



Greener Rural areas

Revealing the Business Models of Regenerative Farmers as rural entrepreneurs

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Greener Rural areas. Revealing the Business Models of Regenerative Farmers as rural entrepreneurs

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Abstract

This thesis investigates the development of sustainable business models within rural entrepreneurs. The primary emphasis is placed on regenerative farmers who manage small-scale farms. With increasing concerns over the environmental and social impacts of conventional farming practices, regenerative agriculture has emerged as a viable remedy to address these challenges.

Drawing on available body of literature on business models, sustainability, sustainable business models, rural entrepreneurship, and regenerative agriculture, this study aims to develop understanding of how rural entrepreneurs do sustainable farming. The research questions guiding this study are: How do rural entrepreneurs develop sustainable business models? And RQ2) How can we understand regenerative farmers' business models?

This thesis employs a qualitative research approach, employing in-depth interviews and case studies to collect comprehensive data from rural entrepreneurs actively involved in regenerative agriculture. The subsequent analysis of the collected data follows a thematic analysis, and it shows that the value they believe in is not just economic.

The outcomes of this study contribute to the realm of sustainable business models by providing insights into the reality that social and environmental values are as crucial as economic values for regenerative farmers. Through a comprehensive understanding of the business models adopted by regenerative farmers, this study offers valuable insights into sustainable agricultural practices and their role in promoting the three pillars of sustainability: environment, society, and economy.

The findings of this research have broader implications for policymakers, agricultural practitioners, and entrepreneurs who aim to adopt more sustainable farming methods. The study underscores the significance of incorporating sustainable business models to promote regenerative agriculture as a viable and environmentally conscious approach to food production.

Keywords: sustainable business models, regenerative agriculture, rural entrepreneurs, sustainability, agriculture, small farms.

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1. Introduction

The chapter begins by providing an overview of the subject's background and identifying the problem. By addressing the raised issues, the research's objectives and questions are formulated. Furthermore, the chapter outlines the boundaries and limitations of the study and offers a comprehensive overview of the research process.

1.1 Background

A business model encompasses the reasoning, information, and supporting evidence that establishes a value proposition for customers, as well as a viable structure of revenues and costs for the enterprise delivering that value (Tecce 2010; Zott, Amit, and Massa 2011). However, scholars have varying opinions and there is not a unanimous agreement regarding how a business model can be defined (Tecce 2010; Zott, Amit, and Massa 2011). According to George and Bock (2011), business models have been classified into six distinct categories, and they proposed a representative definition for each category. This suggests that there is a wide range of definitions available for the concept of a business model. Timmers (1998, p.4) illustrates a business model like this: a business model serves as a framework that shows how products, services, and information are organized and exchanged, including a description of the various business actors and their roles. Another interpretation of a business model which is suggested by DaSilva and Trkman (2014) argues that business models consist of a specific combination of resources that through transactions among them value is generated for both customers and the organizations. Considering all definitions, we can say that a business model covers all aspects of a business. Trying to enhance sustainability through implementing innovation into the business models will result in business model sustainability. This can help to embed into businesses goals and processes (Bocken et al. 2014).

Bocken et al. (2014) suggest eight different archetypes for a sustainable business model. Thus, it is clear that finding a universal definition for a business model is impossible. Lüdeke-Freund (2010) determines a sustainable business model as one that offers unique benefits to customers and drives the development of both the business and society in an environmentally and socially responsible manner. The concept of a sustainable business model explains how an organization creates, delivers, and captures value sustainably (Nosratabadi et al. 2019). Hence, we can say that sustainable businesses are made more sustainable through sustainable business models. Sustainability as a policy concept has its origin in the Brundtland Report of 1987, and it means to satisfy the needs of the present without compromising the next generation's ability to meet their own needs (Kuhlman and

Farrington 2010). There are three pillars of sustainability that are: economy, society, and environment (Kuhlman and Farrington 2010).

Entrepreneurship is the creation and extraction of value (Gaddefors and Anderson 2017). Entrepreneurship is the process of creating, developing, and managing a venture using to achieve financial returns while recognizing and balancing the needs of other stakeholders, including employees, customers, and society (DeTienne and Chandler 2004). Sarasvathy and Venkataraman (2011) characterize entrepreneurship as the process of creating, developing, and growing a new venture by assembling and coordinating the necessary resources, including people, finance, technology, and information, to create value for customers and stakeholders. These two definitions show that entrepreneurship is not concerned just with profit, entrepreneurs care about other people and society. Rural entrepreneurship can be seen the same, as Stathopoulou et al. describe it in this way, rural entrepreneurship involves the identification and exploitation of business opportunities in rural areas, to create economic and social value for the entrepreneur and the local community, by leveraging the unique characteristics of the rural environment, such as natural resources, cultural heritage, and social networks. Hence, we can say that regenerative farmers working in small farms in rural areas can be considered rural entrepreneurs as they try to work sustainably.

Regenerative agriculture is an attitude and a set of practices that can keep up the fertility and health of the soil (White 2020). It protects biodiversity, supports water resources, and enhances ecological and economic resilience (White 2020). Robert Rodale (1983) and Giller et al. (2021) define regenerative agriculture as one that increases productivity, as well as land and soil's biological production base, and minimizes, the impacts of agriculture on the environment. Regenerative agriculture aims to raise the soil's health and revive highly damaged soil. This will result in the improvement of water and vegetation quality, and the productivity of land (Rhodes 2017). Schreefel et al. (2020) argue that the most important goals of regenerative agriculture are improving soil health, broadening the environment, enhancing human health, and prospering the economy. All these goals are aligned with three pillars of sustainability: environment, society, and economy. Thus, we can conclude that regenerative farmers are trying to farm sustainably.

1.2 Problem Statement

Nowadays, about 85% of the world's freshwater is consumed in the agriculture sector, also this sector is responsible for half of the GHG emissions on its own (Foley et al. 2005; Hathaway 2016). In some parts of the world, forests and other biodiversity reserves are destroyed to expand urban regions or farms (Tauger 2010). The point is that this is not the end, and the situation is becoming even more severe as the population increases. In 1950 the world's population was 2.5 billion, but it went to 6.1 billion in 2000, and then to 7.8 billion in 2020 (UN 2019). Thus, we can

conclude that the situation is getting worse, and agriculture is damaging the environmental aspect of sustainability directly, and the social pillar of it indirectly by harming the planet.

According to Rhodes (2017), the most important objective of regenerative agriculture is to enhance soil quality or restore severely degraded soil, leading to mutually beneficial outcomes for water, vegetation, and land productivity. Regenerative agriculture is characterized as a farming approach that aims to optimize productivity while mitigating the adverse environmental impacts associated with agriculture. According to Harwood (1983) and Giller et al. (2021), regenerative agriculture is to produce nutrient-rich food at high yields without the use of biocides, regenerative agriculture aims to enhance soil productivity by improving the depth, fertility, and physical characteristics of the upper soil layers. Substances that disrupt the biological structure of the farming system should be avoided. Integrated systems that utilize biological nitrogen fixation should be employed in regenerative agriculture. Animals should be raised and fed in a manner that prevents the presence of hormones and prophylactic antibiotics in human food. Integrated systems that utilize biological nitrogen fixation should be employed in regenerative agriculture. Agricultural production in regenerative agriculture should generate increased employment opportunities. We can see that all these notes that are mentioned about regenerative agriculture are about keeping agriculture from harming the environment and trying to heal the planet at the next level. Thus, regenerative agriculture can be the solution to the problems that are created by conventional and industrial farming.

Regenerative farming just like any other kind of business has a business model. Studying and understanding regenerative farmers' business models can help us understand how they do sustainable business. Sustainable business models are well-studied and researched in the literature, however there is limited research focused on the business models of regenerative farmers. Thus, this can help us understand the business models of regenerative farmers and contribute to the field of sustainable business models as well.

1.3 Aim and research questions

This study aims to develop understanding of how rural entrepreneurs do sustainable farming. In order to understand, the researcher will look into the business models of small rural farms.

Research questions:

RQ1) How do rural entrepreneurs develop sustainable business models?

RQ2) How can we understand regenerative farmers' business models?

1.4 Scope and delimitation

In order to answer the questions first a full literature review will be done to understand the concepts that are implemented in the study completely. Then some contacts will be made with some Swedish regenerative farmers to fix an interview time with the ones who are open to being part of this study. Then the interviews will be done, the results will be extracted from the interviews, and the data will be analysed to find the answer to the questions. Thus, the research design would be multiple case studies as this design is suitable for getting a deep understanding of the unit of analysis, data collection tool will be semi-structured interviews with open-ended questions to make it possible for the interviewees to answer the questions freely, and avoid any bias. Data analysis would be done by the thematic coding method. In this study, the unit of observation is the farmer, and the unit of analysis is the sustainable business models of the farms.

There are some limitations to this study. First, this study is performed only on the regenerative farmers in Sweden. The same study should be performed in other countries so that the transferability of the findings can be checked. A limited time of twenty weeks is another problem that keeps the researcher from conducting more interviews with more regenerative farmers. It is clear that more cases could provide more data and with more data, the researcher could have more precise findings. Another limitation was the distance of the farms which made the researcher perform the interviews on the Zoom platform. If it was possible for the researcher to visit the farms and farmers in person, it could give the researcher to gather more data based on observations. There is one more problem that should be noted and it is the type of products. All interviewed farmers are focused on meat production. The researcher's preference was to talk with farmers who are focused on dairy production or crop production. But considering the time limitation it was not possible for this study.

1.5 Thesis outline

The overall layout of this research is as follows: Chapter 1 provides an initial overview of the study, including the problem being addressed, the research aim, and questions. Chapter 2 is about the theoretical framework and reviews the concepts of business models, business model innovation, sustainable business models, and regenerative agriculture. Chapter 3 covers the research philosophy and methodology, including the data collection and analysis process, as well as the quality criteria and ethical considerations. Chapter 4 presents the empirical background and case descriptions. Then, the fifth chapter, which analyses the data gathered to produce insights that help address the study questions, is presented. Chapter 6 evaluates the research questions in light of existing theories. Finally, the

research concludes with a summary of the limitations and suggestions for future research in Chapter 7.

2. Literature Review

This chapter contains an in-depth analysis of the current condition of the theoretical literature for the dissertation. It includes a review of the literature that is accessible on the concepts that are used in this study such as business models, entrepreneurship, and regenerative farming.

2.1 Sustainability and Triple Bottom Line Concept

Sustainability can be defined as the principle of satisfying the needs and requirements of the current generation while ensuring that the ability of future generations to fulfil their own needs and requirements is not compromised (Heinberg and Lerch 2010; Kuhlman and Farrington 2010). This notion encompasses the concept of utilizing natural resources in a conscientious and sustainable manner, ensuring their preservation and protection for future generations, rather than being depleted or exhausted (Heinberg and Lerch 2010).

Origins of sustainability as a policy concept can be found in the Brundtland Report of 1987 (Kuhlman and Farrington 2010). The term "sustainability" originated within the domain of forestry, signifying the concept of selectively extracting resources from a forest in a manner that allows for their regeneration or regrowth. In essence, it encompasses the principle of harvesting only what can be replenished within the forest ecosystem. (Wiersum 1995; Kuhlman and Farrington 2010). The concept of sustainability is characterized by three fundamental dimensions, namely the economy, society, and environment (Kuhlman and Farrington, 2010). This tripartite framework for sustainability can be traced back to the introduction of the triple bottom line concept proposed by Elkington (1994). Elkington expanded upon the conventional bottom line, which solely focused on profit, by incorporating two additional dimensions: people and the planet (Kuhlman and Farrington, 2010). There is a growing trend among businesses and managers to incorporate a harmonious integration of economic, ecological, social, and cultural value creation within their business models (Porter and Derry 2012).

The economic aspect concentrates on the financial performance of an organization, its capability to generate profits, and its potential to contribute value to the market, as stated by Elkington (1999). In the agricultural business context, this approach may involve the diversification of income sources and the implementation of cost-reduction strategies while maintaining or enhancing yields, thereby ensuring sustainable financial viability for the organization (O'Sullivan et al. 2019). The farm business must be successful in order to survive and provide a living for the owner and their employees (O'Sullivan et al. 2019).

2.2 Business Model

There is not a single definition for the business model that everyone agrees on (Teece 2010; Zott, Amit, and Massa 2011). George and Bock (2011) categorise the proposed definitions into six different themes and provide one of the descriptions from the literature as the representative for each group. Thus, we can expect that different scholars suggest different interpretations of this concept based on their own points of view.

For example, Teece (2010) looks at the business model in this way: A business model encompasses a collection of interconnected and interdependent activities, resources, and partnerships employed by a firm to generate and capture value. Another clarification of the business model is a business model is a structured framework through which an organization provides value to its customers, motivates customers to compensate for that value, and subsequently converts those payments into profitable outcomes. (Mitchell and Coles 2011). A business model can be defined as a conceptual framework that encompasses a set of interconnected entities and ideas. It serves the purpose of elucidating the fundamental operational principles that underpin the functioning of a specific company. Therefore, it is imperative to carefully consider the choice of concepts and relationships that enable a coherent representation and depiction of the value provided to customers, the methods employed to deliver that value, and the corresponding financial ramifications. (Osterwalder, Pigneur and Tucci 2005).

Due to the interdependence of the components that make up BMs, researchers have suggested many structural features (Grabowska 2015). However, it can be argued that the business model proposed by Osterwalder and Pigneur (2005, 2010) is the most commonly used among management professionals. (Grabowska 2015).

The crucial components of a business model create a common vocabulary that explains the functioning of a company. Together, these nine building blocks create an interconnected plan for innovation, encompassing an organization's "customers, product or service offering, infrastructure, and financial sustainability (Osterwalder and Pigneur 2010). 1) "Customer segments" refers to identifying and targeting specific types of customers. 2) "Value propositions" are the benefits that differentiate a company from its competitors. 3) "Channels" are the ways in which a company communicates value and distributes its products and services. 4) "Customer relationships" involve finding different ways to serve different market segments. 5) "Revenue streams" are the ways in which a company earns income. 6) "Key resources" are a company's most important assets, which can be physical, financial, intellectual, or human. 7) "Key activities" are the critical tasks that company personnel perform to engage customers and make a profit. 8) "Key partnerships" involve joining with other entities to expand or protect market share. 9) "Cost structure" refers to the expenses associated with a company's business model, which can be fixed or variable. By understanding and optimizing each of

these elements, companies can develop successful business models that generate profits and satisfy customer needs (Osterwalder and Pigneur 2010). According to Bocken et al. (2014) customer segments, customer relationship, and channels are related to value delivery. Key activities, key stakeholders, and key activities are related to value creation. Revenue stream and cost's structure is related to value capture (Bocken et al. 2014).

In this study using the concept of the business model the researcher tries to understand how regenerative farmers do sustainable business and finds out their cost and revenue structure, how they interact with their customers, and how they run their farms.

2.3 Sustainable Business Model

Eight distinct paradigms for a sustainable company model are offered by Bocken et al. (2014). So, it is evident that there is no single definition of a sustainable business model. According to Bocken et al. (2013), in order for BMs to be sustainable, they must be economically viable, and they must assist businesses in capturing financial value in addition to generating environmental and social benefits. Due to sustainability, integrating environmentally friendly activities into strategic management is one of the key components of competitive success and gives businesses a new position in the social sector (Nosratabadi et al. 2020). Thus, the company's structure and culture as well as collaboration with other system stakeholders should be addressed for sustainability.

By balancing the interests of various stakeholders and integrating economic growth with resource efficiency, social inclusion, and environmental protection, sustainable business models seek to generate value on all three fronts: economic, social, and environmental (Bocken et al. 2014). Geissdoerfer et al. (2018) argue that sustainable business models are a means for companies to simultaneously deliver economic, social, and environmental value by aligning the interests of different stakeholders and managing their interactions with the natural environment effectively. Sustainable business models aim to use forward-thinking management techniques, creativity, and a long-term outlook to achieve sustainability objectives. By providing solutions that assist businesses in simultaneously achieving their economic and sustainability objectives, sustainable business models have successfully aided in mitigating the negative impacts of business activities on the environment and society (Nosratabadi et al. 2020). Hence, the sustainable business model concept has arisen to give a framework for incorporating sustainability factors into businesses (Geissdoerfer et al. 2018).

2.4 Entrepreneurship

Entrepreneurship is the creation and extraction of value (Gaddefors and Anderson 2017). Entrepreneurship refers to the act of identifying and assessing prospects to generate novel economic benefits through the mobilisation and exploitation of resources while taking on the accompanying uncertainty and producing a profit or other types of value for oneself or society (Chrisman et al. 2015). George and Bock (2011) argue that Entrepreneurship involves identifying, assessment, and exploitation of identifying, assessing, and exploiting opportunities to generate economic and social value through innovation, acquiring resources, and effectively managing available resources. The process of locating, evaluating, and seizing chances to launch new enterprises or grow existing ones with the intention of generating economic and social value is referred to as entrepreneurship (Shane and Venkataraman 2018). We can see that the core value in all these definitions is about innovation and novelty to create value, and in many of them, scholars also have society in mind. Thus, we can say that entrepreneurship is somehow related to sustainability.

The establishment of new firms in rural areas, which are frequently characterised by limited access to resources and infrastructure, is referred to as rural entrepreneurship (Bosma et al. 2008). In order to spur economic growth and improve these places' social and environmental sustainability, rural entrepreneurship entails developing and administrating new businesses in rural areas (Carayannis and Rakhmatullin 2014). Glaeser and Ker (2009) argue that the formation and administration of new businesses in rural areas intending to spur economic growth and foster community development is called rural entrepreneurship. Thus, we can see that in rural entrepreneurship scholars focus even more on community and sustainability.

2.5 Regenerative Agriculture

Regenerative agriculture is a method of managing land that prioritises the restoration and renewal of ecosystem functions, diversity of living organisms, and soil health in order to improve agricultural efficiency and sustainability (LaCanne and Lundgren 2018). Rhodes (2017) claims that regenerative agriculture's primary goal is to improve soil quality or recover severely damaged soil, which benefits water, vegetation, and land productivity in a symbiotic way. Regenerative agriculture is defined as an approach to farming that maximises productivity while minimising the negative effects of agriculture on the environment. Regenerative farming strives to improve soil health and restore severely depleted soil (Robert Rodale 1983; Giller et al. 2021). Giller et al. (2021) assert that soil health and biodiversity are two pressing crises that regenerative agriculture tries to address.

Harwood (1983) and Giller et al. (2021) propose 10 principles for regenerative agriculture. 1) Regenerative agriculture should produce high-nutrient food at high yields without biocides. 2) Regenerative agriculture should aim to increase soil productivity by enhancing upper soil layers' depth, fertility, and physical characteristics. 3) Nutrient-flow systems that integrate soil flora and fauna are efficient, environmentally friendly, and provide better crop nutrition. 4) Crop production should rely on biological interactions, avoiding the use of synthetic biocides. 5) Substances that disrupt the farming system's biological structure should not be used. 6) Regenerative agriculture requires an intimate relationship between the manager and the system itself. 7) Integrated systems that rely on biological nitrogen fixation should be utilised. 8) Animals should be fed and housed in a manner that prevents hormones and prophylactic antibiotics in human food. 9) Agricultural production should generate more employment. 10) Regenerative agriculture requires national-level planning, while relying on local and regional self-reliance to close nutrient-flow loops.

2.6 Conceptual framework

Thus far five concepts of sustainability, business model, sustainable business model, entrepreneurship, and regenerative agriculture are presented in this chapter. In this part the way the researcher will use these concepts and put them together in order to answer the research questions is introduced and discussed.

The aim of the study is to develop an understanding of how rural entrepreneurs perform sustainable agriculture, and both research questions are oriented around business models. Thus, the core of the study is about understanding business models of rural entrepreneurs. However, as it is about finding out how they do sustainable agriculture, the study is performed in the sustainability context (as shown in figure. 1), and it is focused on rural entrepreneurs' sustainable business models. In order to limit the study and get a deeper understanding of the cases regenerative farmers are chosen as representatives of rural entrepreneurs. Thus, in this thesis, value creation, value, delivery, and value capture of the regenerative farmers in the sustainability context is investigated.

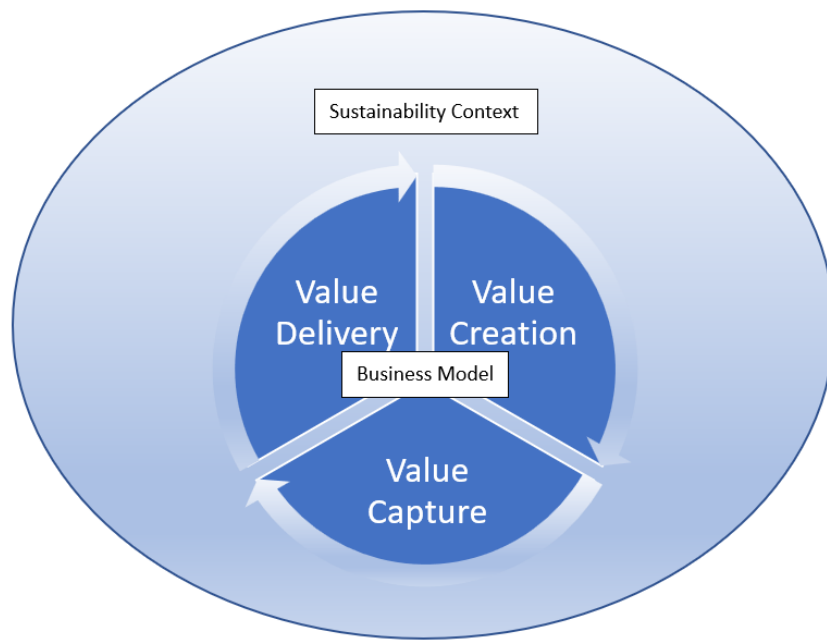


Figure 1 Conceptual framework

3. Methodology

This chapter elaborates on the research methodology used in the following study. Firstly, the research philosophy is introduced, followed by a description of the research design, which encompasses a review of relevant literature, the methods of data collection, and analysis. Lastly, the chapter concludes by discussing ethical considerations and qualitative criteria relevant to the study.

3.1 Research philosophy

The philosophy of this study is based on relativism. Thus, according to Bechara and Van de Ven (2007), we can say that the ontology of the study is social constructivism, and the epistemology of the research is interpretivism. Relativism philosophy challenges the demarcation problem and puts emphasis on the connection between the origin and authenticity of theories (Bechara and Van de Ven 2007). Relativism philosophy looks at reality as socially constructed and claims that the objective of social science is comprehending the meanings people assign to reality, rather than merely identifying how reality functions (Bechara and Van de Ven 2007). Additionally, it refutes the positivist belief that scientific methods offer an objective means of developing knowledge (Bechara and Van de Ven 2007). According to this philosophy, scientists construct a perception of reality based on their interests, values, and perspectives, and their observations and data provide nothing more than facts (Bechara and Van de Ven 2007).

According to Guba and Lincoln (1994), each researcher's research philosophy is shaped by the 'researcher's own beliefs and point of view. They argue that a researcher must consider influential factors such as ontological and epistemological perspectives while selecting a research methodology. These perspectives are closely linked to the methodology chosen and the assumptions made based on different perspectives (Guba and Lincoln 1994). Ontology is concerned with the philosophy of reality, specifically the idea that there is something tangible and knowable. Epistemology concerns acquiring knowledge and understanding things (Guba and Lincoln 1994).

This research focuses on farmers' perceived reality about how they run their farms and how they implement sustainability. The researcher uses a constructivist approach, suggesting that social events and their interpretations are constantly created and shaped by the people involved (Bryman and Bell 2015; Mackenzie & Knipe 2006; Guba and Lincoln 1994). This means that researchers rely on participants' perspectives to understand the studied situation rather than starting with a pre-existing theory. Unlike positivism, constructivism creates or contributes

a theory based on inductive reasoning (Bryman and Bell 2015; Mackenzie & Knipe 2006).

3.2 Research Design

As mentioned before, this study aims to understand the business models of regenerative farms. Thus, the approach for this study would be inductive. According to Bryman and Bell (2007); Creswell (2013), when the theory is the study's outcome, then the research would have an inductive approach, while it is the other way for the deductive approach. In the inductive approach, the researcher leaves the "test room method" and chooses a qualitative strategy based on interviews and observations (Bryman and Bell 2015). Hence this study is qualitative research.

In this study case study is used as the design for the research. The fundamental approach of a case study involves a thorough and in-depth examination of a single instance (Bryman and Bell 2015). Stake (1995) emphasizes that case study research focuses on understanding the intricacies and unique characteristics of the specific case being studied. As we have a research question this study is based on an inductive case study typology (De Vaus 2001). According to the definitions by De Vaus (2001), this case study is multiple and descriptive as it tries to describe and understand the business models of regenerative farms. It is theory building as the goal is to understand something new and is embedded because it is not concerned with the holistic case and focuses on the business models. It is a parallel multiple-case study because it looks at all cases at the same time and not in a sequential way. The author is interested both in what has happened previously on the farms and about the time being. Thus, it is not just a retrospective case study by (De Vaus 2001).

Case studies allow researchers to answer questions about "how" and "why" and track organisational processes over time (Woiceshyn & Daellenbach 2018). According to Eriksson and Kovalainen (2016), this type of research is helpful in uncovering rich and detailed descriptions of organisational phenomena. By providing a "thick description," qualitative data and analysis can generate new theoretical explanations, as Eisenhardt et al. (2016) suggested. Bryman and Bell (2007) argue that qualitative research focuses on words rather than quantification when gathering and analysing data. Thus, in this study, some regenerative farmers are chosen, and the researcher implements interviews with them to understand the business models of their farms.

Each interview is done with an individual regenerative farmer. Hence each of them is a separate case. Thus, the best design for this study is a multiple-case study. The objective of analysing a case study is to focus on the distinctive characteristics of the case and to gain a profound comprehension of its intricate nature (Bryman

and Bell 2015), which is completely in line with the aim of this study that understanding business models of regenerative farmers. The primary justification for utilising a multiple-case study approach is that it enhances the development of theories (Bryman and Bell 2015; Yin 1984; Eisenhardt 1989). By examining and comparing two or more cases, the researcher can more effectively determine the conditions under which a theory is valid or invalid. This argument is supported by Yin (1984) and Eisenhardt (1989).

3.2.1 Literature review

The researcher conducts a narrative literature review on the subject and about the related concepts such as "sustainability," "business model," "sustainable business model," and "regenerative farming" to justify the research problem and gain an understanding of what has been done on the topic. Primo, Google Scholar, Web-of-Science, Elsevier Scopus, Emerald Insight, and SAGE Publications, all of which provide data on business management and economics, were among the databases searched for the chosen themes. Peer-reviewed papers, conference proceedings, and books/chapters from reliable sources—all in English—were used in the research. Searches for pertinent topics included the previously listed themes as well as others like "business model innovation" and "sustainable farming."

Qualitative sources suggest that reviewing existing literature is important to justify the research problem and contextualise the study within the broader literature on the topic (Cresswell 2015). According to Bryman and Bell (2015), the literature review can be divided into systematic and narrative. They suggest that a qualitative approach may benefit more from a narrative literature review because it offers more flexibility. Yin (2013) supports the idea that a narrative literature review can lead to a deeper and novel understanding of the studied topic. This is because a narrative review is less structured and more extensive than a systematic review, allowing for greater exploration and flexibility.

3.2.2 Data collection

The data collection tool used in this study would be to interview regenerative farmers. The primary instruments qualitative researchers utilise include (whether as a participant or non-participant) conducting comprehensive one-on-one interviews, utilising a range of narrative or documentary resources, and organising focused group discussions (Sim 1997). Interviews are used to explore individuals' views, experiences, beliefs, and/or motivations on specific matters (Gill et al. 2008). This study aims to understand the business model of regenerative farmers, thus the best tool for data collection for this study would be interviewing.

The data collection tool used in this study would be to interview regenerative farmers. The primary instruments qualitative researchers utilise include (whether

as a participant or non-participant) conducting comprehensive one-on-one interviews, utilising a range of narrative or documentary resources, and organising focused group discussions (Sim 1997). Interviews are used to explore individuals' views, experiences, beliefs, and/or motivations on specific matters (Gill et al. 2008). This study aims to understand the business model of regenerative farmers, thus the best tool for data collection for this study would be interviewing.

Semi-structured interviews are used in this study, as semi-structured interviews involve a set of fundamental questions that outline the topics to be examined and offer the interviewer or interviewee the flexibility to explore an idea or response in greater depth (Gill et al. 2008; Bryman and Bell 2015). Structured interviews are essentially questionnaires that are administered verbally. They involve asking a predetermined set of questions, with little or no variation and no opportunity to follow up with participants for further elaboration. As a result, they are relatively quick and easy to conduct. They may be helpful in cases with issues with literacy or numeracy or if specific questions require clarification. However, they only permit limited participant responses and are inadequate if in-depth insights are required (Gill et al. 2008; Bryman and Bell 2015). Compared to structured interviews, the flexibility of the semi-structured approach permits the revelation or expansion of information that may be significant to participants but had not been previously considered relevant by the research team (Gill et al. 2008; Bryman and Bell 2015). On the other hand, in an unstructured interview, the interviewer often simply has a list of questions or issues, which is sometimes referred to as an interview guide. (Bryman and Bell 2015). In this case it might result in falling out of the focus, thus semi-structured interviews are chosen as the data collection tool.

Table 1 conducted interviews

Farm	Location	Interview Method	Interview Length
A	Central Sweden	Zoom	83 Mins
B	Central Sweden	Zoom	158 Mins
C	Western Sweden	Zoom	182 Mins
D	Southern Sweden	Zoom	107 Mins

3.2.3 Case selection

According to Robinson (2014), there is a four-step approach for sampling in qualitative interview-based research, which combines theory and process in the following ways: (1) defining the sample universe by establishing specific inclusion and exclusion criteria for potential participants, (2) determining an appropriate sample size by taking into account both epistemological and practical considerations, (3) selecting a suitable sampling strategy, and (4) sourcing the sample, which involves considerations related to advertising, incentivisation, avoidance of bias, and ethical concerns related to informed consent.

As this study aims to understand how entrepreneurs perform sustainable agriculture in rural areas and find out about how they develop their business model, regenerative farmers were chosen as the sample universe. The sample size will be restricted by the time constraints of the master's thesis, and data collection through interviews will continue until the researcher's limited time for data analysis runs out, or the sample becomes saturated. Since all regenerative farmers have the potential to participate in this study, they will be chosen through convenience sampling and their willingness to be interviewed. To source the sample, all necessary measures will be taken to avoid bias and provide participants with sufficient information while ensuring that ethical perspectives are respected.

In this study a number of farmers were chosen on <https://www.regenerativlantbruk.se/> website and emails were sent for them as all regenerative farmers could be part of the sample. Then sampling continued through asking the farmers that replied back to introduce their friends, neighbours, and colleagues, that were open for participation and sending more emails. After that emails and phone calls were made to arrange the interviews.

3.2.4 Data analysis

Thematic data analysis is chosen for analysing data in this study. One of the most popular methods for analysing qualitative data is thematic analysis, which looks for themes in transcripts or field notes (Bryman and Bell 2015). They argue that one potential way to identify the themes is the quantity of occurrence of the words and phrases. As this study follows an inductive approach and aims to understand regenerative farmers' business models, thematic analysis is a good data analysis choice because it can help identify different parts of the business models.

Thematic data analysis researchers follow an inductive approach when developing a set of codes for qualitative data, avoiding preconceived ideas that may bias the results. They review the data line by line, assign codes to emerging concepts, and continue to refine the codes as they review more data. They compare text segments with previously assigned codes to accurately reflect the concept. This process, called "constant comparison," helps refine existing codes and identify new

ones. As a result, the code structure evolves inductively, reflecting the participants' experiences (Bradley et al. 2007; Bryman and Bell 2015; Thomas 2003).

Thomas (2003) suggests a five steps procedure for this: 1. Preparation of raw data files ("data cleaning"), 2. A close reading of the text, 3. Creation of categories, 4. Overlapping coding and uncoded text, 5. Continuing revision and refinement of the category system. In this study, these five steps will be followed.

The second phase of the research will involve employing a cross-case analysis technique to examine similarities and differences within a multiple case study, as outlined by Miles and Huberman (1994). This type of analysis is particularly intriguing because it helps to identify patterns and distinctions among various elements within the same context (Miles & Huberman, 1994). It is important to note, as stated by Miles and Huberman (1994), that this process does not yield statistical generalizations but provides an overview of the circumstances in which the findings may occur. Furthermore, it contributes to expanding our understanding and facilitating analytical generalization (Glaser & Strauss, 1967; Miles & Huberman, 1994; Yin, 1994). Following the completion of these two stages, a constant comparative analysis will be presented to offer a comprehensive insight into the results.

3.2.5 Data coding

In this study, the data is collected and processed to ensure accuracy after conducting interviews. The data will then be carefully transcribed and categorised, followed by coding and analysis to extract results.

In thematic data analysis, coding is a crucial process involving reviewing transcripts or field notes and assigning labels or names to parts that have potential theoretical significance or are particularly important within the social context (Bryman and Bell 2015; Thomas 2003). In Thematic analysis, coding is a critical process that allows the researcher to organise the data and uncover links between concepts and experiences (Thomas 2003). The codes are labels assigned to whole documents or segments of documents to help catalogue key concepts while preserving the context in which these concepts occur. The coding process involves developing, finalising, and applying the code structure (Thomas 2003).

During the study after conducting the interviews, the researcher started to transcribe and read them carefully. Coding in this study was done in two phases. In the first phase about four hundred codes were extracted from the significant and important parts of the interviews. Then in the second phase these codes were categorized into fifteen themes that some of them were picked from the theory and some of them were produced based on the codes that were extracted. This technique is called *in vivo*. *In vivo* coding is a qualitative data analysis technique that focuses on capturing and analysing the exact words spoken by the participants (Manning 2017). Appendix includes some parts of the coding procedure.

3.3 Quality criteria

In the conventional positivist research paradigm, standards like validity, reliability, and objectivity are often used to evaluate the study's quality (Bryman and Bell 2015). However, for qualitative research, trustworthiness is evaluated using four criteria: credibility, transferability, dependability, and confirmability. As this research is qualitative, the latter set of criteria is emphasised, as validity and reliability are primarily associated with quantitative research (Bryman and Bell 2015).

3.3.1 Credibility

According to Bryman and Bell (2015), credibility refers to the degree to which the outcomes of research are convincing and approved by others. Therefore, if the research lacks credibility, others may have doubts and mistrust the findings. Consequently, credibility is an essential aspect of any research. To improve credibility, one strategy is to maximise transparency.

For this study, some regenerative farmers are selected by the convenience sampling method as the data source. Data collection and analysis are conducted using established methods described in the previous sections to ensure credibility. The research design specifies that the data is to be collected through semi-structured interviews and analysed thematically. The specific procedures for conducting the interviews and analysing the data will be based on Bryman and Bell (2015) to avoid any credibility issues. Additionally, the researcher will seek guidance from the supervisor, as an expert in the field, to ensure that each process step is carefully checked and to avoid any potential mistakes.

3.3.2 Transferability

Bryman and Bell (2015) argue that transferability refers to whether the findings of a study can be generalised to other comparable cases. Qualitative research tends to focus on in-depth analysis of small groups and individuals, which may limit the generalizability of the findings to a specific case, compared to quantitative research, which tends to examine cases more broadly. More detailed and consistent reporting can assist researchers in ensuring transferability in determining if the findings are unique to the specific case or if they can be applied to other similar cases.

Bryman and Bell (2015) state that achieving transferability in qualitative research is difficult. Furthermore, since this study is just a multiple-case study with a few cases, there is little opportunity to compare the analysed data with other cases. However, as these cases are so similar to each other regarding their business models and how they run their farms and these cases are not picked for the study as it was

mentioned in the previous parts of the study, we can say that it is likely that other Swedish regenerative farmers have more or less the same business model. For example, about the revenue stream almost all of them were somehow the same. This can be applied to cost structure of the farms or the way they see their relationship with their customers as well. As the business models of these four farms are more or less the same it is possible that their business models can be transferred to other Swedish regenerative farmers.

3.3.3 Dependability

Dependability is a criterion in qualitative research, that can be compared to reliability in quantitative research. It involves using an auditing approach to ensure that appropriate actions are taken throughout the research process, as noted by Bryman and Bell (2015). Keeping a record of all aspects and phases of the research can enhance its dependability because other researchers can review and evaluate them. All steps are performed according to established literature, such as Bryman and Bell (2015), to ensure dependability. At the same the whole process of research is completely clear and transparent, and this can help to increase dependability of the study. The study is reported, and this means more transparency, and other researchers can go through the text to look for any potential problems. The researcher will verify each step with the supervisor before and after its implementation to avoid any potential issues.

3.3.4 Confirmability

Confirmability in qualitative research primarily focuses on the researcher's objectivity, as Bryman and Bell (2015) outlined. To achieve this objective, the researcher strives to eliminate any bias in the data collection and analysis and ensures impartiality toward any hypothesis. To improve the confirmability, the content of the interviews is transcribed and read many times and sent back for the interviewees to double check and confirm if everything is interpreted correctly by the researcher. Then the data was analysed thoroughly without any bias. The supervisor is present to correct potential errors and ensure the research remains objective.

3.4 Ethical considerations

While conducting qualitative research, it is crucial to consider ethical issues carefully. Ethical considerations are particularly important in qualitative research

because the researcher works closely with the participants, as noted by Bryman and Bell (2015).

In this research, the confidentiality of the farmers' data is protected according to the General Data Protection Regulation (GDPR). Prior to the interviews, farmers are given a detailed explanation of the research's purpose and questions via email and at the start of the interview. They participated voluntarily with informed consent. The researcher obtained the farmers' approval to record the interview and guarantee anonymity. The recorded content is only available to the researcher and used for the study. The researcher assures farmers that their privacy is not violated, and their information is kept confidential. Additionally, the researcher ensures the farmers are not deceived about the research's aim.

4. Empirical findings

In this chapter each case study is outlined in detail to provide the reader with a comprehensive understanding of how these regenerative farmers have effectively managed their farm activities. The descriptions of these case studies serve as the data, and they will be analysed in the next chapter.

4.1 Farm A

This farm is located in central part of Sweden, they have been running this farm for around thirteen years. The area of the farm is around 100 hectares, but it is not fully used as there are only around thirty cows and twenty sheep on the farm. Only one hectare of it is owned by the farmers and the rest is just used with the permission of the local owners. There are no crops grown on the farm, it is just the natural grass that grows there, and the animals use it during the time that it is available on land. It is interesting that they have a background of being a physiotherapist who decided to change the career and become a regenerative farmer.

As it looks clear their most important activity is producing meat, however, their revenue comes from different sources the most important one is EU subsidies, selling meat, guiding and teaching other regenerative farmers, and visitors who come to visit the farm. The important point about their income is that they mention that their goal is not to make the maximum amount of money that is possible for them. They say that they can ask for higher prices, but they don't as they prefer more local people to be able to use high-quality meat and help the local community to become stronger. Their cost structure is not that complex as they try to use as less inputs as possible and the only major cost is to produce the fodder for the animals during the wintertime that they are not able to graze.

Almost all the meat they sell goes to local customers and they see it as an advantage for themselves. They say that the local people who see these animals every day while commuting know that these animals have a good and happy life and they are sure that the meat that they are buying is of good quality as the animals are grazing normally. The local people are happy to have the animals around them and they even complain when they can see them less during the cold season.

They mention that they want to be a positive force and that is why they have chosen to be regenerative farmers. They see everything related to each other and during the interview, they mentioned so many times that they try to see the bigger picture where people, land, and animals are connected to each other, and they said that one of the reasons that they prefer to sell their products to local people is to preserve this connection between people and their food. They believe that these animals grazing freely on the land will help the land heal over time and this can be good for

the animals, the land, and the plants as they can serve each other. They are trying to keep the input from outside of the farm to a minimum. This means that they never use chemical fertilizers or any kind of pesticides, or herbicides. They state that not using chemical products on the farm besides letting the animals have their natural life and intervening as less as possible helps to improve biodiversity on the farm. During their thirteen years of working on this farm, they have changed some practices to optimize the outcome. This includes keeping the mother cows with calves separately in another group, letting them be by their calves for about ten months, and using the forest as a natural shield for keeping animals from wind which was done previously by buildings by entering a program that they should pay for.

They see some opportunities and some risks in their career. For instance, they see the large amount of land that they are not using as an opportunity that in the future they or some other person that shares the same mindset about agriculture with them can use to expand the number of animals they have or start to have some other animals for example pigs or chickens. The risk that they see in front of them, origins in that they believe the authorities don't think about agriculture like they do. They are concerned that for example, the statistics that are published about GHG emissions of producing cows can affect the rules for EU subsidies which can affect them a lot. They assert that they will be able to survive without the subsidies, but they will need to increase the price, and they don't want to do it as their goal is to produce high-quality and affordable food for the local community. The other risk that concerns them is that they don't have a signed contract with the landowners and they are just using their land on an oral agreement. They think that this might be a problem for them in the long term.

Table 2 Farm A summary of information

Attributes	Located in Central Sweden, 13 years of experience, 30 cows and 20 sheep, growing grass, The farmer has background of being a physiotherapist.
Key activities	Producing meat and grass
Key resources	Livestock, land
Key partners and stakeholders	Local people, Landowner, Tractor owner, butcher

Customers segments and relationship	The produced meat mostly goes to the local people, and they are satisfied that their comes from the animal that have a good and happy life, and they can see them every day on the landscape
Revenue stream	EU subsidies, selling meat, guiding, and teaching other people, visitors
Cost structure	Producing winter fodder
Sustainability	They want to be the positive force, they try to see the bigger picture, they prefer to sell their meat to the local community to preserve the connection between people and their food, Avoiding chemicals for biodiversity
Changes	Separating the mother cows, prolonging their time with the calves, using forest as the natural wind protection.

Key sentence: My goal is not earning most money possible. I can ask for more money, but I prefer more people to be able to buy high quality and healthy meat. (Case A)

4.2 Farm B

The farm is situated in the central Sweden, and the owners have had a background in farming for more than twenty years and are living on this farm since 2005. They used to practice conventional farming practices for about seven or eight years but then decided to change their method to regenerative farming. Previously, they used to cultivate barley, oat, and wheat on the farm but now they focus solely on grass, and they do not do anything for growing it, and the grass is grown completely naturally. They have about forty cows, thirty sheep, and a few pigs and chickens. They try to graze them in the forests and grazing ground but mention that there are wolves and bears in the area which makes it difficult for them. Despite this, the owners are committed to preserving biodiversity and are comfortable with the wildlife living in the area and just try to keep them away from their animals. Interestingly, the owners have a background in archaeology and are passionate about culture, history, and sustainable living.

Similar to the first farm, the primary activity on this farm is meat production, and there are different resources for income. The owners note that about forty percent of the revenue comes from EU subsidies which they refer to as EU salary since they believe this is the compensation for the services that they provide for the environment and society. Then about thirty to forty percent of revenue comes from

meat with beef comprising the majority (about eighty percent), and the rest comes from lamb and pork. While they also generate income from activities like educating others, teaching courses, and selling wool or fur, these are not significant revenue streams. Their most significant expenses are loan repayments and interests as they do not own the farm completely yet, followed by the winter fodder for the animal. Next one is maintenance costs of a tractor that they try to keep using as low as possible. The most crucial point that they mention is that they see everything as a big system that is interconnected with each other, thus they assert that they want their farm to be profitable in all aspects not only on the financial dimension, thus they assume vitalizing the landscape, producing healthy food for the people, and healthy and sustainable animals on the farm as a profit for themselves.

The majority of their products go to local restaurants and individual people which means they sell their meat mostly to local customers, but sometimes they take a trip to Stockholm and sell some meat to their relatives and friends that live there. The farmers believe that the local customers are happy that they use the meat that comes from the animals that actually are doing good for the landscape and live a happy life. The customers appreciate that they have the opportunity to consume high-quality meat that comes from the animals that eat natural grass which is what they are basically born to eat. The owners believe that this satisfaction comes from their transparency that the customers can see the way they are producing meat and actually, it is important for the consumers that they practice regenerative farming.

As it was discussed in the previous parts the owners do not see profitability only in the financial way and they believe that producing healthy food for the local people, improving the biodiversity, and vitalizing the land as a profit for their farm. They have a deep belief in sustainability and try to keep everything as natural as possible. They think even in order to get a higher financial profit it is better to trust nature and intervene less. Thus, instead of trying to increase their revenue, they try to reduce their costs, by using less machinery like tractors which leads to less fossil fuel consumption, and completely avoiding any kind of pesticides and herbicides. They are even sharing the necessary machinery with the neighbour farmers to keep their usage of them to a minimum.

They completely trust their sustainable mindset and even sometimes when they talk, they note that it is not they who have a substantial role on the farm, but it is the animals. They argue that it is the animals that are the motor for the farm. They claim when the animals are eating, they are doing their job as the drivers of the farms. They say that after they started these practices on their farm and let everything on the farm happen naturally the biodiversity in the area is improved and some species that had migrated are back now. Even the earthworms that were not there for a long time are back now.

On the social dimension, they try to inspire other people to shift their mindset of controlling nature as they believe nature knows the best how to manage life. They

think that it is possible as they have been inspired by other people, so they will try their best to keep this mindset and transfer it to others. In their point of view, as there are so many people in the world that are doing detrimental things to nature, there must be some other who should try to heal the land and environment to keep the balance. That is why they try to educate other farmers and share their experiences with them on how to treat and nurture the nature and ecosystem. Thus, try to be in a mutual relationship with other farmers to teach them and learn from them.

The changes that were made on their farm during the twenty years of farming are aligned with what they believe about trusting nature. They said that they stopped ploughing and tilling the soil which is pretty common in conventional farming. They claim that it will decrease the production for the first two or three years, but it will maintain and even get better after that. They believe that the reason is while ploughing the soil so many microorganisms are killed, and this can harm the farm in the long term. The other change that was made was shifting from monoculture farming to multicultural farming and seeing other plants and animals as friends and not enemies. As the farmers argue if we try to keep the monoculture and see other species as competitors it means we should fight them and actually fight nature which will not lead to good results. They even had an innovation about fencing and stopped using the common poles which contain poisonous chemicals and bump out during the winter. They use the natural trees as the fences, and they say that even the damage that is done to the tree in this process strengthens the immune system of the tree. This technique can be profitable in so many ways as it is not needed to pay for the poles, the poisonous substances are not near the products, and it keeps the landscape much more pleasant.

They see the mainstream mindset of farmers and people as a risk to society, and they believe that it is even sometimes supported by the authorities and policymakers. For instance, they note that there is a rule that there should not be more than a certain number of trees on the pastures, so if they want to use the land as a pasture and the number of trees surpasses that limitation, they need to cut some trees down. At the same time, they believe if people start to trust nature it is possible to overcome the problems.

Table 3 Farm B summary of information

Attributes	Is located in Central part of Sweden, about 20 years of experience, forty cows, thirty sheep, a few pigs and chicken, background in archaeology and are passionate about, culture, history, and sustainable living.
Key activities	Producing meat, grass
Key resources	Livestock, tractor, summer pasture, forest, and grazing ground
Key partners and stakeholders	Local people, local and international regenerative farmers.
Customers segments and relationship	Customers are local restaurants and individuals; customers are happy that they are transparent and have high quality meat from livestock that eat grass what they are born for. They are happy that they have meat from animals that they see every day.
Revenue stream	Meat production (beef, lamb, pork), EU subsidies, educating others and teaching courses, selling wool and fur.
Cost structure	Loan and interest payments, winter fodder, tractor
Sustainability	They see animals as the drivers, biodiversity is improved, Inspiring others
Changes	Stopping plowing and tilling (production decreases first), shifting from monoculture to multi culture, fencing, conventional to regenerative

Key sentence: It should be profitable in all ways, not only in money but in outcomes like in vitalizing our landscape, producing healthy food for people and healthy sustainable animals for themselves. lower our income and to make as much use of this place as possible for us and maybe for others. (Case B)

4.3 Farm C

The farm is located in Western part of Sweden. They have a background of farming for more than twenty years and they used to be conventional farmers before deciding to implement regenerative farming practices. They own a flock with slightly more than five hundred sheep. They do not grow any kind of crops on the farm, and it is just grass that is grown naturally. One of them is an accredited trainer

in holistic management and one of the members of regenerative farmers association in Nordic countries.

They have a number of activities that bring money to the farm but the most important one that has the biggest part is selling meat. This constitutes about forty percent of the income, after that it is EU subsidies, selling skin, and teaching. They have designed a one-year (two-semester) course for the farmers that can increase their knowledge about regenerative agriculture as well as holistic management. There is a list of costs for this farm, like rent of the pasture when they graze their animals in other lands, rent of tractor, fencing, shelter, minerals, and salt. However, the two major costs are the salary of the family and the winter fodder. Thus, they have decided to prolong the grazing season as much as possible since it can benefit the farmers, the land, and the animals. They note that if the EU subsidies are cut for any reasons in the future, they will not be able to cover their costs.

They are so focused on holistic management like the previous farmers that were discussed and try to see everything in the world as completely interrelated and connected to each other. That is why they prefer to sell their meat to local restaurants and people. Their farm is located in an area that is considered a tourist region during the skiing season and so many tourists go there at that time. Thus, there are some fancy hotels and restaurants in the area that are the most important customers. They have persuaded the restaurants that they need to take part from the beginning of the process. It means that they need to pay some part of the money in the season of lambing to be able to buy the meat when they are grown. They see this as closing the loop and note that it makes the customers of the restaurant to have a better feeling about their food when the waiter tells them that this food is produced from the flock that is partly owned by the hotel or the restaurant, and probably they have seen the sheep the previous year that they were here.

They state that their focus has never been to run a viable business, but to make a change. They have the opportunity to sell their meat to some parts of the country to some anonymous customers at a higher price, but they drop this chance as they believe that selling the products to the local people who have seen the animal for a long time during their grazing season makes more sense. The reason is that they believe that different parts of nature cannot be defined separately on themselves and the whole ecosystem holds the meaning. For instance, they argue that the beehive does not have any meaning on its own and it must be defined by the ecosystem surrounding it. All these views come from the holistic management concept. They are trying to make a change in the community. It means that they want to make people believe that they are connected with the ecosystem, and they are part of it. Then everyone will care about the environment, landscape, biodiversity, and ecosystem. They state that this is the only way if we want to keep the earth for the next generations. Similar to the previous farm owners they do not see their sheep as animals, and they consider them as tools that can improve the

land and the biodiversity in the region. They try to keep the inputs from the outside of the farm as low as possible as they think it raises the costs and decreases the quality of the product. They see the whole thing as a process of learning and getting better. They think the only way to overcome the problems that the world is facing is to change the mindset of the people.

The most important change that they have made on the farm is setting the time of lambing. Previously, the lambs came in April when the animals were inside yet. They note that it was very problematic to manage it since the shelter was not so big, and the sheep consumed winter fodder before lambing there were so many complications and many of them needed help while lambing. However, when they changed the time of lambing to June when the animals were outside and were grazing most of the complications were solved automatically.

They see big corporations and institutions as a potential risk for regenerative farming as they think that the concept of organic farming is being robbed by these corporations and being used as a marketing tool to convince customers to buy their products. They hope this will not happen for regenerative farming. Simultaneously they believe that the young generation is the opportunity for the future of the earth. They hope that the young generation becomes aware of the environmental situation of our planet and implement needed actions before it is too late.

Table 4 Farm C summary of information

Attributes	This farm is located at Western Sweden, about 20 years of experience
Key activities	Meat and grass production
Key resources	A flock of 500 sheep
Key partners and stakeholders	Local people, local hotels, and restaurants
Customers segments and relationship	Selling meat to local people, hotels, and restaurants. Restaurants serve their own lambs and tell the story to the customers. Cutting the middlemen by selling in bulk scale.
Revenue stream	Selling meat, EU subsidies, teaching, selling skin
Cost structure	Salary of the family, winter fodder, rent of tractor, fencing, shelter
Sustainability	Holistic management, changing the mindset of the society,
Changes	Conventional to regenerative, changing lambing time from April to June.

Key sentence: My focus has never been on running a viable business, has been to make some kind of a difference. Products were sold to somewhere far away and it just went to anonymous customers with higher prices, but I stopped it. (Case C)

4.4 Farm D

The fourth farm is located at South of Sweden. It has been a family farm for a long time, and they are almost the tenth generation that are living and farming on it. Their ancestors have been conventional farmers who used chemicals on farm and grew different crops such as potatoes, cereals, sugar beets, and animals like, cows and pigs. One of them has an animal science degree from SLU and when they inherited the farm, they decided to exclude the crops and focus on livestock. At the time they there are about one hundred and fifty cows and twenty horses on the farm. He has the background of being consultant and even being CEO of a bull company. When he started to work on this farm, he followed conventional farming practices like the previous generations. One of the reasons he mentions for that is having access to cheap fodder for the livestock as this farm is located so close to a distiller company and had the opportunity to use the straw from there as a cheap and easy resource for feeding the animal. However, after a while he changed his practices and chose to become a regenerative farmer. The farm is about one hundred hectares and this year he is using about seventy hectares of it as pasture and growing grass on them.

Similar to the previous farms there are several revenue streams for this farm. They note that the most money comes to the farm from EU subsidies, then it is selling meat, after that teaching and educating other people and farmers and lectures in conferences, and the last is selling some young horses and taking care of other people's horses. Visiting farm is another source of income but it does not bring that much money to the farm. They sell the meat to a small local slaughter. Although they do not sell the meat directly to the end consumer in the region but still it goes to the local people. When it comes to cost structure, they assert that the most important cost is the family's salary, the next one would be the fee that they pay for lease of the land as the farm is not wholly owned by them. Then it comes winter fodder, diesel, and electricity.

They argue that they are not necessarily just trying to get the highest price for their productions and maximize their profit, but they are trying to produce high quality meat that more people are able to afford it. They note that if they were just trying to get more money, they would easily just lease their land and they could earn much more money. They claim that they are looking at the bigger picture and their primary concern is soil erosion and that they are trying to keep it from happening by using the land all through the year. They try to extend the growing season as it can reduce the costs and benefit the land and the livestock as well. They note that this year they prolonged the grazing season to eighth of February. They make an effort to minimize the use of tractors and other equipment and opt for smaller or electric ones when it is really required. Riding horses is another option for them, and they use them pretty much. They mention that after a few years of

implementation of regenerative farming practices now the earth worms are back in the land. They have a goal to heal the land and ecosystem to a level that some bird species which used to live in the area but are disappeared come back. According to them, these birds are incredibly particular about their habitat, and if they decide to return to that area, the owners will consider it a significant accomplishment for themselves.

The most important risk in their point of view are the rules and regulations. They believe that they should be there because there some people that need it but they mention that even if there are no rules they will do the right thing so, the rules sometimes can make problems for them. The significant transformation that took place on the farm was transitioning from conventional to regenerative farming. They have a personal motivation for this change, as they believe that one of their family members suffers from serious health issues that they believe are caused by the use of harmful chemicals on the farm.

Table 5 Farm D summary of information

Attributes	Located at Southern Sweden, about 10th generation farmer, 150 cows, twenty horses, studied animal science at SLU
Key activities	Meat production, grass, horses
Key resources	Livestock, farm, tractor
Key partners and stakeholders	Contractor for harvesting grass, slaughterhouses
Customers segments and relationship	Selling to local slaughterhouses, producing healthy meat for the local community.
Revenue stream	EU subsidies, selling meat, teaching and educating other people, selling some young horses and taking care of other horses.
Cost structure	Family salary, land lease, winter fodder, diesel, electricity
Sustainability	Keeping something on land to prevent soil erosion, biodiversity
Changes	Conventional to regenerative

Key sentence: I just tried to get the, not necessarily the highest price, but the price or the way of selling my meat that will fit my context as well. I could make more money by just leasing the land but that's not the type of life I've chosen. (Case D)

5. Analysis and discussion

In this chapter, first a short analyse on the farms and farmer's attributes is conducted. Then, the gathered data that was presented in the previous chapter is analysed and discussed based on different components of the business model that are value creation, value capture, value delivery and proposition.

5.1 Farms and farmers' attributes

The first step in analysing these farms can be to take a look at their primary attributes. These attributes are shown in the table below:

Table 6 The attributes of farms and farmers

Farm	Location	Type of farm	Years of same farmer in Farming	Livestock	Number of each livestock	Crops	Education of the farmer
A	Central Sweden	Family farm	13	Cows/Sheep	30/20	Grass	Physiotherapist
B	Central Sweden	Family farm	More than 20	Cows/Sheep	40/30	Grass	Archaeologist
C	Western Sweden	Family farm	More than 20	Sheep	500	Grass	Holistic Management
D	Southern Sweden	Family farm	About 10th generation farmer	Cows/Horses	150/20	Grass	Animal Science

As it is shown in the table 6. these farms are located in different parts of the Sweden from almost north to the south. All of them are family farms and they are all experienced farmers as all of them hold a background for more than ten years. All of them are focused on livestock and they are producing meat. Three of them are specialized on beef production and one is focused on lamb. The number of the animals varies from fifty to five hundred, but they hold the potential to raise the

number of the livestock as the farms' areas are about one hundred hectares, thus they have the opportunity to increase the number of the animals, and even add new species or crops to their farms. At the moment they are just growing natural grass just for feeding the animals and they are not growing any kind of special crops but during the interviews they revealed that they are planning to add some crops to the farms in the future. Another common characteristic that all these farms share is that they are all managed by the educated people. For some of them their academic education is not in line with agriculture and farm management or related topics but all of them have had academic education.

5.2 Key sentences from each case

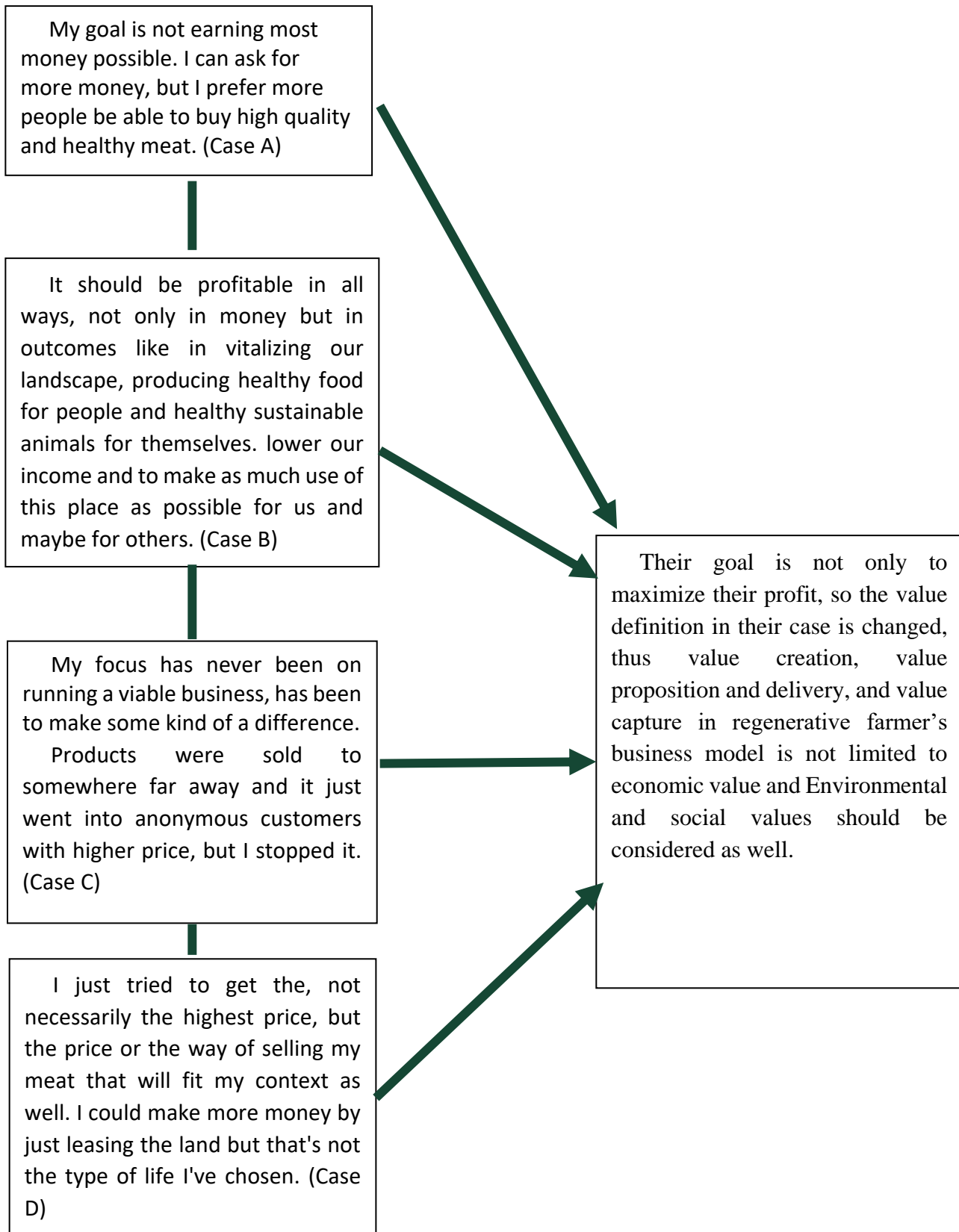


Figure 2 Regenerative farmers' values analysis

5.3 Farmers' values

Farm A:

The farmers mentioned that their intention is to have a positive impact, which is why they have chosen to pursue regenerative farming practices. Throughout the interview, they emphasized their holistic perspective, viewing the interconnectedness of people, land, and animals. They highlighted their preference for selling products to local individuals, as it helps maintain the connection between people and the food they consume. They firmly believe that allowing animals to graze freely on the land contributes to its healing process over time. This symbiotic relationship benefits the animals, the land, and the plants, as they mutually support each other. To minimize external inputs, they refrain from using chemical fertilizers, pesticides, or herbicides on the farm. They assert that by avoiding the use of such chemical products and intervening as minimally as possible, they can enhance biodiversity on the farm.

The previous paragraph shows that they are so involved in and care about sustainability. All three aspects of sustainability that were previously introduced are clear here (Elkington 1994). They are keeping their input to a minimum and this can improve the profit. They are not using any chemical products such as pesticides and herbicides and they let their livestock to graze on the land and this can improve fertility, and physical characteristics of the soil which contributes to improving the environmental aspect of sustainability. They prefer to sell their products to the local people so that they can use healthy and high-quality food, and this is the societal aspect of sustainability. But all these come from their sustainable mindset and the truth that they believe in sustainability concept and what they call it as looking at the bigger picture.

Farm B:

As discussed earlier, the owners of the farm have a broader understanding of profitability that goes beyond financial gains. They consider producing healthy food for the local community, improving biodiversity, and revitalizing the land as valuable returns for their farm. Their commitment to sustainability is deeply rooted, and they strive to maintain a natural approach. They firmly believe that trusting in nature and minimizing intervention leads to better financial outcomes. Instead of focusing on increasing revenue, they prioritize cost reduction by minimizing the use of machinery like tractors to reduce fossil fuel consumption. They also completely avoid the use of pesticides and herbicides. In fact, they share necessary machinery with neighbouring farmers to limit their overall usage.

They possess a strong faith in their sustainable mindset and often emphasize that the animals play a significant role on the farm. According to them, the animals serve as the driving force, as they fulfil their purpose by grazing and contributing to the farm's ecosystem. They claim that since implementing these practices and allowing

natural processes to unfold, the biodiversity in the area has improved. Previously migrated species have returned, and even earthworms, absent for a long time, are now present.

On the social dimension, they strive to inspire others to shift their mindset from controlling nature to acknowledging that nature knows best how to manage life. They believe that they can influence and educate others because they themselves have been inspired by like-minded individuals. Given the detrimental impact many people have on nature, they see it as their responsibility to heal the land and environment to maintain a balance. They actively engage with other farmers, sharing their experiences and knowledge on how to treat and nurture the natural ecosystem. They seek to establish a mutual relationship with fellow farmers, both teaching and learning from each other.

The previous three paragraphs clearly show these farmers deep belief in sustainable mindset and holistic management. This is their mindset that moves them in this way and is the engine that helps them to see everything interrelated that leads them to these sustainable actions.

Farm C:

Similar to the previously discussed farmers, these individuals are deeply committed to holistic management and perceive everything in the world as interconnected and interdependent. This perspective guides their decision to sell their meat to local restaurants and individuals. Their farm is located in a popular tourist region, particularly during the skiing season, attracting many visitors to the area. Consequently, high-end hotels and restaurants serve as their primary customers. They have successfully convinced these establishments to engage in the process from the beginning, requiring them to contribute a portion of the funds during the lambing season in exchange for purchasing the meat once the animals have grown. They view this approach as closing the loop and emphasize the positive impact it has on customers. When waiters inform diners that their meals are sourced from a flock partly owned by the hotel or restaurant, and possibly seen by the customers in previous years, it enhances the diners' connection to the food.

Their main focus has never been solely running a profitable business but rather making a transformative change. Although they have the opportunity to sell their meat to distant regions and anonymous customers at a higher price, they intentionally forget this chance. They firmly believe that selling products to local people who have witnessed the animals grazing over an extended period makes more sense. Their rationale stems from the belief that different components of nature cannot be viewed in isolation; instead, the entire ecosystem holds meaning. For example, they argue that a beehive, by itself, lacks significance and must be understood within the context of the surrounding ecosystem. These perspectives align with the concept of holistic management. Their aim is to create a shift within the community, fostering a sense of connection between people and the ecosystem,

where everyone cares about the environment, landscape, biodiversity, and the overall ecosystem. They assert that this is the only way to ensure a sustainable future for subsequent generations. Like the previous farm owners, they do not view their sheep solely as animals but as tools for improving the land and enhancing biodiversity in the region. They strive to minimize external inputs to the farm, as they believe it reduces costs and enhances the quality of their products. They approach the entire process as an opportunity for continuous learning and improvement. Ultimately, they believe that changing people's mindsets is the key to addressing the challenges faced by the world.

The last sentence shows that how deep they believe in sustainable mindsets, at the same time it is proof for that all the actions that they are having for sustainability stems from their sustainable mindset and looking at the bigger picture and holistic management.

Farm D:

Their perspective differs from simply striving for the highest prices and maximizing profits. Instead, their focus lies in producing high-quality meat that is affordable to a broader range of people. They emphasize that if their sole objective was to generate more income, they could easily lease their land and earn significantly higher profits. However, they prioritize taking a broader view of their operations. Their main concern centers around preventing soil erosion, and they actively work towards this goal by utilizing the land throughout the year. They strive to extend the growing season, as it not only reduces costs but also benefits both the land and livestock.

They emphasize the importance of minimizing the use of machinery and equipment, opting for smaller or electric alternatives when necessary. In fact, they frequently rely on riding horses as an alternative means of transportation on the farm. As a result of implementing regenerative farming practices over the course of several years, they are delighted to witness the return of earthworms to the land. Furthermore, they have set a goal to restore the land and ecosystem to a level where certain bird species that have disappeared from the area can return. They emphasize that these bird species are highly selective about their habitats, and if they choose to come back to their land, they will consider it a significant achievement.

Again, the previous two paragraphs show their sustainable mindset and how they accentuate environmental and social values like economic values. All these acts have origins in sustainable mindset and holistic management view.

5.3.1 Farmers' values Conclusion

A sustainable mindset and believing in holistic management view are the incentive and engine for these sustainable acts. This is what they all hold in common, and they all believe in it deeply. This is the only reason that they do not act like many

other people, and they have respect for the environment and society. This is what makes them different from the ones that only care about the profit feature.

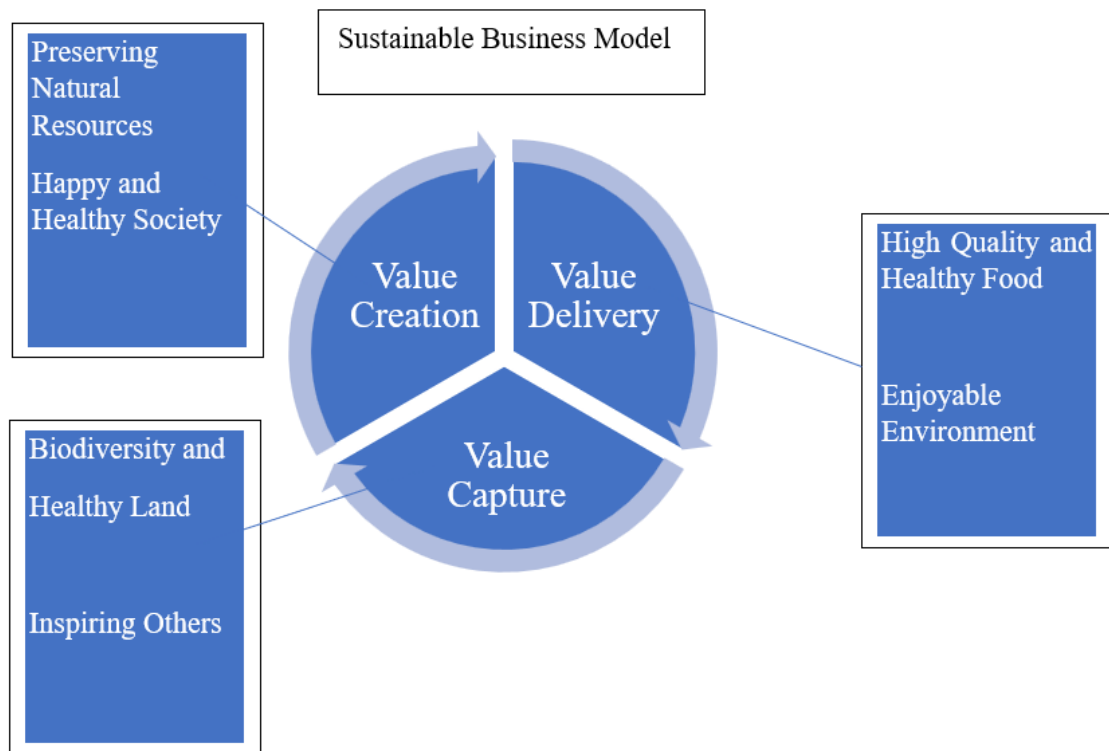


Figure 3 Added parts to sustainable business model

Thus, the findings of the study suggest that figure 5 can display the business models of the regenerative farmers more precisely than figure 4 which is a general sustainable business model.

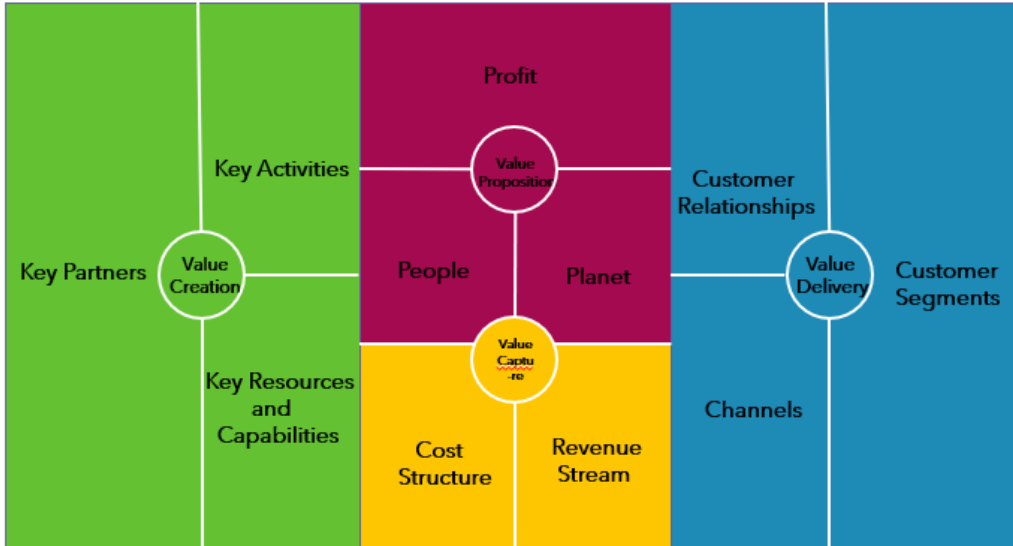


Figure 4 Sustainable business model (Bocken et al. 2014)



Figure 5 Authors depiction of sustainable business model

5.4 Analysis of the studied farms based on business models' components

In this part the farms were studied in the research are examined based on three components of the business models that as it was discussed previously are value

creation, value delivery and proposition, and value creation (Osterwalder and Pigneur 2005; Bocken et al. 2014). Consequently, each part will be tied to regenerative agriculture features, and sustainability due to triple bottom line which were presented in the second chapter of the study.

5.4.1 Value Creation

Value creation is one of the components of business models (Osterwalder and Pigneur 2005) which as it is discussed in the literature review itself is composed of key activities, key resources, partners and stakeholders.

Key activities and resources:

Key resources on all these farms are livestock and grass. The studied farms' key activities are producing meat and grass. Three of them are specialized in producing beef and one focuses on lamb production. The meat they produce is in high quality as they try to feed them with the grass that they grow on the farm naturally as much as possible, then for the winter fodder they use the same grass that is grown and kept for the winter. The food does not contain any kind of hormones, since as it was discussed in the literature review on of the principles of regenerative agriculture is avoiding hormones. They try not to use tractors and other machinery when the work can be done without them. Thus, we can see that all three components of sustainability that are profit, people, and planet are taken into account here, as they are producing high quality food for the people by keeping the production process as natural as possible and with the least damage possible for the planet that results in preserving natural resources.

Key partners and stakeholders:

All these farmers are deeply concerned about their local society and their partners are selected locally. As it was mentioned in the previous chapter, one of the partners are neighbouring farmers that try to share the machinery since they try to prevent buying them. They prefer to work with local restaurants, hotels, and slaughterhouses. Working with the local community makes them able to use less fuel for commuting and this will result in producing less GHG and less air pollution, at the same time more local jobs are created so this supports both the environment and local people that helps to improve sustainability. Simultaneously it is in line with the regenerative agriculture principles that insist on creating more employment opportunities for the people.

Table 7 Summarized information of value creation

Farm	Key activities	Key resources	Key partners
A	Producing meat and grass	30 cows and 20 sheep, growing grass, land	Local people, Landowner, Tractor owner, butcher
B	Producing meat, grass	30 sheep, a few pigs and chicken, tractor, summer pasture, forest, and grazing ground	Local people, local and international regenerative farmers.
C	Meat and grass production	A flock of 500 sheep	Local people, local hotels, and restaurants
D	Meat production, grass, horses	150 cows, twenty horses, farm, tractor	Contractor for harvesting grass, slaughterhouses

5.4.2 value capture analysis

Value capture in business models is about revenue stream and cost structure (Osterwalder and Pigneur 2005).

Revenue Stream:

As it was noted in the key resources and activities these farms most important activity is producing meat, thus it makes sense that the primary revenue stream would be selling meat. EU subsidies is another income stream for these farms, educating people and other farmers and other people visiting the farms are another source of money for these farmers. Selling young horses, fur, and wool are some other ways that bring money to some of these farms but they are not significant. The important note about these farms' revenues is that the EU subsidies are an important part of the income, that if they are excluded the farms would be in trouble. Even one of the farmers noted that without the EU subsidies they would not be able to cover the costs. For the others it is somehow the same, maybe they can survive without the EU subsidies, but they will need to raise the prices significantly and they are not interested in it. From sustainability perspective the farms' revenue streams helps to improve sustainability as one of the ways that they bring money into their farms is teaching and educating people and in the first place it is good for

the society because they are enhancing the knowledge in the society. But, at the same time it is good for the environment as well as they are teaching and educating regenerative farming practices.

Cost structure:

The most significant that they hold in common is winter fodder. Other major costs are family's salary, lease, loan and profit. The important note that they talked about is that more than enhancing income they focus on decreasing the costs and this happens by trying to keep implementing the inputs from out of the farm to the minimum. Using this strategy, they keep their costs lower; thus it improves the profit aspect of the sustainability, at the same time they are using less resources for producing meat and it is good for the environment.

Table 8 Summarized information of revenue stream and cost structure

Farm	Revenue stream	Cost structure
A	EU subsidies, selling meat, guiding, and teaching other people, visitors	Producing winter fodder
B	Meat production (beef, lamb, pork), EU subsidies, educating others and teaching courses, selling wool and fur.	Loan and interest payments, winter fodder, tractor
C	Selling meat, EU subsidies, teaching, selling skin	Salary of the family, winter fodder, rent of tractor, fencing, shelter
D	EU subsidies, selling meat, teaching and educating other people, selling some young horses and taking care of other horses.	Family salary, land lease, winter fodder, diesel, electricity

5.4.3 Value delivery and proposition analysis

As it is noted in the second chapter of the study, value delivery and proposition are about customer segments, customer relationships, and channels (Osterwalder and Pigneur 2005; Bocken et al. 2014). In these cases, all customers are local customers, some of them are restaurants and hotels, the rest are local individuals. The common thing among them is that all the customers are happy that they are using high quality

meat from the animals that have lived a good and happy life and have been useful for the land because as the farmers note having them on the land improves soil's health. The customers enjoy seeing these animals every day when they are commuting, and they are not happy when during some seasons they can see them less on the landscape and they miss them. Even the local restaurants and hotels that use the meat try to talk with the customers about the meat that it comes from the same animals that you see outside, and they note that the customers are happy about it. This means that value delivery and value proposition in these farms are in harmony with the sustainability concept and regenerative farming principles, since the people are happy that they are having healthy and high-quality food, and enjoying the landscape while the animals are grazing outside. At the same time during this process the animals are improving the upper soil layer's quality which is an environmental achievement and is one of the principles in regenerative agriculture. There is an important point that should be noted here and it is that according to these findings we can see that social and environmental values that are appreciated by both customers and farmers can be transformed into economic values as customers are ready to pay more money for having high quality meat while they know the livestock are doing good for the environment.

5.5 Changes

Farm A:

Over the course of their thirteen-year tenure on the farm, they have made certain adjustments to enhance the results. One of these changes involves separating the mother cows from the rest of the group and allowing them to stay with their calves for approximately ten months. Additionally, they have opted to utilize the forest as a natural barrier against the wind instead of constructing buildings, which was the previous practice. This shift was facilitated by enrolling in a program where they are responsible for the associated costs.

Farm B:

The modifications implemented on their farm over the span of twenty years align with their belief in placing trust in nature. They made the decision to cease plowing and tilling the soil, a common practice in conventional farming. While acknowledging that this may initially lead to a decrease in production for the first couple of years, they argue that the long-term benefits outweigh this temporary setback. They contend that plowing the soil results in the destruction of numerous microorganisms, which can be detrimental to the farm's overall health in the future.

Another significant change they made was transitioning from monoculture farming to multicultural farming, perceiving other plants and animals as allies rather than adversaries. The farmers emphasize that viewing other species as

competitors would necessitate engaging in a constant struggle against nature, which ultimately yields unfavorable outcomes. Additionally, they innovated their approach to fencing by abandoning conventional poles that contain toxic chemicals and are prone to damage during winter. Instead, they utilize natural trees as fencing, asserting that even the tree's injury in this process strengthens its immune system. This technique brings multiple benefits, including cost savings by eliminating the need for poles, ensuring that harmful substances are kept away from their products, and enhancing the overall aesthetics of the landscape.

Farm C:

The most significant modifications they implemented on the farm involved adjusting the timing of lambing. In the past, the lambs were born in April when the animals were kept indoors. This arrangement posed numerous challenges due to limited shelter space and the sheep consuming winter fodder before lambing, resulting in complications that required intervention during the birthing process. However, they experienced a marked improvement when they shifted the lambing period to June, coinciding with the time when the animals were grazing outside. This change brought about automatic resolution to many of the complications they previously faced.

Analysis:

If we look at the changes that are mentioned above, we can see that they all originate from the sustainable mindset that was discussed in the previous section. For instance, using trees instead of toxic poles which harm the environment, or changing the time of lambing that improves animals' welfare. These changes that are made during the time are in line with improving the sustainability and this is another proof for that this is their sustainable mindset that is driving and moving them in this way.

6. Conclusion

This chapter provides an overall summary of the findings and insights gained by the researcher in this study and. Additionally, it highlights the limitations of the study and offers suggestions for future research.

6.1 Conclusion

A sustainable mindset and a firm belief in holistic management principles serve as the driving force and motivation behind these sustainable actions. It is this shared belief that unites them and fuels their commitment. This fundamental perspective sets them apart from others who prioritize profit above all else. Their deep-rooted conviction and respect for the environment and society distinguish them from those who lack such concerns. By embracing a broader perspective that encompasses the well-being of both the environment and society, they demonstrate a genuine commitment to sustainability that goes beyond mere profit-driven motives. An additional aspect worth noting is that all the regenerative farmers involved in this study possess a certain level of education, which may have influenced their decision-making process. However, it is important to highlight that this study does not specifically focus on this aspect, and further in-depth investigation is necessary to arrive at a robust and reliable conclusion.

6.2 Brief Answers to first research question

Research Question 1) How do rural entrepreneurs develop sustainable business models?

Business models are developed based on the values of the business owners. As was discussed in the previous part. In this case values are not limited to economic aspects and the business owners are highly concerned about the society they live in and preserving and healing the environment. Thus, we can see that they are not focused on profit, as one of the three aspects of sustainability, and they pay attention to the other two aspects that are people, and planet. This sustainable mindset which

originates in their values leads them toward developing sustainable business models.

RQ2) How can we understand regenerative farmers' business models?

Understanding regenerative farmers starts with accepting the fact that the definition of value is different in this context. As it was shown in figure 5, we should add preserving natural resources, and inspiring others to live more sustainably to their value creation. Creating enjoyable landscape and producing high quality and healthy food for the people, to their value delivery. Enhancing biodiversity, healing soil and land, helping the society to be healthier to their value capture.

6.3 Further research

In this study the researcher faced the time limitation of twenty weeks for the master's thesis. Thus, it was not possible to have more interviews. Conducting interviews and analysing cases from outside of the Sweden and approaching cases that are not focused on the livestock can improve the diversity of the sample and help improving the business models of regenerative farmers. Furthermore, rural entrepreneurs are not limited to regenerative farmers. Researchers can focus on rural entrepreneurs that are in other businesses.

References

- Amit, R. and Zott, C., 2012. Creating value through business model innovation. MIT Sloan management review.
- Bell, E. and Bryman, A., 2007. The ethics of management research: an exploratory content analysis. *British journal of management*, 18(1), pp.63-77.
- Bryman, A. & Bell, E. (2015). *Business research methods*. 4. ed. Oxford: Oxford Univ. Press.
- Bocken, N.M.P., Short, S.W., Rana, P. & Evans, S. (2013). A value-mapping tool for sustainable business modelling. *Corporate governance*, vol. 13 (5), 482-497.
- Bocken, N.M., Short, S.W., Rana, P. and Evans, S., 2014. A literature and practice review to develop sustainable business model archetypes. *Journal of cleaner production*, 65, pp.42-56.
- Bosma, Niels, Zoltan J. Acs, Erkko Autio, Alicia Coduras, and Jonathan Levie. "Global entrepreneurship monitor." *Executive report 125* (2008).
- Bradley, E.H., Curry, L.A. and Devers, K.J., 2007. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health services research*, 42(4), pp.1758-1772.
- Campbell, B.M., Beare, D.J., Bennett, E.M., Hall-Spencer, J.M., Ingram, J.S., Jaramillo, F., Ortiz, R., Ramankutty, N., Sayer, J.A. and Shindell, D., 2017. Agriculture production as a major driver of the Earth system exceeding planetary boundaries. *Ecology and society*, 22(4).
- Carree, M., Van Stel, A., Thurik, R. and Wennekers, S., 2007. The relationship between economic development and business ownership revisited. *Entrepreneurship & regional development*, 19(3), pp.281-291.
- Casadesus-Masanell, R. and Zhu, F., 2013. Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic management journal*, 34(4), pp.464-482.
- Chrisman, J.J., Chua, J.H., De Massis, A., Frattini, F. and Wright, M., 2015. The ability and willingness paradox in family firm innovation. *Journal of Product Innovation Management*, 32(3), pp.310-318.

Carayannis, E.G. and Rakhmatullin, R., 2014. The quadruple/quintuple innovation helixes and smart specialisation strategies for sustainable and inclusive growth in Europe and beyond. *Journal of the Knowledge Economy*, 5, pp.212-239.

Creswell, J.W. (2013). *Research design: qualitative, quantitative, and mixed methods approaches*. 4th. Ed DaSilva, C.M. and Trkman, P., 2014. Business model: What it is and what it is not. *Long range planning*, 47(6), pp.379-389.

Creswell, J.W. and Poth, C.N., 2015. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, ter. *Ahmad Lintang Lazuardi, Cet. I*.

De Vaus, D., 2001. Research design in social research. *Research design in social research*, pp.1-296.

Dehghannejad, M. (2021). Value Capturing through Business Model Adaptations to Sustainability, Sveriges lantbruksuniversitet. Department of Economics/ Agricultural Economics and Management, Master's Programme <https://stud.epsilon.slu.se/16495/>

DeTienne, D.R. and Chandler, G.N., 2004. Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical test. *Academy of management learning & education*, 3(3), pp.242-257.

Eisenhardt, K. M. (1989). 'Building Theories from Case Study 'Research'', *Academy of Management Review*, 14: 532–50.

Eisenhardt, K.M., Graebner, M.E. and Sonenshein, S., 2016. Grand challenges and inductive methods: Rigor without rigor mortis. *Academy of management journal*, 59(4), pp.1113-1123.

Eriksson, P. and Kovalainen, A., 2015. *Qualitative methods in business research: A practical guide to social research*. Sage.

Elkington, J., 1994. Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California management review*, 36(2), pp.90-100.

Elkington, J. (1999). *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*. Oxford: Capstone.

Fletcher, A. (2017). Applying critical realism in qualitative research: Methodology meets method, *International journal of social research methodology*, vol. 20 (2), 181-194.

Foley, J.A., DeFries, R., Asner, G.P., Barford, C., Bonan, G., Carpenter, S.R., Chapin, F.S., Coe, M.T., Daily, G.C., Gibbs, H.K. and Helkowski, J.H., 2005. Global consequences of land use. *science*, 309(5734), pp.570-574.

Foss, N.J. and Saebi, T., 2017. Fifteen years of research on business model innovation: How far have we come, and where should we go?. *Journal of management*, 43(1), pp.200-227.

Gaddefors, J. and Anderson, A.R., 2017. Entrepreneursheep and context: when entrepreneurship is greater than entrepreneurs. *International journal of entrepreneurial behavior & research*.

Gambardella, A. and McGahan, A.M., 2010. Business-model innovation: General purpose technologies and their implications for industry structure. *Long range planning*, 43(2-3), pp.262-271.

George, G. and Bock, A.J., 2011. The business model in practice and its implications for entrepreneurship research. *Entrepreneurship theory and practice*, 35(1), pp.83-111.

Giesen, E., Berman, S. J., Bell, R., & Blitz, A. 2007. Three ways to successfully innovate your business model. *Strategy and Leadership*, 35: 27-33.

Gill, P., Stewart, K., Treasure, E. and Chadwick, B., 2008. Methods of data collection in qualitative research: interviews and focus groups. *British dental journal*, 204(6), pp.291-295.

Giller, K.E., Hijbeek, R., Andersson, J.A. and Sumberg, J., 2021. Regenerative agriculture: an agronomic perspective. *Outlook on agriculture*, 50(1), pp.13-25.

Geissdoerfer, M., Savaget, P., Bocken, N.M. and Hultink, E.J., 2017. The Circular Economy—A new sustainability paradigm?. *Journal of cleaner production*, 143, pp.757-768.

George, G. and Bock, A.J., 2011. The business model in practice and its implications for entrepreneurship research. *Entrepreneurship theory and practice*, 35(1), pp.83-111.

Glaser, B.G., Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. London, UK: Weidenfeld & Nicholson.

Glaeser, E.L. and Kerr, W.R., 2009. Local industrial conditions and entrepreneurship: how much of the spatial distribution can we explain?. *Journal of Economics & Management Strategy*, 18(3), pp.623-663.

Guba, E.G. & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. In: Denzin, N.K. & Lincoln, Y.S. (eds) *Handbook of qualitative research*. Thousand Oaks, California, US: SAGE Publications, 105-117.

Guth, M., Stępień, S., Smędzik-Ambroży, K. and Matuszczak, A., 2022. Is small beautiful? Technical efficiency and environmental sustainability of small-scale family farms under the conditions of agricultural policy support. *Journal of Rural Studies*, 89, pp.235-247

Hathaway, M.D. (2016) Agroecology and permaculture: addressing key ecological problems by rethinking and redesigning agricultural systems. *J Environ Stud Sci* 6, 239–250. <https://doi.org/10.1007/s13412-015-0254-8>

Heinberg, R. and Lerch, D., 2010. What is sustainability. *The post carbon reader*, 11, p.19.

Kassar G. (2020). Business Model Innovation Associated with Vertical Farming in Sweden. Sveriges lantbruksuniversitet. Department of Economics/ Agricultural Economics and Management, Master's Programme <https://stud.epsilon.slu.se/16088/>

Khanagha, S., Volberda, H. and Oshri, I., 2014. Business model renewal and ambidexterity: structural alteration and strategy formation process during transition to a Cloud business model. *R&D Management*, 44(3), pp.322-340

Kuhlman, T. and Farrington, J., 2010. What is sustainability?. *Sustainability*, 2(11), pp.3436-3448.

LaCanne, C.E. and Lundgren, J.G., 2018. Regenerative agriculture: merging farming and natural resource conservation profitably. *PeerJ*, 6, p.e4428.

Lüdeke-Freund, F., 2010. Towards a conceptual framework of business models for sustainability. In: ERSCP-EMU Conference, Delft, The Netherlands, pp. 1e28.

Markides, C. 2006. Disruptive innovation: In need of better theory. *Journal of Product Innovation Management*, 23: 19-25.

Markides, C. (1997). Strategic innovation. *Sloan management review*, (38)

Marsh, D. and Furlong, P., 2002. A skin not a sweater: Ontology and epistemology in political science. *Theory and methods in political science*, 2(1), pp.17-41.

Miles, M.B. & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook*. 3rd ed., Thousand Oaks, California, US: SAGE Publications

Mitchell, D. and Coles, C., 2003. The ultimate competitive advantage of continuing business model innovation. *Journal of Business Strategy*, 24(5), pp.15-21.

Mitchell, D.W. and Bruckner Coles, C., 2004. Business model innovation breakthrough moves. *Journal of business strategy*, 25(1), pp.16-26.

Newton, P., Civita, N., Frankel-Goldwater, L., Bartel, K. and Johns, C., 2020. What is regenerative agriculture? A review of scholar and practitioner definitions based on processes and outcomes. *Frontiers in Sustainable Food Systems*, p.194.

Nosratabadi, S., Mosavi, A., Shamshirband, S., Zavadskas, E.K., Rakotonirainy, A. and Chau, K.W., 2019. Sustainable business models: A review. *Sustainability*, 11(6), p.1663.

Osterwalder, A., Pigneur, Y. & Tucci, C.L. (2005). Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of the Association for Information Systems*, vol. 16. DOI: <https://doi.org/10.17705/1CAIS.01601>

Osterwalder, A. and Pigneur, Y., 2010. *Business model generation: a handbook for visionaries, game changers, and challengers* (Vol. 1). John Wiley & Sons.

O'sullivan, C.A., Bonnett, G.D., McIntyre, C.L., Hochman, Z. and Wasson, A.P., 2019. Strategies to improve the productivity, product diversity and profitability of urban agriculture. *Agricultural Systems*, 174, pp.133-144.

- Poore, J. and Nemecek, T., 2018. Reducing ' food's environmental impacts through producers and consumers. *Science*, 360(6392), pp.987-992.
- Porter, T. and Derry, R., 2012. Sustainability and business in a complex world. *Business and Society Review*, 117(1), pp.33-53.
- Ricciardi, V., Mehrabi, Z., Wittman, H., James, D. and Ramankutty, N., 2021. Higher yields and more biodiversity on smaller farms. *Nature Sustainability*, 4(7), pp.651-657.
- Robinson, O.C., 2014. Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative research in psychology*, 11(1), pp.25-41.
- Rodale R (1983) Breaking new ground: the search for a sustainable agriculture. *The Futurist* 1: 15–20.
- Rhodes, C.J., 2017. The imperative for regenerative agriculture. *Science progress*, 100(1), pp.80-129.
- Stathopoulou, S., Psaltopoulos, D. and Skuras, D., 2004. Rural entrepreneurship in Europe: a research framework and agenda. *International Journal of Entrepreneurial Behavior & Research*, 10(6), pp.404-425
- Sarasvathy, S.D. and Venkataraman, S., 2011. Entrepreneurship as method: Open questions for an entrepreneurial future. *Entrepreneurship theory and practice*, 35(1), pp.113-135
- Shane, S. and Venkataraman, S., 2000. The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), pp.217-226
- Shepherd, D., 2015. Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing*, 30(4), pp.489-507.
- Schreefel L, Schulte RPO, de Boer IJM, et al. (2020) Regenerative agriculture – the soil is the base. *Global Food Security* 26: 100404.
- Sim, J., 1998. Collecting and analysing qualitative data: issues raised by the focus group. *Journal of advanced nursing*, 28(2), pp.345-352.
- Tauger, M.B., 2010. *Agriculture in world history*. Routledge.
- Teece, D. J. 2010. Business models, business strategy and innovation. *Long Range Planning*, 43: 172-194
- Timmers, P., 1998. Business models for electronic markets. *Electronic markets*, 8(2), pp.3-8.
- Thomas, D.R., 2003. A general inductive approach for qualitative data analysis.
- UN, 2019, World Population Prospects 2019, <https://population.un.org/wpp/DataQuery/>, [2022-05-30]
- Van der Ploeg, J.D., Barjolle, D., Bruil, J., Brunori, G., Madureira, L.M.C., Dessein, J., Drag, Z., Fink-Kessler, A., Gasselin, P., de Molina, M.G. and Gorlach,

K., 2019. The economic potential of agroecology: Empirical evidence from Europe. *Journal of Rural Studies*, 71, pp.46-61

White, C., 2020. Why regenerative agriculture?. *American Journal of Economics and Sociology*, 79(3), pp.799-812.

Wiersum, K.F., 1995. 200 years of sustainability in forestry: lessons from history. *Environmental management*, 19, pp.321-329.

Woiceshyn, J. and Daellenbach, U., 2018. Evaluating inductive vs deductive research in management studies: Implications for authors, editors, and reviewers. *Qualitative Research in Organizations and Management: An International Journal*, 13(2), pp.183-195.

Yin, R. K. (1984). *Case Study Research: Design and Methods*. Beverly Hills, CA: Sage

Yin, R.K. (1994). *Case study research*. 2nd ed., Thousand Oaks, California, US: SAGE Publications.

Yin, R.K. (2013). Validity and generalisation in future case study evaluations. *Evaluation*, vol. 19 (3), 321-332.

Zott, C., Amit, R. and Massa, L., 2011. The business model: recent developments and future research. *Journal of management*, 37(4), pp.1019-1042

Popular science summary

This thesis focuses on the development of sustainable business models among rural entrepreneurs, particularly small-scale regenerative farmers. It explores the rising concerns about the negative effects of conventional farming on the environment and society, and how regenerative agriculture offers a potential solution to these issues. By reviewing relevant literature on business models, sustainability, rural entrepreneurship, and regenerative agriculture, the study aims to understand how rural entrepreneurs practice sustainable farming and examines the business models of regenerative farmers. Qualitative research methods, including in-depth interviews and case studies, are used to collect comprehensive data from regenerative farmers. The findings emphasize that regenerative farmers prioritize social and environmental values in addition to economic considerations. These insights contribute to the field of sustainable business models and shed light on the significance of sustainable agricultural practices in promoting environmental, social, and economic sustainability.

The research outcomes hold implications for policymakers, agricultural practitioners, and entrepreneurs seeking more sustainable farming methods. The study underscores the importance of integrating sustainable business models to support regenerative agriculture as a viable and environmentally conscious approach to food production.

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Finally, I would like to extend my appreciation to everyone who has provided support to me, including my family and close friends.

Appendix

Excel file used for Coding of farm A:

Category equipment skills safety equipment staff	Introduction starting 2010 10 hours they are aimed refreshment 3 times	Micro business 2016-2018 small farm	Phase 1	Business plan 2016-2018 business plan
equipment skills safety equipment staff	Introduction starting 2010 10 hours they are aimed refreshment 3 times	Micro business 2016-2018 small farm	Sustainability livestock made goes better but struggling the goal is to be making more money possible (prevention high quality, medicine, care and for more) exchanging knowledge with others not because they are in the same business, they want to help for weeks to 5 or 6 months everything is connected are part of the ecosystem food, water cows in forests and pastures responsible for plants and animals birds back in the area big picture everything is connected no need lots of resources for producing high quality meat but more specialised meat	Business plan 2016-2018 business plan
			Customer Segments Key Partners Customer Relationship Risk Opportunity the goal is to be making more money possible (prevention high quality, medicine, care and for more) exchanging knowledge with others not because they are in the same business, they want to help for weeks to 5 or 6 months everything is connected are part of the ecosystem food, water cows in forests and pastures responsible for plants and animals birds back in the area big picture everything is connected no need lots of resources for producing high quality meat but more specialised meat	
			Changes which need to be made to the system own farming which are not covered no need lots of resources for producing high quality meat but more specialised meat	Key Activities Value Proposition Channels Marketing producing meat selling high quality but struggling
			Network local community food and animal products and services	Market the goal is to be making more money possible (prevention high quality, medicine, care and for more) exchanging knowledge with others not because they are in the same business, they want to help for weeks to 5 or 6 months everything is connected are part of the ecosystem food, water cows in forests and pastures responsible for plants and animals birds back in the area big picture everything is connected no need lots of resources for producing high quality meat but more specialised meat

Excel file used for Coding of farm B:

The screenshot displays two sections of an Excel spreadsheet. The top section, labeled 'Phase 1', contains a grid of cells with various colored backgrounds (purple, green, yellow, orange) and text. The bottom section, labeled 'Phase 2', also features a grid with colored cells and text, including a prominent yellow cell on the right side.

Excel file used for Coding of farm C:

The screenshot shows a detailed Excel spreadsheet for Farm C coding. It is divided into two main sections: 'Phase 1' at the top and 'Phase 2' below it. The 'Phase 1' section is filled with a dense grid of cells, many with colored backgrounds (yellow, orange, purple, green) and containing text. The 'Phase 2' section is also a grid of cells with various colors and text. A large green cell is visible on the right side of the Phase 2 section. The overall layout is complex and organized into multiple columns and rows.

Excel file used for Coding of farm D:

Phase 1									
equipment	introduction	key issues	sustainability	cost structure					
<p>equipment</p> <p>invested in equipment, capitalised, value shown in P&L as capitalised asset</p>	<p>introduction</p> <p>being built and used in the farm</p> <p>being brought into the farm, used in the farm, and then the value is split</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>key issues</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>sustainability</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>cost structure</p> <p>being brought into the farm, used in the farm, and then the value is split</p>					
Phase 2									
Business Model	Customer Segments	Key Partners	Value Proposition	Risk	Opportunity	Channel	Key Activities	Value Proposition	Primary Cost
<p>Business Model</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Customer Segments</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Key Partners</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Value Proposition</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Risk</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Opportunity</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Channel</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Key Activities</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Value Proposition</p> <p>being brought into the farm, used in the farm, and then the value is split</p>	<p>Primary Cost</p> <p>being brought into the farm, used in the farm, and then the value is split</p>
<p>Medium</p> <p>being brought into the farm, used in the farm, and then the value is split</p>									

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