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ENTREPRENEURSHIP IN THE AGRICULTURAL SECTOR: A LITERATURE REVIEW AND FUTURE RESEARCH OPPORTUNITIES

Abstract

Heeding calls for contextualizing entrepreneurship research and for greater attention to the role of sector in entrepreneurship research, we conduct a systematic literature review of extant research in agricultural entrepreneurship. Recent and rapid vertical integration and rationalization within the agricultural sector provides a dynamic setting for scholars to investigate entrepreneurship theory and practice. We identify three key contextual dimensions of the agricultural sector; identity, family, and institutions, which provide promising opportunities for future research and the potential to contribute to and extend current theoretical and empirical analyses of entrepreneurship research.

Keywords

Entrepreneurship, agriculture, context, systematic literature review, sector studies

INTRODUCTION

An important trend in entrepreneurship research is an increased interest in a more contextualized understanding of entrepreneurship. Zahra (2007:445), for instance, argued that "greater care and creativity in contextualizing our research can enrich future scholarship in the field", while Welter (2011:165) suggested that entrepreneurship is better understood in its historical, temporal, spatial, institutional and social contexts as these both provide opportunities and set the boundaries for entrepreneurship. The calls from these and other scholars (e.g. Gartner, 1985; Zahra & Wright, 2011; Watson, 2013) for more research that deliberately takes context into account have recently prompted studies on the role of different institutional, national and organizational contexts for entrepreneurship. We now know that context influences the available range of opportunities, activities and outcomes and recent studies provide a foundation for theory building and testing regarding where and under what circumstances entrepreneurship takes place (Stam, 2016; Welter & Gartner, 2016). Thus, there is an emerging understanding that context is both an asset and liability and that contextual factors that influence entrepreneurship may in turn be influenced by entrepreneurial actions (Welter, 2011).

Although an increasing number of entrepreneurship studies take context seriously, there are also important contexts that have received limited attention. One such context is sector. The sector, or more narrowly the industry, is often included as a control variable in empirical studies, but entrepreneurship researchers rarely embrace the sector as the main contextual feature in entrepreneurship studies (Shane, 2007). This is a notable limitation since, as DeMassis, Kotlar, Kellermanns and Wright (2016:1) argue, to survive and prosper firms and individuals need to interact in numerous ways with the peers and competitors, customers, regulators and other stakeholders that constitute their sector, but the underlying mechanisms through which the sector context shapes entrepreneurship "remain largely undertheorized and

little understood". To address this limitation and to contribute to a better contextual understanding of entrepreneurship within a relevant sector, we focus on the agriculture sector.

Agriculture is amongst the world's largest sectors, employing over one billion people and accounting for 3% of global GDP (FAO, 2016). Decades of policy reform, agricultural restructuring and the growth of vertical integration within the food and agri-business industries have reshaped the sector into larger farm units, but small family-owned farms have proven resilient (Alsos et al., 2011; Hendrickson et al., 2014; Moreno-Pérez et al., 2011). The sector is now typified both by the persistence of owner-operated farms and by strategically sophisticated approaches to markets and supply-chain relationships that are increasingly adopted by farmers (McElwee & Bosworth, 2010).

Our purpose is to appraise the main themes within agricultural entrepreneurship research and to identify the key contextual aspects of this sector through which entrepreneurship scholars can learn more about entrepreneurship in context. We systematically review published research that has explored entrepreneurship in the agricultural sector, outline suggestions for how scholars can focus their future research in this sector and give contributions to the mainstream entrepreneurship literature.

The review shows that mainstream entrepreneurship research has largely overlooked the agricultural sector. This is curious because while complex market regulatory mechanisms mask the need for individual enterprise and innovation, farmers using their entrepreneurial skills to engage in market-based activities demonstrate a capacity for disposition towards opportunity recognition and business growth (Carter, 1999; Alsos et al., 2011; Grande, 2011). The focus of the few entrepreneurship scholars who have considered the agriculture sector runs parallel to a separate body of work by agricultural economists and rural sociologists. The latter work has provided specialized insights into the traditional operations of the sector but lacks the theoretical framing necessary to generate a broader conceptual understanding of entrepreneurship in the sector. To date, there has been little cross-over between these two

parallel research streams and their separation, rooted in distinctive theoretical origins and empirical approaches, has constrained interdisciplinary collaboration.

Our systematic literature review links these parallel research streams by highlighting main themes and considering key contextual dimensions apparent within the agriculture sector, including the role of identity in entrepreneurial actions in farming; the entrepreneurial capacity of farm families in developing and pursuing opportunities; and the ways in which institutional context both inhibits and enables entrepreneurial engagement. Highlighting how the key contextual dimensions of the agricultural sector can illuminate some of the less well understood aspects of entrepreneurship theory and practice through future research, we also contribute to the literature on contextualizing entrepreneurship and, in particular, the sector context.

ENTREPRENEURSHIP IN THE AGRICULTURAL SECTOR: DEFINITION AND REVIEW METHOD

Entrepreneurship research is concerned with why, when and how individuals identify and exploit opportunities (Shane & Venkataraman, 2000). Exploited opportunities that flow from entrepreneurship result in new offerings that drive the market process and may take the form of existing business growth, new ventures, or the creation of business activity within an existing firm (Davidsson, 2012). This micro-level focus implies the unit of analysis is at the individual, family, team, household, firm or new activity level. We use this definition and focus to include studies from diverse scholarly fields that use different terminology to describe various aspects of the entrepreneurship research domain.

Several existing studies on entrepreneurship in the agricultural sector focus on the ability of farmers to generate new opportunities, organized either as new business ventures or as part of the existing business entity (Bryden et al., 1992). Scholars from both the entrepreneurship

and the agricultural economics domains use the term diversification to describe a strategic and systemic move away from core activities to remain in and grow the business (McElwee & Robson, 2005). Distinctions are made between on-farm diversification (activity as part of the existing farm based business entity) and off-farm diversification (new business ventures outside farming). Agricultural pluriactivity describes farmers' engagement in income-generating activities in addition to 'traditional' agricultural production, and is mirrored by the parallel concept of portfolio entrepreneurship, the simultaneous ownership of multiple businesses, studied within the entrepreneurship domain (Carter, 1998; Alsos & Carter, 2006). These are all examples of entrepreneurial phenomena included in our definition of entrepreneurship.

To identify a valid sample of articles dealing with entrepreneurship in the agricultural sector for the systematic literature review, we used criterion sampling based on keyword searches (Patton, 1990), following an approach used before by other entrepreneurship scholars (e.g. Grégoire et al., 2011; Shepherd et al., 2015). To find articles we used a wide number of search-keyword combinations, which makes sense from a linguistic perspective as scholars from different disciplines use different terms to describe similar phenomena. The search words included (rural) entrepreneur*, innovati*, new venture, diversif*, multifunctional*, or pluriactiv* in combination with farm*, household, or agricultur*.

We first used the syntax in *Elsevier's Scopus®* database and searched through titles, abstracts and keywords, limited to publications from the field of social science. As a further check, we ran the same search through *Thomson Reuter's Web of Science™ Core Collection*. The use of criterion sampling with the search power of these databases had several benefits. First, it provided a fast and efficient manner to scan millions of publications in thousands of journals. Second, conducting searches with databases that include a broad array of journals increases the external validity of our sample, relative to the alternative of manually sifting through a narrower and 'random' list of target journals. Third, criterion sampling allowed us

to build our sample on the words and language with which the authors chose to describe their research on agricultural entrepreneurship. We believe this reduces somewhat the likelihood of missing important contributions and substantiates the robustness of our review. At this stage, the keyword search with the selected databases rendered 1759 hits.

A further criterion for selection, that studies needed to have >10 citations, excluded some potentially influential contributions that were not listed in the Journal Citation Reports®. To minimize bias against relevant and important articles published more recently, we relaxed this criterion for studies published between 2013 and 2015, to >1 citations. This approach provided a representative picture of relevant and influential scholarly research in the agricultural context. We further refined this list by excluding studies that were only conceptual, commentaries or conference papers. At this second evaluation stage, 486 articles remained. In the next step, we read through all 486 abstracts and further refined the list by excluding articles that did not focus on the micro-level or that focused only on off-farm employment (taking jobs) rather than new venture creation (making jobs) or on the adoption of an agricultural innovation (since "adoption" of innovation is not within our definition of entrepreneurship). Articles that focus on the macro-level, by e.g. looking at the agricultural innovation system or landscape preservation were also eliminated. We made exceptions for articles dealing with the impact of institutions on entrepreneurship, since such research often confound micro and macro level issues in the same article. This procedure led to the identification of 76 empirical articles published between 1980 and 2015 that formed the basis of our review.

Table 1 provides a summary of all reviewed 76 articles, highlighting each article's focus, guiding theory or concepts, methodology and key findings. The table represents a comprehensive appraisal of published research in entrepreneurship in the agricultural sector.

-Insert Table 1 Here-

To systematically assess and synthesize the 76 empirical articles, an organizing framework was required to provide an overview of studies. After carefully reading and analyzing the articles represented in Table 1, we divided them into research about antecedents or outcomes of entrepreneurship to structure the review. These two categories were specifically chosen to highlight the articles' common research focus and purpose. Inspired by Payne, Moore, Griffis and Autry (2011) we then classified each article based on whether the antecedents or outcomes were studied on an individual, household/family/firm, or environment level, representing our organizing framework. This resulted in a typology of studies of entrepreneurship in the agricultural sector as shown in Figure 1, which illustrates our framework. Accordingly, one axis of our organizing framework represents the antecedents and the outcomes of entrepreneurship and the other axis represents the level of the antecedents or outcomes; that is individual, household/family/firm, or environment. In this way, each article was assigned to one or more of six cells representing antecedents or outcomes at three levels of analysis. Figure 1 defines each cell, shows the number of studies in each cell, and highlights its dominant theoretical perspective.

The coding process was not mutually exclusive. Some studies have multiple foci, analyzing antecedents and outcomes equally, or multiple levels. Cell 1 captures individual antecedents by farmer types and Cell 2 identifies outcomes for the individual farmer such as entrepreneurial skill or learning. Cell 3 focuses on the antecedents at the household/family and firm level and Cell 4 on the outcomes for the household/family and firm. Cell 5 comprises studies that investigate external antecedents for entrepreneurship and Cell 6 the impact of entrepreneurial endeavors on the external environment. Studies falling into the latter two cells are those that confound a micro and macro level analysis in the same study and are therefore also assigned to a micro level cell. A striking feature of several studies in Cells 1, 3, 4, and 5 is that they do not apply a theoretical framework, but are solely informed

by a literature review on research on entrepreneurship in the agricultural sector. This is labeled as "review on entrepreneurship in agriculture" in Figure 1.

-Insert Figure 1 Here-

Next, we searched for and selected themes based on the organizing framework in Figure 1 and building on Zahra and Wright (2011) and Welter (2011). Three themes emerged - identity, family, and institutions - as particularly central for understanding why, when and how individuals identify and exploit opportunities in an agricultural context. These themes were selected based on how common they were in previous research in terms of frequency (i.e. how often they were directly or indirectly included) and on their conceptual relevance for advancing general entrepreneurship research (see below).

In the following section, we present an overview of the main findings in research on agricultural entrepreneurship, summarized in Figure 1. We then concentrate on the dimensions identity, family, and institutions and highlight their unique roles in influencing agricultural entrepreneurship and opportunities for future research.

AN OVERVIEW OF RESEARCH ON ENTREPRENEURSHIP IN THE AGRICULTURAL SECTOR 1980-2015

Our review identified 36 empirical articles (47,4 %) relating to antecedents for entrepreneurship at the individual level (Cell 1); 11 articles (14,5 %) about outcomes of entrepreneurship at the individual level (Cell 2); 13 articles (17,1 %) that cover antecedents for entrepreneurship at the firm-household level (Cell 3); 30 articles (39,5 %) on outcomes of entrepreneurship at the firm-household level (Cell 4); 13 articles (17,1 %) that deal with

antecedents for entrepreneurship at the environmental level (Cell 5); and finally, four articles (5,3 %) that take up outcomes of entrepreneurship at the environmental level (Cell 6).

We found that entrepreneurship has been employed as a strategy for farm continuation in a context of policy reform, growing retailer concentration and falling incomes and as a way for business development to exploit the changes in the strategic environment (Alsos & Carter, 2006). For some farmers, entrepreneurship provides an opportunity for business development (idea and growth oriented), while for others it represents one of the few available routes to economic survival and retaining their farm-based livelihood (need oriented). A common means for researchers to capture different entrepreneurial approaches adopted by farmers (Cell 1) has been through the creation of typologies that classify farmers into distinct groups based on their individual skills and attitudes (e.g. McElwee, 2008; Haugen & Vik, 2008), characteristics and preferences (e.g. de Lauwere, 2005), goals and motivation (e.g. Windle & Rolfe, 2005, Alsos et al., 2003), values (Niska et al., 2012), or identity (e.g. Vesala et al., 2007). The divide between traditional production and modern multi-functional farms is the most diffused typology. These typologies are a useful means of understanding broad differences between farmers with regards to their approach to entrepreneurship, but have their limitations. The implicit suggestion in several of these typologies that a production orientation forms a barrier to entrepreneurship, while multi-functionality relies upon more strategic and entrepreneurial approaches, understates the complexity of a sector in which production increasingly requires the development of new market channels and unique market approaches, while multi-functionality may simply mask a traditional farm system.

Antecedents for Entrepreneurship at the Individual Level

De Lauwere (2005) identified four types: *traditional growers*, who strive for development through enlargement and specialization and *prudent farmers*, who are characterized by financial conservatism and seen as solely farmers, whereas *social farmers*, have a high social orientation and *new growers*, have a social and growth orientation. Only the two latter types

are seen as entrepreneurs exhibiting self-criticism, leadership, creativity, perseverance and proactivity. By showing how attitudes to land use may explain engagement in entrepreneurship, Bohnet et al. (2003) point to a new category of lifestyle entrepreneurs, often newcomers to agriculture, who regard the rural environment as spaces for idyllic farming through engagement with environment management (Præstholm & Kristensen, 2007). Other studies examine the goals and motivations of farmers engaging in entrepreneurial activities, including enhanced income and profit maximization (Little et al., 2001; Windle & Rolfe, 2005), greater opportunities to contribute to the community (McGehee et al., 2007), and managing rural isolation by meeting new people (Vik & McElwee, 2011). McGehee and Kim (2004) reported the desire to fully utilize resources and educate consumers as farmers' primary motivations, while Kinsella et al. (2000) found socio-cultural and emotional reasons to be a main motivator, depicting entrepreneurship as a livelihood strategy in agriculture. These findings in Cell 1 offer a useful basis for creating broad categories of motivations and approaches associated with entrepreneurship in the agricultural sector. As such they also serve as a first step to understand farmers' identity. But these descriptions lack the analytical depth required to contribute to the mainstream entrepreneurship literature.

Antecedents for Entrepreneurship at the Firm/Household Level

Studies in Cell 3 show that agricultural entrepreneurship is not only a matter of individual interests and competencies, but is influenced by the farm's business structure and financial condition (Bateman & Ray, 1994). Pope and Prescott (1980) *inter alia* found that new business activities typically occur on older, larger-sized farms (Bateman & Ray, 1994) and that profitable farms tend to specialize in agriculture, while Barbieri et al. (2008) showed that the more diversified the farm, the greater the farm family's attachment to and involvement in farming. Farmers engaged in entrepreneurial activities tend to prefer their own resource base, typically related to family and kinship where farmers test new opportunities, bricolage-style, with small scale 'experiments' (Alsos et al., 2014), rather than losing control through external

venture funding (Hansson et al., 2012). Hence, an important finding in this research is that family composition and involvement in the farm can be an important incentive for entrepreneurship (Meert et al., 2005; Alsos et al., 2014).

The probability of observing opportunities is strongly related to farm type (e.g. livestock, crop cultivation), with diversification associated with less specialized, arable farms (McNally, 2001). Moreover, Alsos and Carter (2006), found that resource transfer between an existing farm and a new venture is mediated by the farm's resource endowment as well as similarities in the activities of the farm and the new venture; resource transfer is facilitated when the new business venture is close to core farm activities and the farm is resource rich. These findings are illuminating as they support the notion of family as an essential resource pool and the view of the agricultural sector as comprising a heterogeneous array of entrepreneurs and firms with varying degrees of flexibility which approach opportunities in different ways.

Antecedents for Entrepreneurship in the External Environment

Landscape patterns, farm location (Pfeifer et al., 2009), rural attractiveness (Lange et al., 2013), proximity to an urbanized area (Little et al., 2001; Barbieri & Mahoney, 2009), climate or soil conditions (Pfeifer et al., 2009), environmental problems (Buechler & Mekala, 2005), farmers' social networks (Ferguson & Hansson, 2015; McKenzie, 2013) and presence of farmers' markets (Hinrichs et al., 2004) are environmental antecedents that have been found to drive new business opportunities and innovation (Cell 5). In line with mainstream entrepreneurship literature, Clark (2009) showed that entrepreneurship is often supported by farmers' social networks providing generic business advice to help identify and develop new business activities and to mobilize knowledge and other resources. Interestingly, the review revealed that political structures (Maye et al., 2009), institutional and cultural structures (Stenholm & Hytti, 2014) and professional networks (Ferguson & Hansson, 2015) appear to inhibit entrepreneurial efforts. Thus, research categorized in Cell 5 importantly shows that factors in the institutional environment are crucial contextual features of the agricultural

sector that influence farm entrepreneurship. What matters here is that farmers who successfully engage in entrepreneurship manage both to withstand pressure from informal institutions and navigate the industry's formal rules and regulation.

Outcomes of Entrepreneurship at the Individual Level

The outcomes of entrepreneurship in the agricultural sector focus primarily on the firm-household nexus. Explaining farm performance and forms of entrepreneurship are goals for studies evaluating outcomes. While farms may struggle to build appropriate networks and strategic alliances for pursuing new opportunities, they need to develop appropriate capabilities, learn about and integrate external resources and knowledge to be successful (Grande, 2011). As studies in Cell 2 depict, the individual learning process that results from networking (Chiffoleau, 2005; Oreszczyn et al., 2010) and education (Pyysiainen et al., 2006; Zossou et al. 2009) has been identified as an important outcome of engaging in entrepreneurship in the agricultural sector. Seuneke et al. (2013) examined entrepreneurial learning within the change processes required to progress from a production-oriented to a diversified farm business, identifying three major areas: re-developing an entrepreneurial identity; crossing the boundaries of agriculture; and 'opening up' the family farm. This suggests in line with mainstream entrepreneurship literature that farmers can act entrepreneurially and develop new skills and competencies through practice and education building an entrepreneurial identity, to survive and grow (de Wolf et al., 2007).

Outcomes of Entrepreneurship at the Firm/Household Level

Cell 4 shows that agriculture-based new ventures differ in how they are tied to core farm activities as well as in their economic and social impact. An important finding from these studies is that entrepreneurship in the agricultural sector takes various forms, such as diversification into food processing, new crop cultivation, and engagement in retail and agri-tourism businesses. Farms experiencing less favorable financial conditions, i.e. lower liquidity and lower returns on assets, have been associated with diversification into activities outside

conventional agriculture (Hansson et al., 2010). Carter's (1999) study described the entrepreneurial outcome of farms' strategic choices as a spectrum from *monoactive producers* who maintain traditional agricultural practice of mixed farming, *structural diversifiers*, who develop an activity beyond traditional agriculture; to *portfolio owners*, who follow a dual strategy of niche specialization in agricultural subsectors and diversification of other business interests. Walford (2003) showed that many agricultural businesses traditionally favor choices closely related to conventional agriculture and that engaging in such activities leads to a gradual decline in the relative importance of the farm's traditional agricultural activities. Because of fluctuating conditions within agricultural sub-sectors, farmers have, over time, embraced entrepreneurial activities and an increasing number engage in non-agricultural products and services (Walford, 2003).

Despite a growth in the number of farms developing new ventures, the reviewed studies show that these activities typically contribute only a minor amount of the total revenue in large farms (Hanson et al., 2010; McNally, 2001), but provide increased net income with both short- and long-term gains in smaller farms (Rønning & Kolvereid, 2006; Haugen & Vik, 2008; Grande et al., 2011; Testa et al., 2014). Clark's (2009) study suggests that a reduced dependence on agricultural subsidies may be a favorable outcome of farm-based entrepreneurship.

Outcomes of Entrepreneurship for the External Environment

The studies in Cell 6 point towards additional benefits of entrepreneurial activities including an amelioration of the effects of resource scarcity (Buechler & Mekala, 2005) and environmental impact (Ventura & Milone, 2000; Barbieri, 2013); increased employment and improvements in rural development (Carter, 1999); and enhanced opportunities for people to remain in rural areas (Kinsella et al., 2000). In this regard, a key conclusion from these studies is that farm-based entrepreneurial activities create synergies between food production and the

delivery of other services, such as landscape maintenance, culture and tourism within the rural economy and community (Ventura & Milone, 2000; Barbieri, 2013).

These studies highlight how entrepreneurial action can bring together benefits for individual, farm and environment. What matters here is that the entrepreneurial consequences are diverse and wide-reaching simultaneously cutting across levels - an issue that has not yet been well elaborated within entrepreneurship research.

Context Dimensions of Entrepreneurship in the Agricultural Sector

The previous section provided an overview of the most common approaches in the research literature on entrepreneurship in the agricultural sector. In this section, we focus on three key contextual dimensions that emerged as particularly important in understanding the uniqueness of the agricultural sectors: identity, family and institutions. The dimensions emerged as they represented recurrent characteristics and themes in terms of frequency, that is, they were commonly directly or indirectly included in previous research (see below for specific numbers for each dimension). In addition, they were selected based on their conceptual relevance for advancing general entrepreneurship research. In what follows, we discuss how scholars have addressed these dimensions and offer a contextualized understanding of entrepreneurship in the agriculture sector. At the same time, we set the stage for the following section where we outline suggestions for future research in this area.

Identity

Research on identity focuses on how individuals come to see and understand themselves as entrepreneurs, rather than evaluating entrepreneurs by means of their characteristics (c.f. Farmer et al., 2011; Fauchert & Gruber, 2011; Shepherd & Haynie, 2009). Identity concerns the values and attitudes that underpin motivations, goals and intentions with engaging in entrepreneurship. Identity is explicitly studied in seven articles and partly included in six studies about skills/competencies, seven studies of farmer types, six articles about

psychological constructs such as attitudes, one study about values and fifteen articles focused on various aspects of farmers' motivations.

A farmer's identity is traditionally associated with stewardship (looking after and taking care of the land) and kinship (keeping one's name on the land), and this is clearly reflected in the types of opportunities they pursue (Vesala & Vesala, 2010; Alsos et al., 2014). Differences in individual values, goals and attitudes lead farmers to pursue different strategies with diverse entrepreneurial outcomes. Some farmers maintain a singular (farmer or entrepreneur) main identity, while others exhibit both identities to varying degrees (McElwee 2008; de Lauwere, 2005). Agricultural portfolio entrepreneurs tend to have a stronger entrepreneurial identity compared to traditional production-oriented farmers (Vesala et al., 2007). Regardless of whether the 'farmer' or the 'entrepreneur' identity is dominant, they retain a strong commitment to the occupation of farming (Barbieri & Mshenga, 2008), and identity is therefore an important contextual dimension of agriculture. For example, a strong agricultural identity is associated with activities that assume special, symbolic value, such as producing milk or growing crops, and this identity is severely challenged when these business activities are no longer competitive (Brandth & Haugen, 2011). Exploring the self-perceived identities in farms that have diversified into agri-tourism, Di Domenico and Miller (2012) highlight differences between *modifiers,* who defined themselves as farmers and *switchers*, who defined themselves as tourism entrepreneurs. In general, the farmer identity remains strong despite farmers' diversification activities, though Cassel and Pettersson (2015) found tensions and conflicts of identity among those pursuing agricultural production and agri-tourism. Thus, identity is crucial for understanding the social context of entrepreneurship in this sector, as new business activities are often triggered by the identity, values, and goals of farmers (Niska et al., 2012; Hansson et al., 2013), where entrepreneurship is experienced as fitting in their 'world' and allowing them to remain true to their 'agricultural roots' (Alsos et al., 2003).

Farm-based entrepreneurship has sometimes been labeled lifestyle entrepreneurship (Gasson et al., 1988); a concept that underscores identity and the presence of non-financial goals in agricultural entrepreneurship (Vik & McElwee, 2011; Nickerson et al., 2001). Here, scholars have portrayed farmers as lifestyle entrepreneurs who are neither wealth-seekers nor financially independent hobbyists. Entrepreneurship can enhance life-quality through owning and operating a business closely aligned to personal values and interests (c.f. Barbier & Mahoney, 2009; Vik & McElwee, 2011) and be a *life strategy* (Hansson et al., 2013; Ilbery, 1991) fueled by the need to earn a respectable living, but modified to maximize satisfaction, happiness and flexibility in their work, family and community roles (c.f. McGehee & Kim, 2011). These studies focused on identity provide interesting insights into lifestyle entrepreneurship within agriculture.

For instance, from a social-psychology perspective, identity as a lifestyle entrepreneur implies that entrepreneurial choices are based on personal interest and aligned with the primary goal of having a 'good life', keeping the farm business 'healthy and in good shape', ideally resulting in loyal devotion to the business as well as interest beyond simply financial rewards (Alsos et al., 2014). This research indicates that self-actualization and intrinsic motivation may propel agricultural entrepreneurs to seek opportunities for personal achievement and farm survival, which confirm a sense of who they are (c.f. Di Domenico & Miller, 2012). Hence, identity in the context of agriculture provides a valuable lens through which to improve our understanding in meanings entrepreneurs assign to their entrepreneurial endeavors and ambitions.

Prior studies have stressed the importance of stewardship in the agricultural sector. Stewardship is associated with the farm being a family home, often for generations, a sense of belonging and attachment to the land. The tradition of 'looking after the land' and 'keeping the name on the land and farm' suggests it is difficult to shift out of agriculture into other sectors. Agricultural entrepreneurs are thus emotionally wedded to their farm and rural

community, and prefer to develop new businesses based on farm resources and capabilities (Gasson et al., 1988; Alsos et al., 2014). Selling or losing the farm not only implies a loss of identity, it invokes a sense of failure and shame among many such entrepreneurs (e.g. Cassel & Pettersson, 2015; Stenholm & Hytti, 2014; Brandth & Haugen, 2011). Retaining ownership and avoiding an exit from the business may, therefore, be a prime driver of entrepreneurship in the agricultural sector; a rather different scenario than in many other sectors where exit is often considered the natural final stage of the entrepreneurial process (DeTienne, 2010).

Family

The review highlights the centrality of the *family unit* to farm-based decision-making. While many studies of entrepreneurship in agriculture assume that the entrepreneur is an individual farmer, farms often depend on collective family efforts. Almost all farms are family-owned and often family-operated businesses. This means that they are owned and/or managed by members of a single nuclear family or several related nuclear families. Many farms have been family businesses for a long time, and the involvement of several generations firmly rooted in the family and household context is common. While only two studies in our review explicitly focus on the farm family (Alsos et al., 2014; Hansson et al., 2013), the majority (64 studies) refer to the family or household associated with the farm.

Passing on the business to the next generation is more common in the agricultural sector than other sectors (Jervell, 2011); however, while family succession is the preferred choice, this does not mean that the farm remains static after succession. Subsequent generations tend to introduce more modern farm and business practices and are more likely to pursue new opportunities (Carter, 1999). Indeed, Carter's (1999) study demonstrated that farm succession included both the inheritance of the farm land and the inheritance of a tradition of new farm ventures, the form of which would vary across generations. The literature review reveals that the role of the family in initiating, shaping and resourcing new farm-based ventures is an increasingly popular theme in entrepreneurship studies in the agricultural context (Alsos et al.,

2014; Jervell, 2011; Alsos et al., 2003). Farmers have been found to engage in entrepreneurial activities drawing on their existing resource base, typically related to household and kinship ties (Alsos et al., 2014). Agricultural entrepreneurs engaged in new venture creation may thus be more accurately portrayed as 'farm family entrepreneurs' or 'enterprising families', as the family or household unit is the social and economic heart of the farm's operation and ownership (Pritchard et al., 2006; Alsos et al., 2014). Indeed, recognition of the farm family's role in developing and sustaining new ventures based on the farm has been a longstanding feature of the agriculture economics literature (Gasson et al., 1988).

From a family perspective, prior research depicts entrepreneurship in the agricultural sector as an adaptation of both a family and a business to changing competitive conditions as well as evolving income needs, preferred occupational activity, and the availability of spare resources (e.g. Hansson et al., 2013). This suggests that entrepreneurial activity in agriculture is influenced not only by the business lifecycle but also by the family's lifecycle. Here, scholars have shown that motives for engaging in entrepreneurship shift depending on the life stage of the family and the business (e.g. Ollenburg & Buckley, 2007; McGehee et al., 2007; Barbiere & Mahoney, 2009; McGehee & Kim, 2004). For example, Hansson et al. (2013) found that key motives for family farm entrepreneurship included both 'business development for social and lifestyle reasons' and 'business development to reduce risk and to use idle resources'. The finding that farm families can be lifestyle entrepreneurs indicates that the role of identity as discussed above is not just relevant at the individual level, but also at the group level (McGehee & Kim, 2004).

In a similar vein, Ilbery et al. (1996) found that succession influences farm household decision-making to the point that future succession is prioritized over immediate financial success. The desire to preserve the farm for their children becomes a central issue (Ollenburg & Buckley, 2007), which can constrain entrepreneurship in the agricultural sector, but can also become a key driver for pursuing business opportunities to create employment for family

members and to keep the family on the farm (McGehee & Kim, 2004, Barbiere & Mahoney, 2009) even when profitability is low (Glover & Reay, 2015). Specific family lifecycle events like marriage and divorce may also affect agricultural entrepreneurship, as spouses and partners can energize the business with new competences, networks and ideas (e.g., Bock, 2004). This is in line with the idea that an advantage of the family farm may be the ability to mobilize family labor to pursue new opportunities (Carter, 1999).

Despite structural changes in the sector and economic pressures toward large-scale, industrial farming, extant research shows that family-owned farms persist largely because of family composition and involvement (e.g., McNally, 2001; Meert et al., 2005) and the close ties between family members and the farm (e.g., Barbieri et al., 2008, Alsos et al., 2015). Inheritance, succession and emotional attachment to a farm remain key issues for entrepreneurship in this sector. Entrepreneurship provides the opportunity to search for alternative ways of supporting the family's income and create new income streams (e.g. Grande et al., 2011; Rønning & Kolvereid, 2006; Haugen & Vik, 2008) to sustain the family's ability to remain on their land (López-i-Gelats et al., 2011).

Institution

All 76 articles underline the agricultural sector's highly institutionalized context, apparent in both formal and informal institutions (North, 1990) and in the major structural changes that characterize the sector. In keeping with Welter (2011), prior research reveals that formal (e.g. political and legislative) and informal (e.g. norms, values and attitudes) institutions are contextual characteristics that can both facilitate and constrain entrepreneurial activities in the agricultural sector (de Wolf et al., 2007; Stenholm & Hytti, 2014).

A defining characteristic of agriculture and a feature distinguishing it from many other sectors is the high level of policy support given to the sector. Despite a long tradition of self-reliance and entrepreneurship, post-war agricultural policy helped transform farmers into producers reliant on price, production and income support (Morgan et al., 2010). As the

OECD (1994, p. 62) explained, farmers became "locked into a dependency situation where the crucial factor in their success [was] not business acumen so much as their effectiveness as a political lobby". However, the institutional force represented by agricultural policy reforms implemented in the mid-1990s at national, regional and local levels, triggered radical structural change and the transformation of the sector. Studies show that such sector-level institutional changes were directly influenced by new policy frameworks and new technologies, and by alterations in norms and attitudes, presenting both opportunities and challenges for entrepreneurship in the agricultural sector (de Wolf et al., 2007; Niska et al., 2012; Stenholm & Hytti, 2014).

Regarding formal institutions, some scholars highlight how incentives implemented at the European policy level may act as barriers to entrepreneurship in the sector (e.g. Maye et al., 2009). The decision to tie Single Farm Payments (SFP) to land rather than production has been found to inhibit entrepreneurship (Nickerson et al., 2001; Maye et al., 2009), in so far as it removes the pressing need for farmers to search for new business opportunities and establish direct market-based relationships. Despite calls for greater engagement in entrepreneurship among farmers, it has been suggested that their effectiveness as a political lobby remains potent and efforts to increase SFP levels might be more attractive than the pursuit of their own business opportunities (Maye et al., 2009). Other studies have shown that when policymakers promote local agriculture, farmers are encouraged to start direct marketing, processing or farm-tourism activities (Vandermeulen et al., 2006). In this regard, one study found that trust in the government is an important explanatory factor for engagement in nature conservation and tourism, but not for new on-farm activities and services (Jongeneel et al., 2008). Another study found that as carriers of institutional norms, professional networks, advisors to farming associations, and bankers and accountants, can hinder entrepreneurship, as the value farmers placed on the advice they received from these

actors was negatively associated with the creation of new ventures (Ferguson & Hansson, 2015).

Institutional changes in the agricultural sector have been mainly gradual and incremental, particularly within informal institutions. Norms and values associated with 'producer exceptionalism' are deeply embedded within farming (Halliday, 1989; de Wolf et al., 2007). These findings indicate that long-held traditions and habits can obfuscate new business opportunities while social peer pressure may inhibit their realization. Here, the informal institutional environment and social norms contribute to the legitimacy of farmers developing new business ventures. 'Producer farmers' and 'entrepreneur farmers' reflect and interpret their institutional environment differently when considering how to run their businesses (Stenholm & Hytti, 2014). The producer-farmer sees an institutional environment that requires business to be undertaken within traditional boundaries and taken for granted ways of operating a farm, with legitimacy reflected in the prevailing norms and values of the local community. In contrast, the entrepreneur-farmer actively seeks business growth and development regardless of social norms and the institutional environment.

In sum, the agricultural sector is characterized by specific informal and formal institutions that may both facilitate and constrain entrepreneurship. Despite policy liberalization, agriculture remains one of the most highly regulated and institutionalized sectors. In this regard, the agricultural sector offers an appropriate setting to understand how entrepreneurship is influenced by a simultaneously stable and changing institutional framework.

OPPORTUNITIES FOR FUTURE ENTREPRENEURSHIP RESEARCH IN THE AGRICULTURAL SECTOR

The three contextual dimensions identified and discussed (identity, family, institutions) cut across units of analysis and influence entrepreneurship in the agricultural sector in different

ways. As described in the previous section, these three dimensions capture distinctive features of the agricultural sector that help to understand entrepreneurship in this sector. Thus, focusing research on these dimensions will improve our understanding of the role of context for entrepreneurship as well as how and why context impacts, or is impacted by, entrepreneurial activities (Welter, 2011). In this way, the agricultural sector is an appropriate setting for addressing entrepreneurship as a multilevel phenomenon in which distinct dynamics shape the processes involved and their outcomes (Zahra, 2007).

In the next sections, we focus on each of the three-specific context-dimensions in more depth to identify and discuss detailed opportunities and questions for research that can inform the mainstream entrepreneurship literature. We also discuss how our understanding of entrepreneurship can contribute to research in the agricultural sector. Finally, we discuss further research gaps and potential research avenues for entrepreneurship.

Entrepreneurial Identity

Within the mainstream entrepreneurship domain, research on entrepreneurial identity considers that entrepreneurial activities impart meaning, and that they are thus an expression of an individual's identity or self-concept (Cardon et al., 2009; Fauchart & Gruber, 2011; Cardon et al., 2013). Social aspects of an individual's self-concept are central to entrepreneurship research, since new venture creation is an inherently social activity (Fauchart & Gruber, 2011). New ventures are intimately intertwined with the entrepreneur's identity (Shepherd & Haynie, 2009) and entrepreneurial identity is central to entrepreneurial passion (Cardon et al., 2013).

At least two research gaps in the entrepreneurial identity literature can be addressed by studying the agricultural sector: first, the role of identity in entrepreneurial motivation processes that are behind entrepreneurial intentions, behaviors and actions and second, the development of entrepreneurship related self-identities (Obschonka et al., 2015). Few studies address how entrepreneurial identity is constructed and how entrepreneur identities come to

being, in addition to the dominant focus on the description of individuals' identity (e.g. Donnellon et al., 2014; Farmer et al., 2011). Watson (2009) calls for more entrepreneurship research that relates concepts of self-identity and social identity; that is, the way a person characterizes her or himself (self-identity) and the way others characterize this person (social identity). Here, authenticity, in the form of a fit between role and social identity, becomes important as a vital 'qualifier' of identity (Lewis, 2013). Authenticity can also be conceptualized as the commitment to self-values (Erickson, 1995), i.e. being true to oneself (Ashforth & Tomiuk, 2000) and understood by others as being honest (Costas & Fleming, 2009).

Hence, research in the agricultural sector can contribute with knowledge about how and why self-identity plays a vital role as a driver for entrepreneurial activities both because of its motivational effect and by way of its interplay with social identity. A farmer's identity, often formed through growing up on the land, provides farmers with a sense of who they are, in relation to social groups and roles, giving meaning to their life and a sense of belonging (Newby, 1979; Gasson et al., 1988). Our literature review highlights the idea of self-identity as a compass helping farmers navigate their way as entrepreneurs. In the agricultural sector, it seems appropriate to further disentangle selection and socialization effects. As noted earlier, Carter (1998) observed that some farmers both inherit the land and a tradition of pursuing other additional, market-focused, activities on the land. In this regard, researchers can study if and how entrepreneurial self-identity is the result of entrepreneurial activity during their working life or the result of developmental processes that pre-date the entrepreneurial activity (c.f. Obschonka et al., 2015).

Since the construction of identity is bounded by the specific social context unique to the agricultural sector, as well as to the household and family, searching for new venture opportunities, entrepreneurs must adapt to their social resources. Identity is thus likely to be constructed through the everyday practices of farmers, characterized by family heritage and

the processes of history that shape the practices and meanings of farming (Newby, 1979; Gasson et al., 1988). Burton (2004) points out that the 'audience' for farmers is other farmers. For a farmer, how well the business is managed, how the fields are cultivated, or how productive the crops are, is crucial to entrepreneurial identity. This is what governs other farmers' impressions, gives status and confirms identity in relation to other farmers (Brandth & Haugen, 2011). These social aspects are likely to be of importance in entrepreneurship. For instance, are farmers motivated to create new ventures out of economic self-interest or because of subjective norms? What role does place and location play in this process? Further, how does the next generation of entrepreneurs in this sector form their identity, given their own and their family's history and the setting that the sector constitutes? In this regard, entrepreneurship research can add to the understanding in this sector by its focus on entrepreneurial motivation and intention related to identity. We summarize the above discussion in three broader research questions that can guide future research:

Research question 1: How do agricultural entrepreneurs build an entrepreneurial identity?

Research question 2: How and why does entrepreneurial identity impact the entrepreneurial process in the agricultural sector?

Research question 3: How are the individual/family/farmer/entrepreneur identities related in the pursuit of business opportunities in the agricultural context?

Family Entrepreneurship

Randerson et al. (2015) suggest scholars to explore family entrepreneurship as the intersection of the fields of family, family business and entrepreneurship. Family ownership, family management, and the family influence on entrepreneurial ventures distinguish family firms from other types of firms. Entrepreneurial activities of individuals are often rooted in the family context and the continued entrepreneurship in family firms depends on the entrepreneurial behavior of individual family members or the family as group and team (Nordqvist & Melin, 2010). Family firms are the most common type of organization, and

many owner-families develop entrepreneurial strategies as they grow a business or build portfolios of businesses (Zellweger et al., 2012). It is often in the family that the first entrepreneurial behaviors incubate (Steier, 2009). This makes families the most common type of entrepreneurial teams (Aldrich & Cliff, 2003; Nordqvist & Melin, 2010) where family members offer resources to the new firm, such as labor, advice, funds or moral support (Dyer, 2006).

This understanding on entrepreneurship in family business can add to the agricultural context and might be used as a springboard for future research on this dimension. Most firms in the agricultural sector are owned and many operated by families, which means that more than any other kind of economic activity, agriculture occurs in a family context (Gasson & Errington 1993; Alsos et al., 2011). Thus, to neglect the direct role of family on entrepreneurship in the agricultural sector is likely to limit our understanding, and this contextual feature suggests that entrepreneurship research can learn about the role of family by studying agriculture. As an example, a family embeddedness perspective (Aldrich & Cliff, 2003) on entrepreneurship in the agricultural sector has a large potential to contribute to the mainstream entrepreneurship field enabling consideration of multiple levels of analysis.

But entrepreneurship research taking the family context dimension into account and focusing on the agricultural sector can also contribute to the entrepreneurship literature in other areas. For instance, the agriculture sector is an appropriate context for studying how family and household factors (e.g. family's cultural orientation and financial situation) affect entrepreneurship, or how entrepreneurial activities, including not just success but also failures, influence the family or a household. A further significant research area is related to entrepreneurial passion and life-style ventures (e.g. Cardon et al., 2009) where our detailed knowledge of entrepreneurship can help to better understand agricultural entrepreneurship. Many active farmers are passionate about developing their venture as a family business, while at the same time facing difficulties in delivering sufficient financial performance to sustain a

family (Glover & Reay, 2015). Future research could consider the reasons why a family continues to own and operate a business in this sector despite the existence of more financially rewarding sectors and occupations. For instance, to what extent is the decision to operate in the agricultural sector related to passion and a lifestyle choice and how does passion for a business and lifestyle priority develop over time and with what consequences for the family and the business?

Focusing on the family also provides unique contributions to the entrepreneurship literature in succession and ownership transitions, i.e. when a new generation of entrepreneurs takes over the firm from a senior generation (Nordqvist et al., 2013). Specifically, the agriculture sector offers a setting where it is common to find several generations of the same family active in businesses that are centuries old. Such a long history creates traditions, norms and values that form a legacy related to the sector that can both hinder and facilitate entrepreneurship (Jaskiewicz et al., 2015). Following new venture development and succession processes over time may provide insights as to how senior generations influence the entrepreneurial capabilities, decision-making and exploitation of resources in the next generation. These influences may be positive or negative and might mediate or moderate the ability for new generations to grow and diversify depending on e.g. proximity and physical presence of older generations.

Here, it is also appropriate to consider the role of gender. Agriculture is often described as a sector where a clear majority of business owners are men, but a growing number of women are inheriting the family farm. Research could focus on understanding the effects of family culture in constraining or providing opportunities for women to become entrepreneurs in agriculture, and the broader effects of female inheritance of farm businesses. More knowledge about the gender dynamics in such a male dominated sector would certainly provide insights of general interest in the areas of gender roles and female entrepreneurship (cf. Bock, 2004).

In sum, the agricultural sector offers an ideal sector context to explore the role and impact

of family as both resource and liability that influences the pursuit of business opportunities. Here, existing mainstream entrepreneurship studies should be considered to provide further insights for the agricultural entrepreneurship literature. We summarize the above discussion in three broader research questions that can guide future research:

Research question 1: How do family, household, and kinship factors influence or become influenced by entrepreneurship in the agricultural sector?

Research question 2: What are the reasons for and results of a family entrepreneurial orientation in agricultural firms?

Research question 3: How does succession impact entrepreneurship in family owned firms in the agricultural sector?

Institutions and Entrepreneurship

Recent studies have demonstrated the influence of institutional factors (Welter, 2011; Zahra & Wright, 2011), and the interconnected role of national, regional and local contexts (Lang, et al., 2014; Thornton et al., 2011; Veciana & Urbano, 2008; Marquis & Battilana, 2009) on entrepreneurship. Institutional perspectives on entrepreneurship have emerged as a promising approach to understand the interrelationship between context and entrepreneurial activities such as opportunity development and new venture creation (Jennings et al., 2013; Bruton et al., 2010) including in rural settings (Marti et al., 2013). Nevertheless, Autio et al. (2013) argue that there is a dearth of studies exploring the effects of local and societal institutional practices on entrepreneurial behaviors, while Trettin and Welter (2011) observe that the socio-spatial contexts in which entrepreneurs operate daily are largely absent in the entrepreneurship literature. Other studies emphasize the complexities in conceptualizing the relationship between (new) regulative institutional frameworks and traditional cultural values predominant in the countryside (Lang et al., 2014; Marti et al., 2013). Lang et al. (2014), for example, show that the impact of regulative institutions on entrepreneurship in rural settings is almost replaced by specific place-dependent normative and cognitive institutions and that

the fit between these institutions is crucial for the emergence of agriculture-based entrepreneurship.

Studying the agricultural sector can significantly improve our understanding of institutionalism. Given the history of policy support and recent reforms, the agricultural sector is a particularly apposite setting to study how the interplay between formal and informal institutions at different levels (sector, region, and nation) affects entrepreneurial activities at the micro level (Wyrwich et al., 2016). New insights may be yielded regarding how the failure to align formal and informal reform may undermine entrepreneurship (Williams & Vorley, 2015), and how 'institutional asymmetries' impact different generations of entrepreneurs by focusing on informal institutional change on younger compared to more established entrepreneurs. Kim and Li (2014) suggest that legal institutions may promote supportive conditions for business creation. The agricultural sector demonstrates why this relationship is not always straightforward and thus may help researchers to develop a richer understanding of the role of institutions for entrepreneurship. As a sector characterized by a strong regulatory framework, agriculture provides an important setting to explore how different regulative, normative and cognitive aspects interact and influence entrepreneurship.

Extant research on entrepreneurship in the agricultural sector indicates that it is important to consider how external and environmental factors facilitate or impede the entrepreneurial process. Although we note recent progress, there is still much to be done in this area. Entrepreneurship scholars call for a better understanding of how societal institutions impact the entrepreneurial process (c.f. Kim & Li; 2014; Autio et al., 2013; Shane, 2012; Wiklund et al., 2011). Here, the agricultural sector provides fruitful opportunities for new research to broaden the general understanding of entrepreneurship. Preferably, scholars can design studies that attend not just to the role of institutions themselves, but also on how institutional forces and processes are interpreted by actors involved in the pursuit of new business opportunities. The results of our systematic literature review show that entrepreneurship in the

agricultural sector displays complex interactions between individual interpretations and motivations, and firm type, as well as with local socio-economic and institutional conditions at the regional, national and even international levels.

Further insights into institutional perspectives on entrepreneurship can be gleaned from the agricultural sector in developing countries (Zahra & Wright, 2011). Table 1 gives an overview of the national context of extant studies and a clear majority in our review were undertaken in Europe (58), followed by North America (10), Africa (4), Australia (2), as well as one study undertaken in India and one study in Israel. In other words, about 92% of the studies were conducted in relatively wealthy, and institutionally mature, contexts. This is paradoxical given the importance of agriculture to the economies of developing countries. It is also an important consideration given that both the informal and formal institutional contexts in developing countries and emerging economies are different. Consequently, the opportunities and barriers for entrepreneurship in these contexts differ from the developed Western world (Welter, 2011), and we cannot easily transfer or generalize our current knowledge. For instance, structural forces, such as trade barrier removal and market integration, which are moving the agricultural sector towards vertical integration and industry concentration, are likely to profoundly affect the livelihoods of farmers in less developed countries.

Entrepreneurship scholars could focus on the agricultural sector in developing countries to learn more about how these forces affect entrepreneurial activities. A related and relevant focus is to study why and when opportunities for the creation of goods and services come into existence, by whom, and with what modes of action where informal institutions are dominant and formal institutions are evolving. Here the agricultural sector in developing countries offers an arena for interesting research opportunities to advance knowledge on institutional entrepreneurship in emerging economies.

Three broader research questions that can guide future research summarize the above

discussion:

Research question 1: *How can we understand the interrelationship of institutions in the agricultural sector and their role in the entrepreneurial process?*

Research question 2: How do institutional frameworks and institutional change affect the pursuit of business opportunities among agricultural entrepreneurs in countries with evolving institutional frameworks?

Research question 3: How do international, national, regional and local institutions constrain or facilitate entrepreneurship in agricultural sector?

The Promise of Future Research in Agricultural Entrepreneurship

Given developments in the mainstream entrepreneurship literature towards a greater focus on contextualizing activities and processes, scholars studying entrepreneurship within the agricultural sector need to move beyond the current descriptive focus on individual farmers' skills and characteristics. The domain of entrepreneurship provides considerable theoretical resources to conduct research on the agricultural sector, but the broader field of entrepreneurship research tends to lack explicit reference to the agricultural sector. At the same time, our review reveals that agricultural economics and rural sociology - fields that have extensively studied the sector - have not yet appreciated the developments in scholarship that have taken place within entrepreneurship. Shane (2007) argues that to understand the entrepreneurial process, researchers should consider the sector in which the entrepreneurs act; yet we still need deeper understanding of how and why agricultural entrepreneurs identify opportunities and create new ventures, or how they exploit opportunities, formulate ideas for new ventures, and evaluate them.

Engaging the agricultural sector in future entrepreneurship research can heed the call by Zahra & Wright (2011) to appreciate the micro-foundations of entrepreneurship through a more careful inclusion of values, goals, norms and attitudes that form the basis for entrepreneurial choices. The three context-dimensions identified in this review (identity,

family and institution) all embrace the role of values, goals, norms and attitudes at different levels of analysis in the agricultural sector. Considering these context-dimensions of entrepreneurship can thus provide a deeper understanding for underlying mechanisms and micro processes that drive entrepreneurial choices (Zahra & Wright, 2011). The values, goals, norms and attitudes driving entrepreneurship in the agricultural sector jointly form the motives behind different entrepreneurial activities and choices, and can help in explaining why some farmers persevere in their pursuit of new business opportunities and others not. A focus on the context of the sector can improve our appreciation of the interaction between the various micro-foundations of new ventures and the ways they create value for their founders and owners.

Relatedly, entrepreneurship research can do more to establish the rewards of entrepreneurship for the individual and teams (Wiklund et al., 2011), including financial benefits and other consequences of entrepreneurship (Carter, 2011). Here, the agricultural sector provides a useful context to highlight the multi-faceted motives and rewards of entrepreneurship, exceeding factors such as autonomy and satisfaction, and showing that rewards are not solely defined by business norms and goals but also by personal and family norms and goals which may alter over time and across the business life-cycle (Carter, 2011; Glover & Reay, 2015). Clearly, further research is needed to better understand the financial and non-financial payoffs resulting from entrepreneurship, the micro-processes involved and how they are managed and coordinated at various levels of analysis. This review shows that entrepreneurship researchers can learn a great deal from studying this in the context of agriculture.

The literature review also shows that we have little knowledge about entrepreneurial exit in the agricultural sector; an important part of the entrepreneurial process (DeTienne, 2010). Entrepreneurship in all sectors is an ongoing process not only of identification and exploitation of opportunities to create new ventures, but also of exiting ventures (e.g.

Wennberg et al., 2010; DeTienne, 2010). The circumstances around the choice and process of exiting a venture tend to differ between sectors (Shane, 2007). In the agricultural sector, rapid consolidation and the trend towards larger farm businesses, as well as low profitability within many agricultural sub-sectors drive much of the exit activities. Our review indicates that entrepreneurship researchers can learn a great deal from studying this in the context of agriculture.

The fact that many farms have been owned by the same family for generations and are closely associated with place means that the agricultural sector provides entrepreneurship scholars with interesting opportunities to study the role of identity, family relations and formal and informal institutions in exit, failures and shut-downs. For example, do personal attachment and the perceived need to "protect" farmer identity (cf. Brandth and Haugen, 2011) promote escalations of commitment that result in larger failures than necessary, in turn making re-entry more difficult? Alternatively, does the fear of losing farmer identity prevent many family owned farms from engaging in entrepreneurial activities that may be risky but also increase their chances of survival? Further, how do the often-unique institutional frameworks such as policies and regulations regarding ownership, inheritance and tax influence entry and exit decisions in this sector?

As evidenced in Table 1 and Figure 1, many extant studies are characterized by the lack of an explicit theoretical framework. Theory driven research is central to advance research that seeks to contextualize entrepreneurial phenomena (cf. Zahra, 2007). As scholars increasingly take the sector context more deeply into account, we advise them to draw on clear and relevant theories which will increase the transferability of their findings to other sectors. The application of theory, particularly context sensitive theories (Welter, 2011), to entrepreneurial phenomena in the agricultural sector will be an important feature of future research that can contribute to the mainstream entrepreneurship literature. Our review shows that the agricultural sector context provides an opportunity for entrepreneurship scholars to better

apply existing theory by anchoring their analysis in the context's entrepreneurial phenomena

CONCLUSION

An increasing number of scholars argue that entrepreneurship researchers should pay more attention to the contexts in which entrepreneurial activities take place. Sector is a central context which impacts on many aspects of entrepreneurship. The agriculture sector has experienced substantial change but continues to be one of the most important sectors globally. We suggest that by embracing sector context to a greater extent in their future studies, entrepreneurship scholars can generate new and meaningful insights into entrepreneurial action. Specifically, we identify three context specific dimensions of this sector (entrepreneurial identity, family entrepreneurship and institutions and entrepreneurship) and outline suggestions for how entrepreneurship scholars can focus on these dimensions in future research and thereby deepen our understanding of how entrepreneurship happens in context.

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Figure 1 Typology of Studies of Entrepreneurship in the Agricultural Sector

Antecedents for Entrepreneurship	**Outcomes of Entrepreneurship**
Cell 1: Individual/Antecedents *Definition:* Farmer types (and their relation to entrepreneurship); based on competences, skills, identity, values, attitudes, motivation, or goals. *Studies in Quadrant*: 27 (+9) *Dominant Perspective:* Review on entrepreneurship in agriculture	**Cell 2: Individual/Outcome** *Definition*: Farmers' entrepreneurial learning, entrepreneurial skills development, entrepreneurial identity construction and decision-making. *Studies in Quadrant*: 9 (+2) *Dominant Perspective:* Entrepreneurial learning and skills
Cell 3: Firm/Household/Antecedents *Definition*: Farm characteristics and resources available that drive and hinder entrepreneurship. *Studies in Quadrant*: 2 (+11) *Dominant Perspective:* Review on entrepreneurship in agriculture and resource-based view	**Cell 4: Firm/Household/Outcome** *Definition*: Forms of entrepreneurship (e.g., new product/ venture, strategic renewal, etc.) and kinds of performance (financial, non-financial, environmental, competitiveness, firm growth) through entrepreneurial activity. *Studies in Quadrant*: 11 (+19) *Dominant Perspective:* Review on entrepreneurship in agriculture
Cell 5: External/Antecedents *Definition*: Drivers and obstacles for entrepreneurship in the external environment (informal & formal institutions and spatial factors). *Studies in Quadrant*: (13) *Dominant Perspective:* Institutional theory and review on entrepreneurship in agriculture	**Cell 6: External /Outcome** *Definition*: Societal outcomes such as rural development (business & employment creation), or sociocultural benefits. *Studies in Quadrant*: (4) *Dominant Perspective:* -

Note: Each study has been assigned to the cell we believe it focuses most on. Numbers in parentheses represent studies with multiple foci, that fall into multiple cells.

Table 1 Full Sample of Articles included in the Review

Authors, Year, Journal, Cell(s)	Method	Country	Theory or Concept	Focus	Key Findings
Alsos & Carter (2006) Journal of Rural Studies [3,4]	Survey (207 farms), regression analysis	Norway	Resource-based view	Extent of resource transfer between farms and their newly created ventures and subsequent effects on the performance of these new ventures	Substantial resource transfer, mediated by the resource richness of the farm and the degree of similarity in the activities; transfer of physical resources enhances, transfer of organizational and knowledge-based resources reduce performance
Alsos, Carter & Ljunggren (2014) Entrepreneurship and Regional Development [3]	Case study (4 small farms), interviews (9) and observations	Norway, Scotland	Review on entrepreneurial households (household dynamics, kinship, resource) and entrepreneurial growth	The role of the entrepreneurial household in the process of business development and growth	The importance of household for portfolio entrepreneurship; family and kinships (as a business resource) mitigate risk and uncertainty through self-imposed growth controls
Alsos, Ljunggren & Pettersen (2003) Journal of Small Business and Enterprise Development [1]	Interviews (16 small farm owners)	Norway	Rural sociology perspective on farm-based entrepreneurship, opportunity and resources-based perspective	The identification of factors leading to the start-up of new businesses within the farm sector	Three types of entrepreneurs based on motivation, objectives, source of ideas: (1) the pluriactive farmer (2) the resource exploiting entrepreneur (3) the portfolio entrepreneur
Anosike & Coughenour (1990) Rural Sociology [1,3,5]	Survey, regression analysis	USA	A behavioral model of the farm enterprise entrepreneurial decisions	Socio-economic and agro-ecological factors that influence decisions on internal venturing or venture creation	Entrepreneurship is significantly related to farm size, human capital, and regional variation in land and soil types
Barbieri (2013) Journal of Sustainable Tourism [4,6]	Chi-square and t tests, 1135 surveys	USA	Review on farm entrepreneurship, and agri-tourism (as a form of entrepreneurship) within a sustainability framework	The level of sustainability of agri-tourism compared to other entrepreneurial farm ventures	Agri-tourism farms approach sustainability to a greater extent; producing multiple environmental, sociocultural and economic benefits for their farms, households and society
Barbieri & Mahoney (2009) Journal of Rural Studies [1]	Survey (216 farms), factor and multiple linear regression	USA	Review on internal venturing and new venture creation of farms/ranches and the role of goals	The range of goals, both financial and nonfinancial, that are important in farmers' entrepreneurial decisions	Goals have six dimensions: reduce uncertainty and risk, grow and service markets, enhanced financial condition, individual aspirations and pursuits, revenues enhancement, family connections
Barbieri & Mshenga (2008) Sociologia	Survey (449 farms), regression analysis	USA	Agritourism, Resource-based view, entrepreneurial	Internal firm and owner characteristics that affect business	Farm age and size, agriculture dedication, owners/operators' characteristics and

Authors, Year, Journal, Cell(s)	Method	Country	Theory or Concept	Focus	Key Findings
Ruralis [1,3]			characteristics influencing performance	performance (annual gross sales) of new ventures (agritourism ventures)	networks positively affect performance
Barbieri, Mahoney & Butler (2008) Rural Sociology [4]	Survey (1135 farms), regression analysis	USA, Canada	Review on farm entrepreneurship and factors associated with it	Better understand farm entrepreneurship in North America	Eight types of farm entrepreneurship, which are often dependent on operation and management styles and owner characteristics
Bateman & Ray (1994) Journal of Rural Studies [1,3,5]	Survey (427 farms), multivariate regression analysis	UK	-	The ability of internal and external variables explaining new venture creation	Internal variables (farm size and type, education and ethnicity) explain new venture creation
Bergevoet et al. (2004) Agricultural Systems [1]	Survey (257 farms), factor and linear regression analysis	Netherlands	Theory of Planned Behavior	The entrepreneurial behavior of Dutch dairy farmers	Farmers' objectives and attitudes are a determinant of strategic and entrepreneurial behavior of dairy farms, resulting in farms of different sizes
Bock (2004) Sociologia Ruralis [1]	Interviews (79 farm women), over time study	Netherlands	-	Farm women's role and behavior modes in farm entrepreneurship	Farmwomen' approach is characterized by 'fitting in and multi-tasking', as well as, by starting on a small scale and a preference to work alone
Bohnet, Potter & Simmons (2003) Landscape Research [1]	Case study, interviews (21 small farms)	UK	Description of the landscape change in the English High Weald	The story of agricultural and landscape change through farmers entrepreneurial decision-making	Attitudes to land use and the occupancy of rural land are changing, distinguishing between holdings (seen as sites of production) and lifestyle ventures
Brandth & Haugen (2011) Journal of Rural Studies [2]	Case study (19 farms), Interviews (35)	Norway	New peasantry and social identity theory	How additional business activities into tourism may influence the social identity of farmers	Farm identity remains strong despite new business activities
Buechler & Mekala (2005) Journal of Environment and Development [5,4]	Survey (102 small farms), focus group interviews	India	Review on wastewater and groundwater	Farmer innovation in view of groundwater depletion, water resource degradation and increased supply of wastewater	Farmers cope with the problems through continuous agricultural innovation and novel water management strategies
Carter (1998) Entrepreneurship and Regional Development [4]	Survey (175 farms) and interviews, exploratory/descriptive statistics	UK	-	Role of farms and farm owners in rural business development with particular attention to the business ownership activities	Additional business activities are best viewed as a continuum from the diversification of existing assets to the ownership of a portfolio of businesses
Carter (1999) Journal of Rural Studies [4,6]	Survey (296 farms), exploratory/descriptive statistics	UK	-	The incidence of portfolio entrepreneurship in the farm sector and its contribution to enterprise and employment creation	A core of farmers has multiple business interests and these additional business activities make a substantial contribution to both numbers of enterprises and employment

Authors, Year, Journal, Cell(s)	Method	Country	Theory or Concept	Focus	Key Findings
					creation
Cassel & Pettersson (2015) Scandinavian Journal of Hospitality and Tourism [1]	Interview (13 farms), field visits	Sweden	Review on performing place and gender identity in farming	How women engaged in farm tourism perform rural and gender identities	Entrepreneurs must cope with tensions and conflicts between agricultural production and new business activity
Chiffoleau (2005) Technovation [2]	Longitudinal ethnographic case study (small cooperative), action research group and 25 interviews	France	Learning theories and network theories	Social practices underlying innovation and learning processes	Two kinds of networks, playing separate roles to learning and innovation; one type is linked to building social identities, the other is source of pragmatic answers to specific questions
Clark (2009) Entrepreneurship and Regional Development [3,4,5]	Case study analysis (15 farms), survey and interviews	UK	Review on agricultural entrepreneurship	The processes underpinning entrepreneurship and its effects on business performance	The process of entrepreneurship relies on pervasive socio-cultural attributes within localities, informal networking, particular skills and experiences of individuals; outcome: increased net income, reduced dependence on agricultural subsidies, greater income stability and employment
de Lauwere (2005) Agricultural Economics [1]	Survey (752 farms), factor and cluster analysis	Netherlands	-	Agricultural entrepreneurs' personal characteristics	Four types, on basis of strategic orientations: (1) social farmers (2) traditional growers (3) prudent farmers (4) new growers. Social farmers and new growers are seen as 'real' entrepreneurs
de Wolf, McElwee & Schoorlemmer (2007) International Journal of Entrepreneurship and Small Business [2]	Interviews (120 stakeholders in the farming sector)	UK, Finland, Netherlands, Switzerland, Poland, Italy	Review on entrepreneurship and the farmer	Socio-economic and cultural factors hindering or stimulating the development of entrepreneurial skills of farmers	As the farm environment is becoming increasingly complicated (e.g. globalization, reforms, changes in consumer demand) farmers need a large variety of skills (e.g. production, management skills) and entrepreneurial qualities (e.g. creativity, risk taking)
Di Domenico & Miller (2012) Tourism Management [1]	Case study, interviews (16 farms), inductive research	UK	Concept of experiential authenticity	Exploration of self-conceptions of family identities, who have set up tourism attractions on their farms	Model of experiential authenticity reveals modifiers, who define themselves as farmers, and switchers, who define themselves as tourism business entrepreneurs

Authors, Year, Journal, Cell(s)	Method	Country	Theory or Concept	Focus	Key Findings
Dorsey (1999) Economic Geography [4]	Survey questionnaire (67 small farms), regression analyses	Kenya	Concepts of agricultural intensification, internal venturing and commercialization	Dynamics of intensification, internal venturing (new crop cultivation) and commercialization	Internal venturing provides the opportunity to select crops for commercial production, which increase income while meeting rising demands for local farm produce and export
Evans & Ilbery (1993) Environment and Planning A [4]	Survey (200 farms), descriptive statistics	UK	Agricultural entrepreneurship (internal venturing & business creation)	Agricultural entrepreneurship and its relationship with the farm business	A high proportion of farm-centered additional business activities are entirely unrelated or lacking integration with the accommodation enterprise
Ferguson & Hansson (2015) Managerial and Decision Economics [3]	Survey (297 large farms), factor and regression analysis	Sweden	Social embeddedness and concept of diversification as a process of new venture creation	The effects of embeddedness in new venture creation	Two types networks: professional and social; advice from social networks was positively associated with new venture creation and professional networks negatively
Grande (2011) Journal of Rural Studies [3,4]	Case study (3 farms, longitudinal), interviews	Norway	Resource-based theory and dynamic capabilities	Understanding critical resources and capabilities for new venture creation	Farm setting, its traditional production, its relative location, buildings and landscape are important resources; farms appear active in learning and integration of external resources and knowledge, but struggle to build networks and alliances
Grande, Madsen & Borch (2011) Entrepreneurship and Regional Development [4]	Survey (168 small farms), regression analysis	Norway	Resource-based view and concept of Entrepreneurial Orientation (EO)	How firm-specific resources and EO of the firm may influence performance in small farm-based ventures	Financial position, unique competence and entrepreneurial efforts influence performance
Halliday (1989) Journal of Agricultural Economics [1]	Survey	UK	Review on farm entrepreneurship (county council's view)	Farmers' attitudes towards entrepreneurship	Famers favor an increase in farm self-sufficiency through the exploration of mainstream (traditional) farming options instead of becoming entrepreneurial
Hansson et al. (2013) Journal of Rural Studies [1]	Survey (309 large farms), factor and regression analysis	Sweden	Review on farmers as entrepreneurs and motives for new venture creation	Motives to start new or complementary ventures outside conventional agriculture and how family considerations affect the motives	Two underlying motives: (1) business development to reduce risk and to use idle resources (2) business development for social and lifestyle reasons
Hansson, Ferguson & Olofsson (2010)	Survey (900 large farms), regression	Sweden	The concept of diversification (new income-generation	Development of farm businesses and the impact of farm characteristics on	Farms are increasingly engaging in diversified activities, most activities make

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Agricultural and food science [4]	analysis		ventures)	observed specialization and new income-generation ventures	minor contributions to total revenue; diversification is influenced by business structure, financial and demographic conditions
Hansson, Ferguson & Olofsson (2012) Journal of Agricultural Economics [1]	Survey (679 farms), factor and multinomial logistic regression	Sweden	Theory of planned behavior	Psychological constructs underlying farmers' decisions to have multiple enterprises or to specialize their farm businesses	Attitude, subjective norms and perceived behavioral control influence farmers' decisions to engage in new venture creation; attitude and subjective norms are especially influential
Haugen & Vik (2008) International Journal of Entrepreneurship and Small Business [1]	Descriptive statistics, survey (1677 farms)	Norway	Review of farm-based tourism in Europe	Important characteristics of farm-based portfolio entrepreneurs that combine farming and tourism activities	They have higher levels of education than other farmers, are more commonly married, are overrepresented among dairy and livestock farmers and see themselves to a larger degree as small-business managers - still having a strong occupational identity as farmers
Hinrichs, Gillespie & Feenstra (2004) Rural Sociology [2]	Survey (569 vendors from 180 different farmers' market), multivariate regression analysis	USA	Concepts of entrepreneurship, innovation and social learning	The role of social learning in farmers' innovation	Farmers' markets are social institutions, which facilitate social learning that in turn may lead to innovation
Ilbery (1991) Journal of Rural Studies [1,3,4]	Survey (120 farms), descriptive statistics	UK	Concept of entrepreneurial diversification in agriculture	A broad overview on farm entrepreneurship	Reason for entrepreneurship, types of farms, reasons for resistance to entrepreneurship
Ilbery et al. (1996) Geography [3,4]	Survey (1256 farms), descriptive statistics	UK	Review on business growth in agriculture	Nature and incidence of business growth	Differences in farm size, type, occupancy and household composition explain the development of business growth and its forms
Jongeneel, Polman & Slangen (2008) Land Use Policy [4,5]	Survey (495 mixed farms), factor analysis and binominal logit regressions	Netherlands	Institutional economics theory of contracts and utility maximization model of farmer behavior	Why farmers participate in entrepreneurial activities	Trust in government is an important factor for engagement in nature conservation and tourism, but less important for services; farm location is important for nature conservation, services and tourism
Katchova (2005) American Journal of	Regression analysis	USA	Berger and Ofek model	Effect of entrepreneurial diversification on farm value	Farms have an entrepreneurial diversification discount similar to corporate firms

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Agricultural Economics [4]					
Kinsella et al. (2000) Sociologia Ruralis [1,6]	Survey (50 farms)	Ireland	Review on agricultural entrepreneurship	Motivation/reasons for entrepreneurship	Entrepreneurship is a necessity in less-favored areas and a choice in favored areas, indicating the significance of push-pull factors under different socio-economic contexts
Lange et al. (2013) Land Use Policy [2,5]	Survey (147large farms), regression analyses	Germany	-	The impact of spatial factors on new business activities and farm abandonment	Rural attractiveness positively affects the farmers' decision-making to diversify, but the impact of factors like farm size and household income is higher
Little et al. (2001) Development and Change [1,4,5]	Case study (interviews, observation), descriptive statistics	Kenya, Ethiopia	Model of pastoral livelihood growth	Causes for and patterns of farm business growth	(1) Patterns: wage labor, trading, new ventures and internal venturing (2) Causes: distance to market, climate, education, gender, wealth
López-i-Gelats, José Milán & Bartolomé (2011) Land Use Policy [4]	Interviews (57 farmers), principal components and cluster analysis	Spain	Concept of entrepreneurial farm diversification	The nature of entrepreneurship in the Pyrenees	Four different typologies: (1) absence of diversification (2) agricultural diversification (3) farmland diversification (4) farm labor diversification
Maye, Ilbery & Watts (2009) Journal of Rural Studies [4,5]	Survey, interviews (69) and workshop, descriptive statistics	UK	Review on farm entrepreneurship and agricultural tenancy	Types of new activities on tenant farms, including how common agricultural policy reforms may influence restructuring processes	High rates of new business activities, but without contract services rates are much less; farmers are more concerned about levels of Single Farm Payment and entitlement than future diversification
McElwee (2008) International Journal of Entrepreneurship & Small Business [1]	Interviews (25 farmers)	UK	Conceptualizing the farmer as entrepreneur	A taxonomy of entrepreneurial farmers	Four types: (1) farmer as farmer (2) farmer as entrepreneur (3) rural entrepreneur (4) farmer as contractor; some farmers have more entrepreneurial skills than others
McElwee, Anderson & Vesala (2006) Journal of Business Strategy [1]	Single-case study, interviews	Finland	-	How strategic change and its implementation may require entrepreneurial skills	Farmers lack skills to think strategically and entrepreneurially: conventional farming and business diversification need clearly different entrepreneurial skills, strategies and implementation
McGehee & Kim (2004) Journal of	Survey (987 small farms), factor	USA	A Weberian Theoretical Framework	Motivations for agri-tourism entrepreneurship	Motivations for agri-tourism are both economic and social, different motivations

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Travel Research [1]	analysis/AMANOVA				are based on the various characteristics of farm families
McGehee, Kim & Jennings (2007) Tourism Management [1]	Survey (412 farms), factor analysis/MANOVA/t-test	USA	An alternative agriculture paradigm	The potentially gendered nature of motivations for agri-tourism entrepreneurship	Motivations of men and women are similar (independence, opportunity to contribute to the community, diversity of products), but women focus on 'expense-reducing', men on 'income-inducing' regarding independence
McKenzie (2013) Australian Geographer [1,3,5]	Interviews (33 farms)	Australia	-	Enablers of farmer-driven innovation	Observing signals from the landscape, independent testing/trialing, property redesign, increasing system flexibility, independent advice, farmer groups, actively seeking information
McNally (2001) Journal of Rural Studies [3,4]	Survey (2700 farms), regression analysis	UK	Review on farm entrepreneurship	Types of new business activities, their drivers and outcome	Various types, new activity makes a relatively small contribution to income and is strongly related to farm size and type
Meert et al. (2005) Journal of Rural Studies [4]	Survey with interviews (49 mixed farms), factor analysis	Belgium	Concept of survival strategies and farm entrepreneurship	Types of farms, opportunities offered by entrepreneurship	Three types of farms: (1) continuously problematic farms (2) established integrators (3) problem solvers; entrepreneurship is a useful strategy to cope with income problems
Morgan et al. (2010) Journal of Rural Studies [2]	Case studies (small & medium sized farms), interviews	UK, Italy	Agricultural models and farmers' entrepreneurial skills	The interaction of multifunctionality of agriculture and farmers' entrepreneurial skills	Farmers' entrepreneurial skills are shaped and mobilized by the kind of socio-economic development, the institutional support in rural economies and personal, locational and physical factors
Nickerson, Black & McCool (2001) Journal of Travel Research [1]	Survey (292 small farms), factor analysis and chi-square tests	USA	Review of farm entrepreneurship and reason for it	Motivation for entrepreneurship	Three factors that influence motivation: (1) social reasons (2) economic reasons (3) external influences
Niska, Vesala & Vesala (2012) Sociologia Ruralis [1]	Survey (469 diversified farms, 271 conventional farms), reliability and factor analysis	Finland	Concept of values	A frame analytic approach to the popular peasant–entrepreneur typology by focusing on farmers' values	Farmer framings do not reflect the peasant–entrepreneur typology, they are compatible with the multifunctionality discourse (an ambiguity peasant–entrepreneur typology)
Ollenburg & Buckley (2007) Journal of	Survey and interviews, spearman's rank	Australia	-	Motivations for farm tourism	Social and economic motivations are both important, different motivations are

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Travel Research [1]	correlation, components analysis				dominant for different types and at different stages in farm, family, and business lifecycles
Oreszczyn, Lane & Carr (2010) Journal of Rural Studies [2]	Action research, participatory and shared experience	UK	Network theory	Farmers' own view of their network of practice and how they relate to others outside their network when learning about innovation	Farmers have a particular type of network of practice, characterized by a weak organizational framework but with a stable network of other communities of practice in which entrepreneurial learning may occur
Pfeifer et al. (2009) Land Use Policy [4,5]	Survey (258 farms) and topographic/soil maps, regression analysis	Netherlands	-	The role of location (natural conditions and neighboring dynamics) in farmer's entrepreneurial decision making	Landscape attractiveness is a driver for entrepreneurship; recreation most frequently occurs close to national parks, and green services are more likely on relatively wet soils
Phelan & Sharpley (2012) Local Economy [1]	Survey (118 farms), descriptive statistics	UK	Review of entrepreneurial skills and competencies	Skills and competencies that farmers identify as important when adopting a new strategy	Farmers have a range of managerial skills, but lack many additional business and entrepreneurial competencies required for success
Pope & Prescott (1980) American Journal of Agricultural Economics [1,3]	Regression analysis, inductive inquiry	USA	-	The relationship between farm size and other socioeconomic variables and farm entrepreneurship	Larger farms and more experienced farmers are more entrepreneurial, wealthier and less experienced farmers and corporations are more specialized
Præstholm & Kristensen (2007) Geografisk Tidsskrift [1]	Survey (125 farms) and interviews (14), regression analysis	Denmark	Concept of agricultural entrepreneurship	Types of farmers and whether entrepreneurial strategies evolve while living on the farm or if it is an important rationale for buying a farm (farms as attractors)	It is a heterogeneous group of farmers that adopt entrepreneurial strategies, especially the situation 'farm as attractors" concerns many newcomers
Pritchard, Burch & Lawrence (2007) Journal of Rural Studies [4]	Interviews (16 farmers), participant observation	Australia	Review on family farming and the future of the family farm	The social and economic transformations and business growth of rural family farms	Survivors: grown family farms that have captured a degree of production flexibility without becoming corporate structures
Pyysiainen et al. (2006) International Journal of Entrepreneurial	Single-case study, interviews	Finland	Concept of entrepreneurial skills	Development of entrepreneurial skills	Concept of entrepreneurial skills is ambiguous, the contexts of farming and diversification call for different entrepreneurial skills, likewise is the aim to

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Behaviour and Research [2]					develop them through teaching
Ras & Vermeulen (2009) Sustainable Development [1,4]	Survey (242 farms), multiple regression analysis	South Africa	A review on supply chain management and corporate social responsibility	South African grape farmers' entrepreneurial qualities and how they relate to farmers' environmental and economic performance	Different drivers; innovativeness and responsiveness to the dynamic market, together with network participation and responding to the market dynamics are the most relevant explaining variables
Rønning & Kolvereid (2006) International Small Business Journal [4]	Survey (901 farms), bivariate correlations and multiple regression	Norway	Literature review on farm entrepreneurship	The relationship between entrepreneurial strategies and household income	Entrepreneurship has a positive effect on household income
Seuneke, Lans & Wiskerke (2013) Journal of Rural Studies [2]	Case study (6 farms), interviews	Netherlands	Entrepreneurial learning	Major factors that underlie entrepreneurial learning process in the development of on-farm multifunctionality	Three major factors driving entrepreneurial learning: (1) re-developing an entrepreneurial identity (2) crossing the boundaries of agriculture (3) opening up the family farm
Sharpley & Vass (2006) Tourism Management [1]	Descriptive statistic, survey (79 farms)	UK	Review of the background to the need for new venture creation	Farmers' attitudes towards new ventures into tourism	Motivation for new venture creation is extra income, it is seen as positive/proactive choice, it gives job satisfaction, but there is a desire to maintain a distinction between the farm and new venture
Sofer (2001) Journal of Rural Studies [1]	Survey (mixed farms), descriptive statistics	Israel	Concept of off-farm venturing in agriculture	Underlying causes for new business activity and the motivation for a specific choice	Antecedents for new venture creation are a decline in agricultural income and the desire to take advantage of vocational training
Stenholm & Hytti (2014) Journal of Rural Studies [2,5]	Case study (2 farms), interviews	Finland	Social identity and institutions	The role of institutions in the construction of entrepreneurial identity	Informal institutions contribute to the sources of legitimacy; producer farmer and entrepreneur farmer reflect and interpret their institutional environment differently when constructing identities
Testa et al. (2014) American Journal of Applied Sciences [4]	Single case study (small farm), interview and economic evaluations	Italy	-	Comparison of economic competitiveness of an olive farm that introduced process innovation	Process innovation leads firms to achieve a competitive advantage in the short run
Tudisca et al. (2014) International Journal of Entrepreneurship	Case study (10 small and medium-sized farms)	Italy	A conceptual part about competitiveness and models of business growth	The entrepreneurial strategies of wine farms that produce Etna wine controlled designation of origin	Positive externalities (protection and safeguarding of the production area and environment) create the basis for value

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and Small Business [4]				(DOC)	creation through entrepreneurship in agriculture and competitive repositioning
Vandermeulen et al. (2006) Land Use Policy [4,5]	Survey (688 mixed farms), probit analysis	Belgium	An institutional framework: local and regional policy	The influence of local and regional policies on the uptake of entrepreneurial farming	Differences in local and regional policies do have an influence on entrepreneurship, e.g. municipality's promotion of local agriculture, or the call for environmentalist
Ventura & Milone (2000) Sociologia Ruralis [4,6]	Single case study, interviews and secondary data	Italy	Economic of scope and transaction costs theory	The socio-economic impact of entrepreneurship at the farm-enterprise level	Farms enjoy several advantages, e.g., a better financial situation; even synergies between food production and the delivery of services are created
Vesala & Vesala (2010) Journal of Rural Studies [1]	Survey (484 conventional farms, 1044 diversified farms, 320 rural firms), regression analysis	Finland	Identity theory	The entrepreneur and producer identities of Finnish farmers and how farmers have met the demand for adopting the role of an entrepreneur	Farmers do not experience the entrepreneur as something distant from themselves, the majority conceive themselves as entrepreneurs and as producers
Vesala, Peura & McElwee (2007) Journal of Small Business and Enterprise Development [1]	Survey (590 rural entrepreneurs, 2200 portfolio farmers, 600 conventional farmers), regression analysis	Finland	Concept of entrepreneurial identity	The entrepreneurial identity of portfolio farmers and the extent to which they differ from conventional farmers	Portfolio farmers have a stronger entrepreneurial identity than conventional farmers. Portfolio farmers perceive themselves as growth-oriented, risk-takers, innovative, optimistic and as having more personal control
Vik & McElwee (2011) Journal of Small Business Management [1]	Survey (1607 farms), multinominal logistic regression analysis	Norway	The concepts of farm-based entrepreneurship and entrepreneurial decision-making	Motivation for farm entrepreneurship	Social motivations are as important as economic motivations; different motivations underpin different forms of entrepreneurship
Walford (2003) Geografiska Annaler, Series B: Human Geography [4,5]	Survey (154 large farms), interviews and historical data, person chi-square test	UK	Typologies of entrepreneurship	The historical sequences of entrepreneurship and expectation for future	Entrepreneurship was a response to the agricultural crisis of the 80s and to policy changes in the twentieth century; future forms: land renting, movement into non-subsidized crops, organic food

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Windle & Rolfe (2005) Australian Journal of Agricultural and Resource Economics [1]	Survey, choice modelling (multinomial logit models)	Australia	Review on the need and potential of agricultural entrepreneurship	The trade-off choices growers make between different attributes of entrepreneurship	The attributes 'gross margins' and 'risk' were most significant in choices making; interest in entrepreneurship remains low, since profit maximization is core goal
Zossou et al. (2009) International Journal of Agricultural Sustainability [2]	Interviews, participant observation, binominal logistic regression on qualitative data	Benin	Review of conventional training and farmer-to-farmer learning video	How to stimulate innovation via education among farmer women	Farmer-to-farmer learning videos can trigger creativity and help rural people to innovate