017).

Most of these studies focus on the income, job and food security *potential* of these rural refugees. There are no detailed empirical studies of the back-to-land experiences in Greece yet and no examination as to whether or not the environment actually provides a safety net for people turning back-to-the land. This article provides evidence of the importance of environmental safety nets for back-to-land households, examining both material and non-material dimensions of security.

4 Methods and Analysis

This analysis is based on in-person, semi-structured interviews of 76 households that turned to land-based activities post-crisis (after 2008) in various regions of Greece. Most of the interviews were conducted in 2014, with a few follow-up interviews conducted in 2015. These households were residing – and some still do – in urban areas before the crisis, and were not substantially involved in land activities previously. Given that there is no clear and easily bounded sample universe from which a random sample can be drawn, snowball sampling was employed for the selection of households (Bernard 2006). Such sampling methods are challenged by a selection bias that might lead to missing potentially important isolates (Atkinson and Flint 2001). To minimize this bias, initial interviewees were drawn from diverse and unrelated sources, including referrals from academic researchers, civil society members, business and government organizations, people that started farming themselves as well as identities found from newspaper, blogposts and social media posts that discussed back-to-land initiatives.

to register as professional farmers or declaring their agricultural sources of income). Many are also in transition and do not have yet the requirement to be officially listed a farmers.

The semi-structured interviews integrated a standardized list of questions aiming to generate quantitative data to open-ended questions focused on flexible thematic content that allowed interviewees to express themselves more freely (Hay 2005: 81). These open-ended questions were iteratively expanded upon based on key themes that emerged during the interview process. I collected information regarding household life stories, demographics, livelihood activities, incomes and assets (pre- and post-economic crisis), land access, reasons behind the decision to start farming, ways that people perceive, relate to, and manage land (i.e., soil, water, farming techniques adopted, knowledge acquisition and market strategies), and the livelihood and land outcomes of these transformations.

This article is based on the analysis of qualitative content from the interviews using a grounded-theory approach (Bryant and Charmaz 2007). Grounded theory refer to set of iterative, inductive strategies to analyze data, starting with individual experiences and cases to progressively develop more abstract conceptual categories (Charmaz 1996). One of the defining characteristics of grounded theory is that analytic categories are principally derived directly from the data rather than based on a priori concepts or hypotheses (Charmaz 1996; Bryant and Charmaz 2007). In this case, initial concepts and theories did frame the ways that questions were formulated but room was left to iteratively integrate new concepts that emerged during the data collection process. During the analysis stage, I went through various phases of coding using Nvivo 9 to facilitate the process. First, I created broad themes based on the initial questions such as “motivation, “economic crisis”, “relationship to the environment” (see Appendix A). These broad themes/questions were further coded based on broad concepts that emerged from the data. For instance, the category “motivation” was further coded into “desire for self-sufficiency”, “political action”, “desire to reconnect with nature” and so on. During the initial coding, I quickly realized that people were repeatedly mentioning deriving intangible, non-material benefits from their land-based activities. I thus did a second set of codes that examined all of the different non-material dimensions related to this reconnection to land. These principally emerged from the questions: “How do you feel when working on your farm/garden compared to your previous work?” and “What can you tell me about

your experiences working the land? Given the open-ended nature of several of the questions especially those relating to back-to-land motivations, experiences and challenges, I also included answers emerging from other questions that discuss people's relationship to the environment, the importance of back-to-land for their lives, and notions of self-sufficiency. The final coding stage involved relating these initial codes to more structured, conceptual codes inspired by the literature on non-material dimensions of ecosystem services and human wellbeing (Weeratunge et al. 2014; Chan et al. 2016; Gould and Lincoln 2017; Ives et al. 2017; Díaz et al. 2018).

The analysis of qualitative data was complemented with descriptive statistics based on the quantitative data collected during the interviews to provide context to the link between material wellbeing and environmental safety nets in particular. The sample was divided into three income terciles (low, medium and higher income groups) to assess whether poorest households relied more extensively on ecosystem-related benefits; one of the main assumptions of the environmental safety nets literature. Income terciles were derived by dividing the range of equivalized net income derived after the back to land transition into three even categories. These were then compared to the 2014 income distribution (Fig 3.1) and were found to be representative of what is low, medium and higher income in the general population. Statistical difference was estimated in Stata 13 using chi-squared tests for measuring association among categorical variables (Agresti 2013).

5 Results

5.1 Reconnecting to nature: a key motivation

Reconnecting to nature emerged as the most frequently cited motivation for turning back to the land (54% of household interviewed), followed by a desire for self-sufficiency (51%). When looking at income terciles derived after making the back to land transition (see Fig 4.2.), people with the lowest income were more likely to mention a desire to 'reconnect to nature' compared to people with higher incomes (>50% vs. 20% respectively, chi-square 4.75, $p = 0.093$)²⁴.

²⁴ These income terciles have to be situated in context with the broader decline of incomes during the crisis. All households had relatively low incomes when compared to pre-crisis standards (Fig. 4.1). The first group

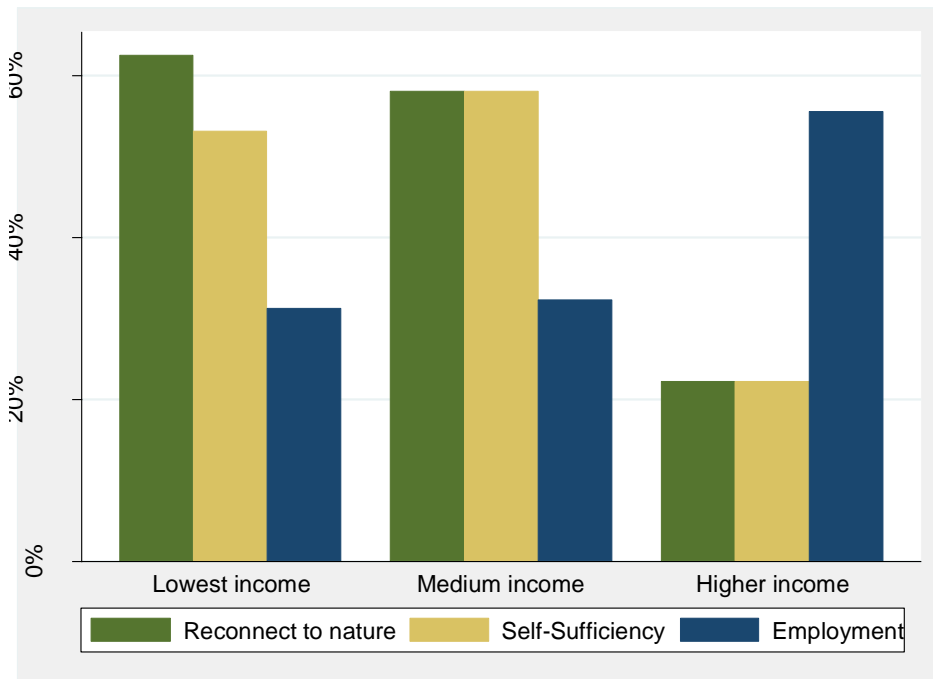


Figure 4.2. Motivations to reconnect to land-based activities based on income terciles where lower < 600 euros/month net equivalized income (n=32); medium between 600 and 1100 euros/month (n=31) and higher > 1100 euros/month (n= 9) (max here is 1750 euros/month equivalized net income).

Similarly, the desire for self-sufficiency was higher for low and medium income households. Higher income households tended to associate turning back to the land with economic opportunity and job stability. The importance of ‘reconnecting to nature’ and ‘self-sufficiency’ as motivations for low and medium incomes supports the view that environmental safety nets are particularly important for poorer households (Shackleton and Shackleton 2004; Daw et al. 2011).

5.2 Material wellbeing

In terms of income security, turning back-to-land does provide overall income (and job prospects) in a context of widespread unemployment and job insecurity. Among those that sold farm and foraging products (71% of household interviewed), land-related income share represented about

reflects low incomes among the general population, the second group is around the median income derived by the general population and the higher income group is above the median but by no means among the richest households.

45% of people's total net income, averaging ~ 5000 euros/ year net income. This economic dimension was however unevenly distributed given that not all households managed to derive net income from farming (e.g. net farm income ranged from zero to 19,000 euros/year, median net farm income was 3000 euros/year). Deriving income from farming requires knowledge, assets and financial capacity that are not always available.

In contrast, income from productive trees and foraging was more easily accessible. Productive trees also played an important role for consumption and deriving income for all households. 72% of households obtained access, either in their own fields or by accessing forest commons or abandoned fields, to productive trees (e.g. olives, nuts, fruits) and 38% derived income from these productive tree crops. Lastly, 53% of households foraged (e.g. wild greens, aromatic and medicinal plants, mushrooms) and 28% obtained income from foraging. Reliance on tree crops for self-consumption or sale did not differ based on income terciles, but foraging did with lower income households being much more likely to engage in foraging in forests and abandoned fields than higher income households (63% vs. 12% respectively, chi-square 7.43, $p=0.024$). Interestingly, however, deriving an income from foraging did not differ based on income terciles, implying that lower income household rely extensively on foraging for self-consumption but both low and higher income households engage in foraging for sale.

In terms of self-sufficiency, almost all households (79%) grew their own vegetables achieving on average 42% of vegetable self-sufficiency in the winter and 60% in the summer. Planting a vegetable garden is among the first things that people did. Some also increased their self-sufficiency through animal husbandry (e.g. meat, eggs, milk, cheese, honey). Ecosystems also provided other important benefits such as firewood for heating, a non-negligible contribution given the increase in fuel poverty during the crisis (Santamouris et al. 2013). Many households (43%) used firewood that they either collected from the forest, in abandoned fields, or that were generated after pruning their own trees. For people who now live in rural area, this percentage is 80%. In urban areas, only 21% of households use firewood they collected for heating. Reliance on firewood

collected for heating significantly differs based on income terciles, with lower income households relying more heavily on collecting firewood than higher income households (56% collected firewood among the lowest income group, 39% for the medium income group and only 11% for higher income households, chi square 6.2569, $p= 0.044$).

To conclude, some ecosystem services, in particular non-timber forest products (NTFPs) obtained while foraging (i.e., wild greens, mushrooms, medicinal and aromatic plants) as well as firewood collection, are particularly important for lower income households. These often allow households to lower their cost of living and contribute to their overall self-sufficiency. These findings corroborate evidence from the literature that NTFPs located in forest commons are particularly important for lower income households (Chambers and Leach 1989; Shackleton and Shackleton 2004).

Productive tree crops were very important for all households, allowing people to derive income from immediately accessible wealth. They are also an example of the importance of legacy effects in times of crisis. Indeed, growing food on farms requires much more equipment, know-how and time relative to already existing productive trees, which provide relatively quickly accessible environment-related benefits²⁵. Most of these productive trees are legacies of past land investments and know-how, generally from older generations. These legacy effects highlight the importance of understanding temporality in relation to environmental safety nets. Ecosystem services can be latent, meaning that they are only mobilized in times of need when people value them anew. While ecosystems may or may not provide these benefits, these are not equally valued at all times. For instance, olives growing in abandoned olive groves were often not collected prior to the crisis, the crisis led to a revaluation of this natural wealth.

Lastly, increased self-sufficiency was not only linked to material benefits, such as obtaining food or decreasing costs of living, but also were linked to non-material benefits, such as an increased feeling of safety as illustrated by the following quotes: *"I wanted to learn how to be self-sufficient,*

²⁵ See Chapter III for more detail.

to feel safe” (I97) or “I decided to go back to basics. And I thought, what do I need? Food. A refuge, safety. The village had all that and more, in comparison to Athens” (I22). This illustrates that material and non-material benefits are often inherently interrelated, which is also the case for all the different non-material benefits discussed below.

5.3 Non-material wellbeing

5.3.1 Calm and serenity

More than 50% of households mentioned feeling a sense of calm and serenity when working in contact with nature, which reduced stress and anxiety. This calm and serenity was associated to notions that “time stood still” allowing their minds to clear, which helped them regenerate and experience life in the now rather than worry and stress about the future. People also used the metaphors of ‘feeling light’ and some even referred to doing their own psychotherapy and psychological restoration (see Box 1).

Box 1. Calm and serenity

“I simply feel. I don’t think of problems, time flows. I feel a lot of strength and optimism. I always have things to do. I dream and think positively of the future. It’s grand.” (I67)

“I wanted to express myself freely, to not constantly overthink what I say and feel like I have a noose around my neck. Now in the field, I come in the morning, leave at night and I see all the animals and my plants growing. I lose time. It’s serene and regenerating. You come in closer contact with yourself. It brings out a calmness and peacefulness out of you.” (I14)

“I wake up without an alarm clock, feeling light. When I go to the field, I look at the mountains around and feel the need to say thank you. The body is very tired but the mind is open.” (I66)

“I had a lot of serious problems with my stomach due to stress and I don’t have them anymore” (I20)

Selected quotes from different households identified by anonymized ID numbers in parentheses

Interviewees thus experienced improved mental (and physical health) when reconnecting to nature, which is well known in the literature (Russell et al. 2013; Ives et al. 2017). This finding is particularly important however in the context of the crisis, which as we discussed previously contributed to increased rates of depression and suicides in Greece. Ecosystems provide restorative spaces that help people psychologically cope with the stress and anxiety associated with the crisis.

5.3.2 Freedom and independence

Many households (about half) associated their reconnection to nature with independence and freedom. Working the land allowed people to 'be their own boss', to have greater control over their lives in a context of increased economic insecurity and uncertainty. This feeling of independence was associated with the quest for greater self-sufficiency made possible through their reconnection to nature. Just learning and starting to grow food for self-sufficiency gave many people a strong feeling of security. Self-sufficiency and independence were not considered an individualistic endeavors. Many emphasized that self-sufficiency in isolation was impossible, highlighting the need to develop new networks to facilitate sharing of resources. Rather self-sufficiency and independence were defined in opposition to feelings of dependency they had in regards to the dominant economic system.

Box 2. Freedom and independence

"There is no pressure. You don't have to wake up at a given time to do work that was imposed on you. You don't have a boss." I24

"It's another way of life, more freedom." (I42)

"I get tired but I don't care. I don't feel the pressure that I need to work 8-hour days. I am free. Nature gives me everything and I don't exploit it. I collect what I need to live." (I31)

"Work in the city is meaningless, in the field it's important. You have seeds in your hands, the ability to live, to be independent, to have quality of life." (I85)

"I started thinking "what will I do if I lose my job?" Now that I produce my food, I feel stronger, it gives you confidence." I91

Selected quotes from different households identified by anonymized ID numbers in parentheses

5.3.3 Doing something: creating meaning

About a third of household explained that reconnecting to nature created meaning in their lives, giving them a profound sense of fulfillment. This sense of fulfillment was in large part driven by a feeling of contributing to creating something greater, something that they were passionate about.

Others mentioned that just the fact that they were ‘doing something’ rather than nothing when faced with the crisis was a source of contentment and fulfillment. Yet others expanded that working the

Box 3. Creating meaning

“I feel like I am doing something useful, that I am giving back and also finding a way forward.” (175)

“It’s a lot of manual work but we are satisfied. First for psychological reasons that we have some balance and we are busy, and second that we have some income-earning ability. We get less than what we used to but we are still busy, and that’s very important psychologically.” (113)

“I feel amazing. The feeling of freedom, of satisfaction. I wake up and I am in nature, I enjoy the sun, the rain, the snow, how the plants grow. All of it. I produce something that’s mine, that I did. If you don’t have passion in life, you don’t do anything. I am passionate about what I do. (133)

Selected quotes from different households identified by anonymized ID numbers in parentheses

land is creative, allowing them to learn, experiment, grow and imagine. Reconnecting to nature allowed people to see the future positively (see Box 3, for selected quotes).

5.3.4 Perspective

Reconnection to nature allowed some people (~ 30% of the sample) to contextualize their situation, redefine their place in the world and derive life-teachings from nature, which helped them make sense of the crisis. This finding was also observed elsewhere by Gould and Lincoln (2017). This sense-making ranged from reflections on needed changes in behaviors and habits (e.g. the need to approach life with greater humility or to lower expectations and needs) to a deeper re-evaluation of what life should be about and their own place in the universe (see Box 4a). About 10 percent of people further reflected on their life’s meaning, associating reconnecting to nature to ‘becoming human again’. This re-humanization refers to regaining a good life where they could flourish in a context where social and economic conditions were more and more alienating (see box 4b).

Box 4a. Perspective: life-teachings

“Since I came here I feel that I lost an outer layer of all that I had learned regarding how to be and I slowly filled my core to support my body and my soul. Initially all this filled me with tremendous insecurity. I felt that I had nothing, that all the skills that supported me in Athens were meaningless here. In Athens your identity, your existence, is linked to the work you do, that is how you socialize. Here this does not exist anymore, at least for us—it doesn’t stop for everyone. I had a shock. I kept staring at the sky and wondering what was the meaning. Who am I? But slowly, through time and our work here, I built a more solid foundation” (I57)

“Through gardening, you create but you also need to become humble. I was like a spoiled child saying “I want this, I don’t want that...”. This work taught me to be calmer and to wait for something to mature, to not get things immediately as we are used to. It was a lesson in humility that I needed. And as much as you give land, it gives it back... there is also abundance and richness that takes you away” (I89)

“You learn to live with what there is in nature, in harmony. You slow down and observe [how the world works]. You look at plants and what plants work well together. You live outside, and that’s life above all. Unfortunately for many years now, our path is preset since the day of our birth. You will go to school, then do this and the order of things will have been set by others and you will just follow the rules no matter if you like them. You don’t know if it’s right or if that is what you want. When you go out of all this, when you start being in nature and dealing with things outside this system, it doesn’t concern you anymore. You learn things through what you are doing that no school, university, group of people, restaurant will give you” (I20)

Selected quotes from different households identified by anonymized ID numbers in parentheses

Box 4b. Becoming human again

“Re-humanization... that’s what all this life is about. I feel like I am becoming human again. Here I feel like I can define some things better: what I will eat, what I will drink, the air I will breathe, what I see outside my window, what sounds I hear, how to work, what time to wake up and sleep... The range of possibilities... it’s like living on another planet. I think it’s more natural for humans to live like this. I have the possibility to come closer to nature and to myself through this process. I am getting rid of all the garbage that the city had imposed on me, my education, urban life... I am becoming lighter, [...] my brain is lighter. I consider it a basic right to have access to clean running water, to gather a wild green to eat when I am hungry. These are choices that I cannot fathom not having anymore. (I65)

“I simply feel perfect. One day, my husband and I were working in the mud: we were digging, we were cold, and we were sweaty. It was sunny. My husband said: you are glowing, you are becoming another human. I went to the mirror and I saw my face and I said: you are right, it’s not me” I67

Selected quotes from different households identified by anonymized ID numbers in parentheses

5.3.5 New relationships

Reconnecting to nature led to the creation of new sets of social relationships with people that have shared interests. These new relationships often led to new networks of support, especially among like-minded people, which provided psychological and material support.

People emphasized that through experiential engagement with nature, they were developing new relationships with the land associated with feelings of nurture, care and love, which were often

restorative. They also hint at the emergence of place-specific feelings of belonging and sense of place. These new set of relationships fostered feelings of security and attachment, which helped people continue in their new livelihoods even when faced with difficulties.

Box 5. New relationships with people and place

“Farming changed a lot of things for me. It calms me, I created good relations with people” (I9).

“Due to my interest in farming, I met new people full of positive energy rather than people that are always complaining and depressed. [Before] we were not in these circles, we were in the circles of consumerism. In that regard, the crisis was helpful, part of the change in my life was to build new collaborations oriented around food production and a simpler life.” (I91)

“Touching the earth, the soil is psychological help, I feel happiness. Farming is dealing with a live organism. Trees are like dogs. You talk to trees. I feel love for my trees and I know I will grow old with them” (I101).

“Sometimes I think I would have preferred being a nature photographer but farming you get really attached to the land and you learn to love the place. The former is like an engagement and farming is like a marriage.” (I42)

“If I was harvesting in another field I don’t know if I would feel the same love. I know the trees now, the holes, their rocks, which trees are moody” (I58)

Selected quotes from different households identified by anonymized ID numbers in parentheses

6. Discussion

6.1 Interrelated material and non-material benefits

Environmental safety nets are characterized by their ability to help people cope and adapt to crises in usually relatively short time frames. Turning back to the land did increase people’s security and sense of wellbeing in a very short time span (<5 years), both in terms of material and non-material ecosystem-related benefits (see Table 4.1). These material and non-material ecosystem benefits were inherently interrelated (see Fig. 4.3).

Income security: Acquiring stable and substantial farm-related income requires a well-functioning farm as well as knowledge and other assets that many of these back-to-landers do not have yet, thus challenging the notion of environment-related income security for farm resources given that these are hard to directly access in times of need. Nevertheless, many households still derived some economic benefits that helped them continue into farming. Income from productive trees and

foraging exhibited much more the qualities of environmental safety nets, allowing people to derive quick and accessible sources of income. This is made possible by landscape legacy effects that enabled back-to-landers to access abandoned or inherited orchards and forest commons, products of past land-uses and a history of land abandonment and ageing farming population. This material benefit was interrelated to the feeling of independence and control that people experienced when reconnecting to the land. People turned to land-based activities to derive potential income but also to be “their own boss” and in control of their lives, in a context of high economic and social instability. These non-material benefits (e.g., feeling of security) explains why people persist even though farming may not be the economically ‘rational’ nor the only option, especially over shorter time-frames.

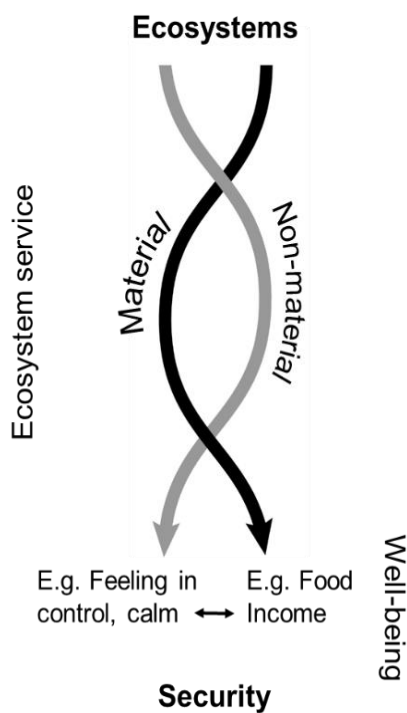


Figure 4.3 Co-production of material and non-material benefits producing security.

Food security: Increasing self-sufficiency was very important to all households but even more so among the poorest. As indicated by the fact that poorer households were more likely to forage for wild greens, medicinal and aromatic plants, mushrooms as well as firewood for self-sufficiency (see section 5.2), environmental safety nets are particularly important for economically vulnerable populations (Angelsen et al. 2014). Almost 80% of households engaged in vegetable production, which did help lower costs of living and provided food. Their importance was also measured however in terms of the many non-material benefits people derived while gardening. More so than any other types of reconnection to land, producing food and increasing one’s self-sufficiency in general made people feel safe. This sentiment was further enhanced

by the fact that people associated reconnecting to land with independence and freedom, which gave them a greater sense of control over their lives.

Mental health: Experiential involvement with land and nature helped people relieve stress and anxiety, and achieve a state of peacefulness and serenity. It is long known that contact with nature yields many health and mental health benefits (Russell et al. 2013; Ives et al. 2017). But the importance of these non-material benefits in times of crisis cannot be overstated given the increased rates of suicide and depression since the beginning of the crisis. Both the calm and serenity that people obtain through their active involvement with nature and the feeling that they are “doing something”, actively building something new and close to their values contributes to positive and restorative mindsets. These restorative spaces are further supported by the creation of new relations with place but also with other like-minded, positive, people.

Perspective and meaning: One of the most important and intriguing non-material benefits is how reconnection to nature helped people make sense of their life and reframe what the crisis means to them. To some extent, living in close connection to nature allowed people to distance themselves from the crisis. As mentioned by one interviewee: “once out, it doesn't concern you anymore”. Whether true or not, this observation illustrates how people are able, through a connection to nature, to increase their feelings of security. This is also linked to the observation that experiential engagement in nature allows people to “put time on hold”, to live for the now. This allows people to free their minds from stress and anxiety and focus their energy on creating new meanings, new relationships and even new futures. These are all elements that build agency (i.e., enhancing capacity), essential qualities in order to cope and adapt to the crisis (Brown and Westaway 2011; Coulthard 2012).²⁶

²⁶ See Chapter II for a more in-depth discussion of agency and transformations.

6.2 Material and non-material benefits: co-produced and mutually reinforcing

Not only are material and non-material dimensions of environmental safety nets intertwined, they are also co-produced, mutually reinforcing one another (see Fig. 4.4). For instance, producing food either for self-sufficiency and/or income (material benefits) is simultaneously associated with psychological benefits such feelings of calm and serenity or feelings of independence and control (non-material benefits), which in turn enable further engagement with land, thus reinforcing, through time, the production of both material and non-material benefits in a positive feedback.

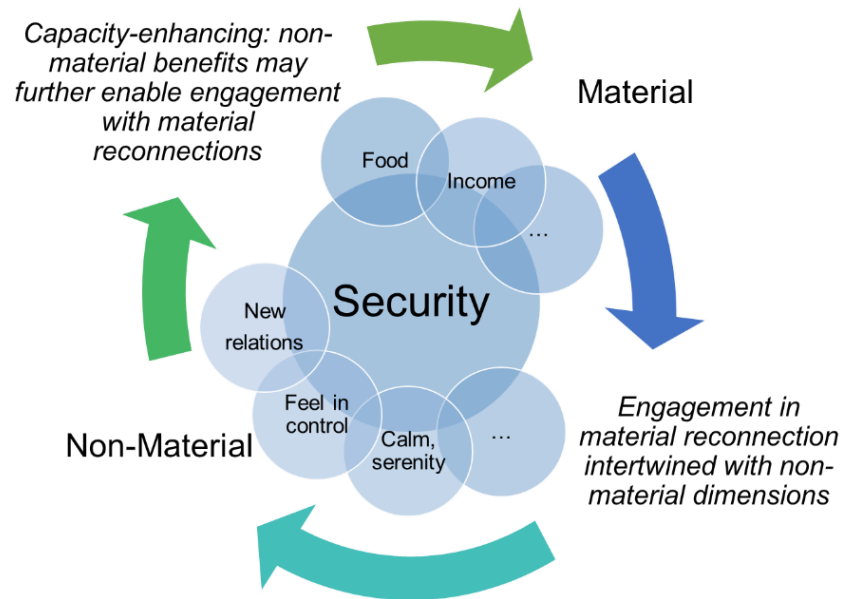


Figure 4.4. Mutually reinforced material and non-material dimensions, which mutually contribute to security formation

This finding has practical implications. Because material and non-material dimensions are often approached as separate, policy and decision-makers evaluate success based on incomplete information, and often over the short term. For instance, the success of newly created (post-economic crisis) community gardens in Greece has been assessed based on their ability to increase food security for the poorest. Yet in practice, non-material benefits have proven to be more important to garden users (Partalidou and Anthopoulos 2016). Even though, need might in some

instances have first motivated people to join these gardens, the creation of communities of practice and support led people to stay even if, producing food might be economically suboptimal (*Ibid*). While the search for income or food (material benefits) may have initially spurred some people to join these community gardens, non-material benefits give meaning to people's efforts, reinforcing their willingness to continue engaging in food production. In time, material benefits may increase at par with non-material benefits, in a mutually synergistic dynamic (akin to what is depicted in Fig. 4.4). For other types of material and non-material benefits we may see trade-offs. All in all, we need to further understand the interrelationships between different types of material and non-material contributions, rather than focus on describing them in isolation.

7. Conclusion

The contribution of ecosystems to security, a core feature of well-being, needs to be assessed based on both material and non-material contributions. Particular attention might be paid to processes of co-production and the interrelationships between different kinds of material and non-material contributions. Doing so would help identify potential synergies to enhance mutually reinforcing dynamics, and in particular processes of capacity-formation, and to identify trade-offs. Furthermore, the non-material dimensions of security, as well as linkages to material dimensions, can be integrated into broader frameworks for understanding human well-being, such as IPBES, enabling a more integrative and genuine understanding of security and wellbeing. This is particularly important because these mutually related material and non-material dimensions shape human perception and responses to social-ecological risks and crises.

Table 4.2. Material and non-material ecosystem benefits related to security

Type of wellbeing	Nature of the safety net/ security	Further description
Material benefits	Income security	While reconnecting to nature provides some income and job prospects, not all households immediately derived economic benefits from the land. Productive tree crops (and foraging) provide sources of income that are more immediately available than other agricultural crops, highlighting the importance of legacy effects.
	Food security	Most households tried to increase their self-sufficiency, and planting a vegetable garden is among the first things that people did. Self-sufficiency is also complemented by tree-related goods (oil, nuts, and fruits) and for rural households, animal-related goods (e.g. meat, cheese, eggs).
	NTFPs such as firewood and benefits obtained while foraging (i.e., wild greens, medicinal and aromatic plants)	NTFPs were particularly important for lower income households that relied on these benefits to lower their cost of living.
Non-material (subjective and relational)	Calm and serenity	Reconnection to nature provides a feeling of calm and serenity that relieves stress and anxiety. Households also mentioned that through experiential involvement with the land they managed to “still time” and “free their minds” and focus on the now rather than worry about the future.
	Freedom and independence	Reconnection to nature was often associated with feelings of freedom and independence. People mentioned that working the land allowed them to be “in control” and be their “own boss” in a context where things are unpredictable and out of control. Improving one’s self-sufficiency in particular gave people strong feelings of security and independence.
	Creating meaning	Reconnection to nature gave meaning to people, allowing them to live according to their values and providing a feeling of fulfillment, joy, creativity and care.
	Perspective	Reconnection to nature allowed people to contextualize their situation, redefine their place in the world and derive teachings to make sense of the crisis.
	New relationships with people and place	Reconnection to nature allowed people to build new social relations through a shared reconnection to nature that provide support and create shared meaning. People engage in new types of relations with the land, leading to nascent sense of place and belonging.

CHAPTER V. Conclusion

This dissertation expands our understanding of social-ecological transformations in times of crisis using the Greek back-to-land movement as a case-study. Each chapter addressed a specific component of the transformational process (see Fig 5.1). Chapter II examined how the crisis led to personal transformations that explain why people chose to go back to the land. Subjective capacities, including people’s experiences, perceptions of risk and opportunity and degrees of self-efficacy (internal agency), were key to explaining people’s motivations. Chapter III showed how people mobilize different sets of assets in order to go back to the land, focusing on their objective capacities (i.e., their resources, knowledge and other measurable dimensions of capacity). Chapter IV looked at how the environment provided material and non-material benefits crucial to people’s wellbeing and feeling of security, which directly relates to the interplay between perception and experiential engagement with nature and subjective dimensions of capacity.

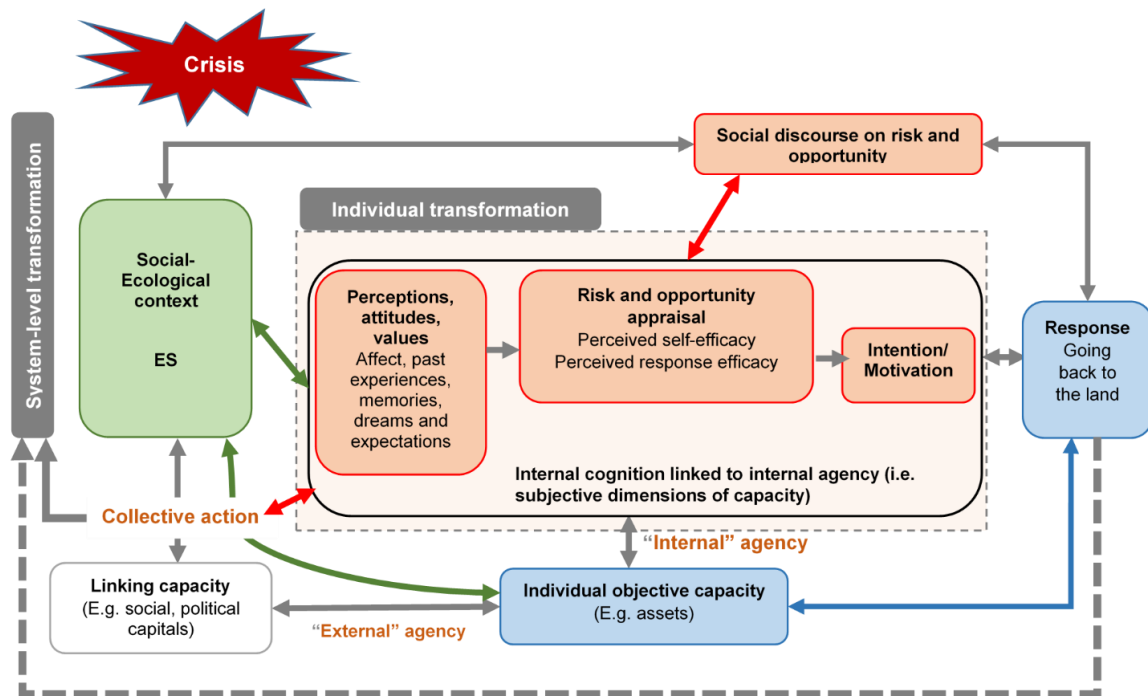


Figure 5.1 Transformation aspects examined in each chapter. Chapter I (orange), Chapter II (blue), Chapter III (green)

More specifically, Chapter II examined why people go back to the land, finding that non-economic motivations (reconnecting to nature, self-sufficiency and the good life) were more frequently cited than economic ones among 76 back-to-land interviewees. This particular point was further explored in Chapter III that looked at material and non-material dimensions of environmental safety nets identified by Greek back-to-landers. Chapter II showed that the crisis changed social discourse around farming, making it easier for people, especially those who might have been thinking about a livelihood change previously, to do so. Agency in response to the crisis led people to view going back to the land as a choice and even an opportunity for radical change. People expressed the view that the crisis had opened up opportunity for greater expressions of creativity and imagination, which gave them strength and helped them plan for alternative futures. Going back to the land was one of those alternative futures for many. Reconnecting to land was also associated by part of the interviewees to a political action, an emancipatory act that gave them back control in a context where they had little control. Last but not least, two main views emerged regarding the transformation potential of going back to the land. Some interviewees believed that change comes from transforming one's self (internal agency), while others believed that it mostly required changing others (external agency). These two views point to very different perceptions of actions needed to bring about change, and to two processes of system-level transformation: deliberate vs. uncoordinated. To conclude, chapter II shows that the crisis led to personal transformations which may or may not, depending on whether collective action and/or individual transformations multiply, lead to system-level change.

Chapter III looked at how people turn back to the land, examining the assets that people mobilized to do so, and how these differed based on different types of back to land strategies. The focus on mobility emerged because one of the key findings of the dissertation was that not all people moved to rural areas in order to reconnect with land-based activities. 55% chose to manage lands while still residing in an urban center. Chapter III identified pathways of livelihood transformations characterized by particular configurations of assets. For instance, people that farmed for self-subsistence tended to be among those with the least prior knowledge about farming. A turn back

to land for them involved learning how to farm and work on the land. Urban gardens were identified as key sites for learning and experimentation for those new farmers. Learning in cities allowed them to then further expand outside of cities. Others already had prior childhood experiences and land to experiment with, which enabled them to move into farming faster. Access to inherited physical capital (e.g., farm machinery and infrastructure) was key for facilitating entry into farming as a profession. This hints at the importance of policies that might help provide accessible physical capital for those that do not have inheritance. Each type of back-to-land typology requires targeted capacity building corresponding to specific needs that back-to-landers have at different stages of farm evolution. Chapter III also looked at the wellbeing and landscape management outcomes of going back to the land. Surprisingly land management did not differ in terms of crop types or farming adopted (>80% organic farming). This can be explained by the fact that people most frequently cited reconnecting to nature as their motivation (Chapters II and IV). These findings highlight the importance of the back-to-land movement for sustainable food systems in Greece. Unfortunately, many of these households still struggle to make a living, and further social, economic and/or political institutional support is needed to ensure the longer-term viability of these back-to-land initiatives.

Chapter IV challenged prior conceptions of environmental safety nets, arguing that non-material ecosystem contributions, in addition to material ones, need to be examined to understand ecosystem-related security and wellbeing. Chapter IV found that people reconnect to nature for food and income but also for the intangible benefits that the reconnection to nature gave them. Those included dimensions that helped with their psychological wellbeing, for instance sense of greater calm and serenity acquired while experientially engaging with land, as well as dimensions that contributed to enhancing their capacity, such as a greater sense of control and independence and perspective. Perspective refers to the ways in which reconnecting to nature may help contextualize one's life conditions. In contact with nature, people felt free, in control, and human again. These intangible, non-material dimensions were very important for back-to-landers given the alienation, stress and anxiety brought about by the crisis.

The notion that non-material, intangible benefits were as important as material ones was another key, cross-cutting finding from this dissertation. People did not go back to the land only to derive income or food as most often portrayed in the media. They did to feel safe, to feel free, to feel human and a host of other motivations that have to do with the search for a good life. Another interesting finding is that reconnecting to nature both requires agency and reinforces it. Chapter II shows how agency was mobilized in order to go back to the land while Chapter III illustrated that the reconnection to the land itself fosters agency and brings capacity, both subjective and objective (e.g., new knowledge, investing in land).

Overall, this dissertation contributed to a more nuanced, context specific understanding of livelihood and human-environment transformations during times of crisis (Wise et al. 2014; Patterson et al. 2015; Pereira et al. 2015; Fazey et al. 2016; Loorbach et al. 2016). The Greek economic crisis opened opportunities for sustainable social-ecological transformations, as illustrated for instance by the fact that the vast majority of these new back-to-landers are relatively young (30-45), interested in organic (and sustainable) agriculture, are passionate about their new livelihoods, and have begun experimenting and engaging more seriously with farming. This is a welcome development in a country that has an ageing population of farmers where farm renewal is an issue, and that is facing record high levels of unemployment, especially among youth. But, the crisis is also a tremendous challenge. It is not known yet how many among these back-to-landers will remain into farming. Some will probably leave, based on the challenges involved in sustaining a living while farming. Others will persist. As noted earlier, broader system-level change will require further collective action between back-to-landers and also between back-to-landers and other institutions. Nonetheless, it is impressive to see how people were able to mobilize and change their lives so rapidly.

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APPENDIX A
INTERVIEW GUIDE

A1. New farmers

Name of interviewee:

Contact information:

Question 1: What motivated your decision to start producing food?

Question 2: Did the economic crisis play a role in your decision to start producing food, how so?

Question 3: Did you cultivate land previously?

Question 4a: Did you have previous experience growing/gathering food?

Question 4b: Do/did you live in a rural area?

Question 5a: Could you please let me know a bit about your background?

Question 5b: What is your parents and grandparents profession, and where do they come from?

Question 6: General garden/farm information *(please fill in the space below the table if you have access to more than 4 gardens/farms)*

Garden/Farm location(s)- <i>(indicate the name of the nearest village/town)</i>	Indicate how far it is from your home <i>(in km and time travelled)</i>	Size of the land plot <i>(in stremma (=1/10 of ha))</i>	Area utilized to produce food <i>(% of garden/farm area)</i>	Used individually or as part of a group <i>(indicate the name of the group)</i>	When did you start using this land plot <i>(month/year)</i>	How did you access this land plot? <i>(land individually owned; family land; rented; bought; part of commons; lent by someone; occupied)</i>	What months do you grow food? <i>(indicate beginning and end of growing season, and the number of seasons (eg. winter, summer etc))</i>	How often do you visit the land plot? <i>(# visits per month; indicate if there are variations summer/winter)</i>

Question 7: What is produced on the land? (*Indicate if you need more space*)

#Land plot + location, if possible get GPS point	What is being produced? <i>Indicate the type of crop, and if possible the amount planted (% of garden/farm, number of plants etc.)</i>	How much is harvested? <i>(in kgs, or other units self-specified)</i>	Where did you get the seed/plant?	Growing season <i>(indicate start and end of each growing season, month/year)</i>	Inputs <i>(what do you put on your crops- compost/fertilizer/other)</i>	Who consumes your production? (<i>family and friends; for sale; for food bank; other (specify)—if it's for a mixed use let me know how much goes to sale vs. self-consumption</i>)

Question 8: How important is your garden/farm harvest for your own self-consumption?

% self-consumption in the summer (from month x to month y)

% self-consumption in the winter (from month x to month y)

Question 9: What type of farming do you practice (conventional, traditional, organic, biodynamic, other):

Question 10: Characteristics of your food producing group (*SKIP if you are not involved in a food producing group*)

Name of food group(s) you are part of	When was the group formed?	How many people are in each group?	How is the group operating (<i>how often do you meet, how are decisions taken regarding garden/farm management, how are tasks divided?</i>)

Question 11: Do you sell or exchange your agricultural products? If yes, where?

Question 12: In case of market exchanges, describe the process of commercialization of your products:

- 12a. how did you find clients?
- 12b. did you have institutional support? (describe)
- 13b. did you have access to credit? (What sources?)
- 13d. how did you deal with the bureaucratic requirements to change professions?
- 13e. is your activity occurring in the formal or informal sector?

Question 12: What are the main challenges that you are facing in your efforts to grow food?

Question 13: What opportunities have emerged that have facilitated your efforts to grow food?

Question 14a: Household activities and demographic information (2014)

Household members	Relationship to you	Date of birth	Education (years completed)	Remunerated occupation(s)	Estimate income (net) + List economic activities	Participates food production (Y/N)	Gender	Knows about food production

14b. could you please give me an estimate of your overall household's net yearly income for the past year and the current year?

14c. what was your job and income pre-crisis?

14d. Do you currently have health insurance?

14e. other assets

- Do you have means of transportation (what)?
- Do you own your house or rent?
- Do you own farm equipment (describe, provide estimate of value)

Question 15: Do you have a village of origin? If yes, how often and for what occasions do you go to the village?

Question 16: *Use and management of other ecosystem services*, besides food production, on your land plot or nearby

- a. Do gather firewood, where and how much?
- b. Did you plant or cut trees- how many, which types of trees?
- c. Do you gather food/medicinal plants, how much and where?
- d. Where do you get your seeds from? (I.e. store, other farmers, from a seed organization); please provide a list of the people/organizations that share seeds with you.
- e. Do you collect your own seeds?
- f. Do you share and/or sell your seeds?
- g. Where is the water you use coming from?
 - i. Do you know how much water is used? If yes, provide an estimate for 2012 and 2013.
 - ii. Did you invest in water harvesting/retaining technologies (ponds, cisterns etc.), if yes when and what did they do
 - iii. Is water an issue in your field/garden?
- h. How do you manage soil?

- i. Do you add inputs, if yes of what kind and in what quantity (compost, organic and inorganic fertilizers)?
 - ii. Did you invest in soil management landscape changes (repair or create new terraces, build mounds etc.). If yes, when and what did you do.
- i. Are you impacted or expect to be impacted by environmental or climate risks (soil degradation, water scarcity, climate change)?

Question 17a: How do you feel when you work in your farm/garden compared to your previous work?

Question 18b: Can you draw your relationship with the land or write a few keywords describing this relationship?

Question 19: *Knowledge networks regarding land management*

- j. How did you learn how to farm (family, friends, formal training, other)?
- k. If you have a problem in the garden/farm (i.e., diseases, pests etc.) who do you consult/contact (specialist, friends, an NGO etc.)
- l. Did you attend a class, training etc., if yes, which one and when? Are you satisfied with the knowledge acquired?
- m. Are you part of an organization (or many organizations) that provides knowledge related to farming? If yes, provide the names.

Question 20 – What is your relationship with the local community, and more particularly other farmers/food producers in the area?

Question 21: Additional information or comments you want to share?

A2. Organizations

1. The nature of their group
 - a. Organized formally vs. informally
 - b. Is it part of a wider movement including organic agriculture, seed movement, fair trade movement, business groups, church or government?
 - c. Where do they operate (geographical scope of their group)
2. The activities that they do to promote a back to land trend
 - a. Does the organization provide access to land; how
 - b. Does the organization facilitate knowledge exchange, if yes, how
 - c. Does the organization provide or facilitate access to inputs (seeds, fertilizers, water), if yes how
3. Whether they collaborate with other institutions and for what purposes.
 - a. Who are they collaborating with, and for what reasons
 - b. Where are their collaborators operating spatially?
4. Their perception of the current back-to-the land trend in relation to wider social-ecological changes currently underway.

APPENDIX B

ASU INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EXEMPTION GRANTED

Billie Turner
 Geographical Sciences and Urban Planning, School of
 480/965-1535
 Billie.L.Turner@asu.edu

Dear Billie Turner:

On 2/21/2014 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Social-Ecologies of Crisis: Assessing the Back-to-Land trend in Greece
Investigator:	Billie Turner
IRB ID:	STUDY00000672
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • consent form english_Feb20.docx, Category: Consent Form; • Consent form greek_Feb20.docx, Category: Consent Form; • HRP-503a - IRB exempt process Karina Benessaiah_Feb20.docx, Category: IRB Protocol; • Interview Guide Back to Landers_Greek.docx, Category: Recruitment Materials; • Interview Guide Experts English.docx, Category: Recruitment Materials; • Interview Guide Experts Greek.docx, Category: Recruitment Materials; • Interview Guide Back to Landers.docx, Category: Recruitment Materials; • Survey_Feb20.docx, Category: Recruitment Materials;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 2/21/2014.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Karina
Benessaiah
Karina
Benessaiah