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### **D3.2 Report on a qualitative analysis in 11 case-studies for understanding the process of farm demographic change across EU-farming systems and its influencing factors**

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## INDEX

EXECUTIVE SUMMARY.....	6
1 INTRODUCTION .....	8
2 METHOD AND MATERIAL .....	9
2.1 Farm demographic interviews.....	9
2.1.1 Introduction and general approach.....	9
2.1.2 Selection of mini-cases and respondents.....	10
2.1.3 Interview technique.....	14
2.2 Qualitative analysis.....	15
2.2.1 Case-study level analysis .....	15
2.2.2 Integrating case-study findings.....	16
3 CASE-STUDY RESULTS: FARM DEMOGRAPHICS AND ASSOCIATED IMPACT FACTORS .....	17
3.1 Dairy farming in Flanders, Belgium .....	17
3.1.1 In short: case-study context and main case-study findings .....	17
3.1.2 Detailed report on case-study results .....	18
3.2 Large-scale corporate arable farming in North-East and North-Central Bulgaria .....	26
3.2.1 Brief description of case-study context.....	26
3.2.2 Detailed report on case-study results .....	28
3.3 Extensive beef cattle systems in Bourbonnais, France .....	32
3.3.1 Brief description of case-study context.....	32
3.3.2 Detailed report on case-study results .....	34
3.4 Large scale corporate crop farms in Altmark, Germany .....	39
3.4.1 Brief description of case-study context.....	39
3.4.2 Detailed report on case-study results .....	40
3.5 Hazelnut farming in Viterbo, Italy .....	45
3.5.1 Brief description of case-study context.....	45
3.5.2 Detailed report on case-study results .....	46
3.6 Arable family farming in the North-East of The Netherlands .....	61
3.6.1 Brief description of case-study context.....	61
3.6.2 Detailed report on case-study results .....	62

3.7	Family fruit and vegetable farms in Mazovian, Poland .....	64
3.7.1	Brief description of case-study context.....	64
3.7.2	Detailed report on case-study results .....	65
3.8	Small-scale mixed family farms in North-East Romania.....	67
3.8.1	Brief description of case-study context.....	67
3.8.2	Detailed report on case-study results .....	69
3.9	Extensive family livestock farms in Sierra de Guadarrama, Spain .....	76
3.9.1	Brief description of case-study context.....	76
3.9.1	Detailed report on case-study results .....	78
3.10	High-value egg and broiler production in Southern Sweden.....	79
3.10.1	Brief description of case-study context.....	79
3.10.1	Report on case-study results.....	80
3.11	Arable farms in East of England, UK .....	90
3.11.1	Brief description of case-study context.....	90
3.11.1	Report on case-study results.....	91
4	CROSS-CASE COMPARISON AND INTEGRATIVE FINDINGS ON FARM DEMOGRAPHIC CHANGE PROCESSES .....	96
4.1	Introduction.....	96
4.2	Role of personal factors in entry, exit, non-entry and non-exit decisions .....	97
4.2.1	Personality.....	98
4.2.2	Farmer's ability to cope with physical and mental implications of farm work.....	100
4.3	Factors at farm level that influence farm demographics .....	102
4.3.1	Farm-family characteristics that affect the formation of the successor's identity	102
4.3.2	Farm-family dynamics affecting the smoothness of the transfer/succession process	105
4.3.3	Production factor farm-level labour .....	108
4.3.4	Farm characteristics that influence farm demographics in general .....	112
4.4	Factors at farming system level that influence farm demographics .....	115
4.4.1	Production factor labour .....	115
4.4.2	Production factor capital.....	117
4.4.3	Production factor land.....	118

4.4.4	Production factor management.....	118
4.4.5	Horizontal cooperation .....	119
4.4.6	Vertical cooperation .....	121
4.4.7	Complexity and frequent adjustments of legal framework .....	123
4.5	Factors at society level that influence farm demographics .....	127
4.5.1	Position of farming in a shifting societal context.....	128
4.5.2	Embeddedness of farm in local community and peri-urban life.....	128
4.5.3	Changing climate and extreme weather events .....	130
5	DISCUSSION AND IMPLICATIONS .....	131
5.1	Intergenerational renewal: a process affected by an interplay of factors at many levels 131	
5.2	Intergenerational renewal: a process conceptualized in three stages.....	133
5.3	Farming as a lifestyle choice .....	134
5.4	Family farming in Europe: a normative model that will sustain? .....	136
5.5	Implications .....	141
6	CONCLUSION.....	143
7	REFERENCES .....	144
8	ANNEXES.....	147
8.1	Annex A: Interview protocol and outline .....	147
8.1.1	Problem definition and research questions .....	147
8.1.2	General description of the interviews .....	147
8.1.3	Conducting the interviews .....	148
8.2	Annex B: case-study coding lists.....	155
8.2.1	Dairy farming in Flanders, Belgium.....	155
8.2.2	Large-scale corporate arable farming in North-East and North-Central Bulgaria. 165	
8.2.3	Extensive beef cattle systems in Bourbonnais, France.....	187
8.2.4	Large scale corporate crop farms in Altmark, Germany.....	206
8.2.5	Hazelnut farming in Viterbo, Italy .....	208
8.2.6	Arable family farming in the North-East of The Netherlands.....	215
8.2.7	Family fruit and vegetable farms in Mazovian, Poland.....	218
8.2.8	Small-scale mixed family farms in North-East Romania .....	232

8.2.9	Extensive family livestock farms in Sierra de Guadarrama, Spain .....	238
8.2.10	High-value egg and broiler production in Southern Sweden .....	246
8.2.11	Arable farms in East of England, UK .....	252

## EXECUTIVE SUMMARY

This report documents a study with the aim to create a profound insight into the underlying patterns and causes of the current farm demographic dynamics across Europe. Farm demographic change at the farming system level is the result of individual farm demographic change processes, i.e., entry, exit, non-entry and non-exit decision made by individual farmers. Thus, the unit of analysis of this study is the farm-level. We investigated, in-depth, intergenerational renewal in individual farms. Such deeper understanding can be achieved through qualitative empirical research that focuses on unravelling complex relations between human behaviour/decision-making and observed trends. More specifically, this task aims to identify and assess drivers of farm demographics through in-depth interviews that are performed in all 11 case-studies. These in-depth interviews entailed the identification of drivers that affect the main farm-demographic change processes such as exit, entry, non-exit and non-entry. After the case-study level analysis, a cross-case comparison was made to identify common themes affecting or related to farm demographic change.

Drivers of farm demographics were identified through qualitative in-depth interviews performed in all 11 case-study contexts. The research method was centred around ‘mini-cases’, i.e., farm businesses in a certain stage of farm demographic change. Purposive sampling – through gate-keepers and snowball sampling – was used to achieve a sample of farm businesses in different stages of farm demographic change. Within each mini-case, the goal was to perform multiple in-depth interviews, not just with the farm head, but also with the spouse, successor, child who decided not to succeed, farm worker and/or farm advisor. In total, 157 interviews with 169 respondents involved in 86 different farm businesses across 11 case-studies were performed. This provides a unique dataset to investigate decisions regarding entry, exit and non-entry.

All interviews were transcribed *ab verbatim* and extended summaries were made. Analysis proceeded in 3 iterative steps, whereby a first open coding was performed on the first series of interviews, after which a second series of interviews was performed of which the design was slightly adapted based on the findings of the first series of interviews. Then, a second series of open coding was performed, followed by axial coding, in which different open codes were grouped together and merged into bigger themes. After a third series of interviews, which was again slightly adapted based on previous findings, a last coding step was performed in which relationships between axial codes were drawn and selective codes (big overarching themes, often based on literature, were defined). Nonetheless, due to time and logistic difficulties, not all case-studies followed the exact same iterative approach.

The farm demographic change within a farming system is the result of individual farm-level demographic change processes, i.e., the result of entry, non-entry, exit and non-exit decisions. This study, based on a qualitative approach using in-depth interviews, conceptualized farm demographic change processes as consisting of three conceptual stages. These stages are

conceptual rather than distinct chronological stages in time. The first stage is the formation of a successor's identity, a crucial stage since if its outcome is non-succession, measures intended to ease the transfer process are obsolete. The formation of a successor's identity is the end result of the combination of personal interests i.e., the self-identity as a farmer on the one hand versus the perceived ability to cope with the often hard life as a farmer and its challenges. The second stage is the farm transfer/succession process itself, a process which can become increasingly lengthy. Also in this stage, the combination of enablers and disablers can lead to either non-entry or entry. The third stage we defined is the farm development stage, a stage in which the farm is being developed and during which, after some time, the formation of a successor's identity stage can start to develop.

We have identified 4 levels of factors influencing intergeneration renewal and farm demographic change: (1) personal/individual factors; (2) farm (family) level factors; (3) farming system level factors; and (4) regional/societal factors. The first two relate to factors for which we find as much within-case study differences compared to between case-study differences, whereas the latter two are more equal within case studies.

In the first stage, a combination of personality and the ability to cope with challenges associated with farming determines whether a successor identity is being formed. In the second stage, interpersonal skills and relationships are important, next to both farm-level and sector- and region-level characteristics related to the factors of production labour, land, capital and management. Some specific policy measures, both regional/national and European affect the mobility of land, labour and capital. Examples include permit policies, land-based payments, land lease policies and fiscal regulations. In the third stage, many factors are mentioned as having an influence on transfer/succession decisions. However, the way this influence is described suggests that this influence is rather indirect, by shaping the conditions in which farmers operate and thus affecting the attractiveness of farming as occupational choice. Further, the findings heavily suggest that farming as occupational choice quickly become a lifestyle choice, and that the dominant family farm model can be both a blessing and a curse for intergenerational renewal.

Our study implies that farm demographic change is often a very person- and farm-specific process and any attempt willing to influence it needs to take this into account. Further, typical policy instruments are targeted at the farm transfer/succession process stage, but if before that, the successor's identity has not been formed, these instruments are likely to resort only limited influence. Last, a territorially based policy should be implemented, both at the level of policy goals, to determine the desired level and direction of intergenerational renewal and structural change (which we advocate should be based on the delivery of system function) and the level of the policy instruments, as our findings suggest that, contrary to common perception, regional and national governments hold, through their ability to design very locally adapted land lease policies, fiscal policies, land mobility policies and to support farm-specific advice and guidance on the intergenerational renewal of farms.





## 1 INTRODUCTION

The SURE-Farm project aims to better understand and to improve the resilience of European farming systems by (1) assessing the past and current resilience of various farming systems in Europe; (2) investigating the factors that are impacting farming system's resilience; and (3) formulating guidelines for and roadmaps to a resilience-enabling environment. Farming systems' resilience is defined as the ability to ensure the provision of the system functions in the face of increasingly complex and accumulating economic, social, environmental and institutional shocks and stresses, through capacities of robustness, adaptability and transformability (Meuwissen et al., 2018). The adaptive capacity cycles introduced by Holling and Gunderson (2002) in the context of socio-environmental systems are used as a conceptual metaphor to understand change in farming systems. Adaptive cycles consist of four stages: growth, equilibrium, collapse and reorientation. Four main adaptive cycle processes; i.e. agricultural practices, governance, risk management and farm demographics; are regarded in order to structure the comprehensive resilience-analysis that SURE-Farm comprises.

The challenges and changing circumstances that farming systems are confronted with, can be very context-dependent regarding the characteristics of the farming system that is contemplated. To account for this diversity, SURE-Farm poses different case-studies at the heart of the research activities. Each out of the 11 case-studies comprises a unique farming system that is well-defined by its specific features such as the agricultural sector, the region, together with its intrinsic characteristics regarding the four adaptive cycles and links with the resilience concepts.

This deliverable contributes to work package 3 of the project that aims to better understand farm demographics, its interdependence with farm structure, and the identification and impact assessment of enabling environment options to improve the resilience of farm demographics. Assuming that farm demographics are crucial in determining the overall resilience of a farming system, a better understanding of the dynamics underlying farm demographics, and their trends and drivers, is needed to ultimately identify opportunities for increasing the resilience of farm demographics and entry into the sector. In this regard, task 3.1 focusses on learning more about farm demographics in two ways:

1. Quantitatively describe current farm demographics and report on ongoing trends based on an analysis of structural FADN data. The resulting deliverable 3.1 can be consulted (open access) via the SURE-Farm website.
2. Gain in-depth, qualitative insight in farm demographic processes by interviewing farmers and other relevant stakeholders; the content of this document.

The unit of interest in SUREFARM is the farming system level. The farm demographic change in a farming systems refers to changes in the numbers of farms, farm owners, managers and workers, and in changes in the organizational mode of farms. All that, at farming system level, is the result



of farm-level decisions on entry, non-entry, exit and non-exit. Hence in this study, the farm level is taken as the unit of analysis and the overall aim of this study was to better understand the process of farm demographic change i.e., to identify factors that enable or disable entry, exit, non-entry and non-exit.

This study is performed without any prior judgment on the desirable level of intergenerational renewal, farm transfer and succession. Whereas we acknowledge that a critical minimum level of intergenerational renewal is necessary to prevent collapse of a farming system, we do not take the position that every farm should be transferred to a new generation. Many reports and papers on this topic take the – mostly implicit – assumption that there is not enough succession and that there is ‘young farmer problem’, simply defined as the number of young people involved in farming as being too low. Likewise, succession – more particular ‘not having enough succession’ is mentioned as one of the main challenges in several SUREFARM case-studies (Bijttebier et al., 2018). There is of course evidence in favour of increasing the number of young people involved in farming, such as the fact that they bring in new knowledge, that they are more likely to manage sustainable, modern and more profitable farms, and the mere fact that generational renewal is needed to prevent a farming system from collapsing. However, the ideal ratio of young to old farmers has never been explicitly defined, presumable because there are no convincing arguments for a ‘good’ level of intergenerational renewal. Zagata and Sutherland (2015) showed that there is not lack of young farmers in Germany, France, Switzerland, Finland, Austria, France, the Czech Republic and Poland, at least not at the national level. Matthews (2018) also finds that the greying of the farming population is not particularly worsening in recent years, and reflects a social phenomenon of an ageing demographic situation in Europe, young people staying longer in education and old people working longer due to improved health and longevity.

Chapter 2 explains the method and material, in chapter 3, the case-study level findings of all 11 case studies are presented. In chapter 4, we present the integrative findings of the cross-case comparison of the findings in all case-studies. These findings are further discussed and implications of them are provided in chapter 5, while chapter 6 briefly concludes.

## **2 METHOD AND MATERIAL**

### **2.1 Farm demographic interviews**

#### **2.1.1 Introduction and general approach**

Demographic interviews were performed in the 11 SURE-Farm case-studies to create a deeper understanding of how context impacts how farm demographic decisions are made, and what are major factors of influence shaping farm demographics that occur throughout Europe. We define farm demographics along two dimensions: first, from a human resource perspective, it represents the structure of the agricultural labour force considering characteristics like age, qualification, gender, origin. Second, from an institutional perspective, it represents the structure of the



population of farms regarding legal forms, ownership structure and organisation. The human resource dimension was captured interviewing different farm stakeholders<sup>1</sup>: a research method that is focussed on comprehending an individuals' reality by listening to his/her reasoning, opinions, decisive measures, etc. Additionally, the research design allowed for interpretation of the institutional dimension: the individual interviews were clustered around mini-cases (i.e. farm businesses); as will be elucidated on in the next section. This way, the results could be analysed within the context of a mini-case, as well as making comparisons between mini-cases.

The SURE-Farm case-study approach allows for the collection of comprehensive demographic data that were, in the first place, analysed within the context of the case-study sector and region specific features. This first case-study level analysis was performed by the different case-study partners. In a second step, the country-level results were compared by the task lead as explained in 3.2.2.

Concerning the first case-study level analysis, both pragmatic and analysis guideline protocols were disseminated across the case-study partners by the task lead in order to foster a uniform implementation of the research objectives. Additionally, a workshop for all researchers involved was organised by the task lead before starting the data collection; covering (1) the elucidation of the whole research process that was described in the protocols and (2) an interactive session on interviewing skills providing tips and tricks to perform the interviewing technique in practice. Data collection and data analysis were not two processes separated in time, but two scientific research activities that were actively influencing and improving each other. This iterative approach is explained in section 3.2.1. After data collection was finished in most case-studies, a second interactive session was held during the third SURE-Farm consortium meeting - focussing on the implementation of the different analysis steps. Furthermore, frequent follow-up skype meetings allowed for a detailed feedback and follow-up process, encouraging a thoughtful and consistent implementation of the research throughout all case-studies.

### 2.1.2 Selection of mini-cases and respondents

To attain in-depth information that leads to a deep understanding of factors that drive farm demographics, a number of mini-cases – each comprising an in-depth investigation of a particular farm business – were performed within each case-study region. Each mini-case presents a different situation of farm demographic change; e.g., shortly after exit, shortly before exit, shortly before farm transfer/succession, etc. Within each mini-case, several interviews were conducted, involving different respondents who play an important role in the specific demographic situation being encountered. The number of respondents per mini-case depends on the specific demographic situation that is examined. The goal was to gather all opinions of importance for the mini-case, thereby ultimately creating a sample that embraces the diverse stakeholder

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<sup>1</sup> The farm system refers to all stakeholders involved in the farm demographic process.

involvement. A typical example of such a mini-case can be: a family farm close to succession; wherein respondent 1 is the old farmer and successee, respondent 2 the spouse, and respondent 3 the son of the other two respondents and the future successor. An overview of respondent types that were covered in the research is given in Table 1. The share of each type in a case-study sample depends on the most important/most occurring farm demographic situations in a particular case-study context. Note that some respondents can belong to more than one category.

Mini-cases and their associated respondents were selected by purposive sampling. The idea is not to reach statistical representativeness, rather to cover as much diversity as possible with as little respondents as possible (Denzin & Lincoln, 2000). Farm cases and their respondents were not randomly chosen, but specifically selected in order to reach a diverse and complete sample in terms of respondent types and farm situations that are all together a good illustration for the case-study focus. Since farm demographics consist of a wide range of dynamics, a complete sample includes all respondent types relevant to the particular drivers for entry, exit, non-entry, non-exit and farm labour demand. Sample size is in theory determined by the point of saturation, which means data collection continues as long as new information is harvested. However, the final sample sizes result from practical features such as willingness to participate and the size of the case-study population. As showed in Table 2, for most case-studies saturation was achieved by performing more or less 15 interviews that are clustered around approximately six to seven mini-cases.

To find suitable mini-cases, case-study partners used different entry points, such as personal network, specific gatekeepers like bankers, farm consultants, farmers' organisations. As a result, typically respondents first received an invitation to participate to the research by e-mail, after which was mostly followed by a follow-up call by the researchers rather than participants volunteered actively by contacting the researchers. Other respondents were contacted directly by the researcher or the gatekeepers.

*Table 1: Classification and description of respondent types that were interviewed. (Descriptions of successor types are adapted from Chiswell 2014).*

Respondent category	Description
Active young farmer	Farm operator or main worker, age < 45
Active middle-aged farmer	Farm operator or main worker, 45 < age < 65
Active old farmer	Farm operator or main worker, age > 65
Potential/possible successor	Person who could take over the farm in the far or near future but has not started this process
Future/prospective successor	Person who is assigned to take over the farm and is actively acting to reach this purpose
Successor	Person who has (recently) taken over a farm business and became main farm operator
New entrant	Person who recently became main operator of a farm. Differs from 'conventional successor' because a new farm is started rather than take-over of an existing farm
Non-entrant	Person who has the opportunity to enter the sector, but consciously decides not to (e.g. child of a farmer who decides to pursue a non-agricultural career)
Farm employee	A farm worker being employed on a farm (seasonal or permanent)
Consultant (private/public)	Professional advisor who assists in the (financial or operational) management of the farm and/or the organizational and administrative procedures related to take-over, permits, etc. Depending on case-study, this category could comprise bankers, accountancy and tax consultants, accountants, advisors from farmers' organisations, government advisors, agronomists, etc.
Assisting spouse	Partner of the main farm operator, who has a significant impact on the farm demographic situation (can either officially work (part-time) on the farm or provides assistance in the farm related activities but this is not reflected in his/her legal status)
Retired farmer (successor)	Person who is not actively farming anymore (but might still be involved in the farm business in some way)
Farm owner (or shareholder)	The owner of the farm who is not managing the farm (especially relevant for corporate farms)
Farm manager	The manager of the farm

Table 2: Summary of research design for all case-studies

Country	Region	Farming system	Number of mini-cases	Total number of interviews	Total number of respondents	Number of interviews per mini-case <sup>1</sup>	Average number of respondents per mini-case	Number of research cycles <sup>2</sup>
RO	North-East	Small mixed farms	7	17	17	4, 2, 3, 2, 2, 2, 2	2,4	2
GE	Altmark <sup>3</sup>	Large corporate crop farms	6	12	12	3, 1, 2, 2, 2, 2	2	1
IT	Lazio	Perennial crop farms	7	11	11	2, 2, 1, 2, 2, 1, 1	1,6	3
UK	East of England	Arable farms	6	9 <sup>4</sup>	9	2,2,1,1,1,1	1,5	3
ES	Sistema Central	Extensive livestock rearing	7	13	14	1(2), 1(2), 3(4), 2, 2, 2	2	2
SE	South	Eggs and broiler production	6	16	16	2, 2, 3, 3, 3, 3	2,7	3
BG	North-Central & North-East	Large scale crop production	15	19	19	1, 1, 1, 1, 2, 1, 2, 1, 1, 1, 1, 2, 2, 1, 1	1,3	3*
PL	Mazovian	Fruit and vegetables	9	17	17	2, 2, 2, 3, 2, 3, 1, 1, 1	1,9	3*
FR	Bourbonnais	Extensive livestock rearing	9	16	18	2, 1, 2, 2, 2(3), 2, 2, 2(3), 2	2	3
BE	Flanders	Dairy farming	8	18	22	2(3), 3, 1(2), 3, 2(3), (2), 2(3), 3	2,8	3
NL	North-East	Arable farming	6	9	14	1(2), 1, 2(4), 1(3), 2, 2	2,3	2

<sup>1</sup> sometimes, participants preferred not being interviewed separately. The number of interviews then differs from the number of respondents (indicated between brackets) involved in the mini-case. Researchers strived to divide the focus as equally as possible to all respondents during the interview.

<sup>2</sup> timing, location and budget limitations sometimes hindered the anticipated cyclic research process. In these cases, the analysis steps were always performed in a cyclic way (indicated with a \*)

<sup>3</sup> some mini-cases officially fall beyond the region of study

<sup>4</sup> for the UK case-study analysis, information about farm demographics out of 14 Learning Capacity Interviews was incorporated in addition to the 9 demographic interviews



### 2.1.3 Interview technique

As the aim of this study was to qualitatively identify drivers of farm demographic and farm structural change, in-depth interviews were used. In-depth interviewing is a qualitative research method that involves conducting intensive individual interviews to explore respondent's perspectives on a particular idea, phenomenon or situation. In-depth interviews are useful if you are seeking detailed information about a person's thoughts and behaviours or when exploring issues in depth. Interviews are often used to provide context to other (quantitative) data, offering a more complete picture of the problem (Baarda, de Goede, & Teunissen, 2009; Denzin & Lincoln, 2000; Mortelmans, 2007).

By listening to farmers' and other stakeholders' perspectives, their life stories and their argumentation why they did or did not enter/stay in the farming sector; key factors of influence as well as determining frictions fundamental to the actual resulting aggregate trends could be revealed. According to qualitative research terminology, the performed interviews are categorized as semi-structured. In order to achieve consistency throughout different mini-cases and case-studies, an interview protocol with a set of questions was used as a guideline. Some prompting questions were prepared to start the interview and get the respondent talking, together with suggestions for probing questions to trigger the respondent to further explore themes that were already touched on during the interview or new themes that the respondent brought up. This interview outline (appendix A) contained a topic list which presents some broad themes that could be discussed during each interview; without being limited or bound to those themes. Pilot interviews were performed by the task lead to test the suitability of the research design and the interviewing method, after which the initial interview outline was fine-tuned and disseminated across the case-study partners. The aim of the interview outline was to be able to make a consistent cross case-study comparison and to give guidance to the different researchers performing the interviews in the different case-studies, but the aimed atmosphere during the interviews was always to have a conversation and not present a list of questions to the respondent.

The process of taking and analysing the interviews was not strictly separated in time (as explained in the next section). This implied that after some initial analysis, the next couple of interviews became somewhat more semi-structured, since the preliminary analysis may have uncovered new themes that should be discussed with the next respondent. Likewise, the interview outline provided by the task lead could be revised by the case-study partners throughout the research process to make it more applicable to the specific demographic situation of interest.



Furthermore, the interviewee's permission to use the collected data for research purposes was asked for via an informed consent form. Consent forms were produced on country level. It always followed General Data Protection Regulation (GDPR) regulations, and included: (1) informing the respondent about the research; (2) emphasizing that participation to the research is voluntary; (3) asking for permission to record the interview and to implement all the information the interviewee provides in an anonymous way; (4) data storage permission and under what conditions, was specific for each case-study.

## **2.2 Qualitative analysis**

### **2.2.1 Case-study level analysis**

The first stage of analysis included independent data processing activities at case-study level. The research process at case-study level was not a sequential process of first all data collection followed by data analysis. Instead, an iterative approach was used; typically performing several scientific research activities in repeating cycles: (1) performing first set of interviews, (2) first analysis and fine-tuning of interview outline, (3) performing second set of interviews, (4) accomplish preliminary analysis, (5) performing final interviews, (6) final analysis. The ideal approach consists of three cycles and is described in more detail below. However, some deviations on this ideal approach were inevitable (Table 2) due to the limited availability of respondents, the demanding research design, combined with time, location and budget constraints.

For the first cycle, researchers aimed at performing the interviews for the first 2 to 3 mini-cases that were selected. After each interview, the conversation was transcribed ad verbatim in the local language and open coded (i.e. descriptive texts were allocated to fragments of interview transcript that are interesting for defining answers on the research questions). This resulted in approximately 3 – 8 interviews on which the first preliminary analysis was performed by axial coding of these interviews (i.e. clustering open codes into higher conceptual themes). This first tentative analysis enabled the researchers to fine-tune the interview outline for the next series of interviews and also allowed them to reflect on their interview techniques and share experiences during the follow-up skype meetings. This tentative analysis sometimes resulted in the discovery of new topics from these first interviews, which appeared to be interesting and worthy to ask to other respondents about it; looking for confirmation and similarities/contrasts between mini-cases. In all cases, it gave the researchers a more clear view on which topics they should focus (more) on during the next series of interviews.

After the first preliminary analysis, the researchers chose 2 to 3 new mini-cases and performed the interviews for these mini-cases. Again, each interview was transcribed and open coded. This resulted in approximately 10 – 18 interviews in total, for which a second preliminary analysis (axial

coding step) was performed. This either confirmed or contradicted the findings from the first preliminary analysis.

After the second preliminary analysis, the third and last research cycle was performed. Ideally, another 2 or more mini-cases were performed, including the third series of interviews. After transcribing and open coding the last interviews, the final analysis was carried out using all collected data (i.e. 6 to 10 mini-cases comprising approximately 10 to 20 interviews). The final analysis consisted of a selective coding step (identifying the most important axial codes, making final links and clusters and writing the case-study report).

### 2.2.2 Integrating case-study findings

The second stage of analysis aimed at integrating case-study level findings integrative findings on farm demographic change, through a cross-case comparison. During an intensive two-day work session, two researchers assessed all axial codes (taking into account the underlying open codes) that were reported in the case-study reports as representative concepts for explaining farm demographics. Memory cards were made (axial code on the one side, description and respective open codes on the other side) using post-its in order to be able to change positions of axial codes in the general scheme that was constructed on a white board. Through an iterative process of interpreting, grouping and merging the case-study-level codes (an approach similar to the iterative analysis process performed within each case-study), selective concepts were identified that later formed the fundamentals of the general framework on farm demographics. As the aim was to generate an overarching framework that is able to capture the main factors of influence on farm demographics, the focus during this work session was on finding major similarities and contrasts between case-study results, thereby checking within-case study differences versus between case-study differences.

All case-study reports were coded in NVivo<sup>2</sup> to validate the draft version of the general framework that resulted from the work session, and to check whether there were themes overlooked during the work session. The initial coding tree was a structured version of the framework that resulted from the work session, and was adjusted during the coding process following a constant comparative approach.

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<sup>2</sup> NVivo is a software package that serves as a tool for advanced qualitative data management and data analysis

### 3 CASE-STUDY RESULTS: FARM DEMOGRAPHICS AND ASSOCIATED IMPACT FACTORS

A comprehensive description of all case-studies is presented below. For each case-study, first a scene-setting section provides a brief description of the case-study context and summarizing the main case-study-specific findings in a nutshell. The second section presents a detailed report on the case-study level results; including the coding list with descriptions as provided by the case-study partners to the task lead.

#### 3.1 Dairy farming in Flanders, Belgium

##### 3.1.1 In short: case-study context and main case-study findings

Within the northern Flanders region, 12% of farms are dairy farms, 50% of which are specialized. The Flemish dairy farming sector used to be typically consisting of many small farms. However, intense structural changes during the last decades resulted in a currently different population composition, characterized by a large share of medium-sized to very large farms. Since Flanders is one of the most densely populated areas of Europe, land availability is an issue and high land prices make non-familial farm transfer very challenging and exceptional. Although dairy farms are found in the whole case-study region, dairy farming is more predominant in certain regions over others because the agricultural sector in Flanders is somewhat clustered. Consequently, the low availability of land, mentioned by all respondents can be more problematic for farm continuity in the areas where there is more intra- and/or intersectorial competition for land.

Regarding organizational and ownership structure, the sector is dominated by family farms. The Flemish dairy sector is very capital demanding in terms of the production factors land, labour and infrastructure, challenging new entrants to create a promising but realistic financial plan. This was illustrated by the non-decisive attitude of potential successors in the sample, along with the observation of postponed formal succession. The evidence and rooted tradition of family farm succession that was observed throughout the Flemish interviews, appears to be one of the key drivers for entry in the sector. Relating to this, the intermingling between family and farm business was also illustrated by the use of off-farm income (typically brought in by the spouse) to secure farm survival.

All respondents report severe price volatility of input and output products. All respondents discuss the issue of the labour intensive production method that used to dominate the sector about one generation ago, pointing out the logic of the currently observed intensification and automation trend. The latter entails farmers scaling up their farm business to increase the return on investment.

The main strategies applied on the Flemish farm businesses in this case-study sample could be divided in two groups. The first group of farmers mainly focus on improving profitability by lowering input costs as much as possible and/or by scale enlargement. The second group of farmers diversified their on-farm activities by agritourism, on-farm processing or a selling point. All of them are sooner or later confronted with a labour dilemma: they should decide to either rely on family labour and/or think of hiring external labour in order to milk manually or to manage a larger farm in the future; or to make large investments in automation in order to be less dependent on expensive labour.

### 3.1.2 Detailed report on case-study results

#### The traditional family farming succession cycle as an enabling factor for entry

To be born and to grow up on a family farm implies that you, without actively choosing for it, make connection to farming, or that you are involved in the daily farm work in one way or another. The connection or shared dedication that family members show towards the family farm was observed to be related to the formation of entry and non-exit decisions. These decisions are correlated with emotions that respondents show towards the family farm. For example, feelings of pride (the achievement of creating a beautiful farm over the generations, the tradition of farming that has been in the family for years), place attachment (farm and family have lived together at the same location for years), devotion to the farm work, and love for the animals were factors that seem to strongly drive entry and non-exit decisions.

The fact that the family life is overlapping with the farm business life cycle is illustrated by the observation that the succession of the farm was often described as being just a logical next step in the farm and family life cycle. Also, key turning points in the family life cycle are often strong triggers for major demographic or structural changes on the farm. The most common example here is the falling out (caused by an accident, sickness, death, retirement) of a family member who is crucial in performing the farm activities. We illustrate with mini-case 2, where the farm head and father of the family suddenly died, a key turning point that confronted the other family members with an inconvenient situation wherein they were forced to quickly make a decision on the farm continuity (thus, emotionally driven as was discussed above).

**And have you known for a long time already, that this is what you want?** MC2R2 (son, prospective successor): *“Yes, since daddy died it is official. Because I wanted to... I always just wanted to do machines, contract work. (...) But somehow it has been forced... I mean, I do like the job...”* **What do you mean ‘it has been forced somehow’?** MC2R2: *“Normally, it would have been... If daddy was still here then I should not be doing what I am doing these days and that’s... It’s kind of... [searching for words] an expect- no not really an expectation but... I don’t know how to say.”*

MC2R1 (mother, current farm owner, widow): *“Indeed, he was kind of required, you know. I wouldn’t have managed all of this alone. It is because he was willing to stay home, that it can continue.”*

Another example is the common observation that the presence of possible successors on the farm was a reason to invest in the farm development (by adjusting the farm management or farm structure) to enhance the overall profitability of it. Also, the moment when a potential successor makes a formal and definitive decision to continue the farm business was seen as an important family event leading to the farm succession and triggering the change of roles that different family members have on the farm. Similarly to the succession step, the identification of the successor was perceived as a matter of course on family farms; resulting from the early involvement of the children in the farm work that clearly reflects who will be the one taking over.

MC2R3 (female, non-entrant): *“Actually, I never really thought about whether I would take over or not. Surely also because I have two brothers, and you could see that they were much more involved: driving the tractor, this and that, they constantly argued about whose turn it is to drive and stuff like that. This way you could see that they were much more involved than me. So then it was so obvious that they were going to do that.”*

Also, entering the farming sector by marrying into a farming family was a common way of farm entry. Different respondents recognized the importance of a supportive partner when you are in the farming business. This support mostly has a practical, a financial and an emotional dimension. There were several examples in the sample of spouses (some of them grew up on a family farm and created negative feelings towards the farming life as a result of the high workload they were confronted with during childhood) stating that they used to swear “not to ever marry a farmer”, but in the end, it turned out differently. The following fragment from the double-interview with a farming couple (mini-case 3) nicely illustrates how spouses end up entering the farming sector, without it being a sharp or critical decision, and also the abovementioned inability of family members to not help or get involved in the farm work:

MC3R8 (female, farmer): *“Yes, in the beginning I still worked outside the farm on a full-time base.”*

MC3R7 (male, farmer): *“But at that point in time, that still worked out. My father helped, remember. (...) But then, he had an operation, didn’t he? He started to struggle with health problems. Then I was alone. Actually, you have rolled into this.”* MC3R8 (female, farmer): *“That is true. It starts with one day a week at home. (...) Then you are faced with the fact that you are not allowed to work half-time. And then you need to decide. What are we going to do now? Are we going for it or not? Then I decided, okay, if they cannot be more flexible at work, then I’ll stay home*



*full-time. (...) I mean, I did not marry him with the idea to start a farm shop once. In 2000, I had no idea that we would ever have this type of farm. Not at all. He probably not either. It really grew."*

The intermingling of family life and the farm business life is also illustrated by the way labour dynamics are set on Flemish family farms. Typically, different family members have different roles on the farm and the division of tasks and responsibilities is related to their position in the family and their personal interests. The observation that throughout our sample, women typically perform administration, or are responsible for the diversification activities, or they take care of the young calves; can be an indication that gender-bias relating to on-farm work is occurring in the sector. On some farms, the work is strictly divided across different family members. This can either work good because it gives family members space and it creates a co-creation spirit in the sense that everyone feels like they cannot be missed; leading to both feelings of commitment (I cannot abandon the farm, I cannot dare or I would feel guilt when leaving the farm work because they need me) but at the same time implies that when one of the actors falls out due to disease, accident or death; the farming family faces a severe challenge. Therefore, on other farms, responsibilities are shared and everyone is capable of replacing the other (in terms of specific farm activity that they use to do).

Respondents report that the survival of a lot of Flemish dairy farms is relying on cheap or unpaid family labour. In some of the mini-cases, all family members agreed with this organization, mostly because they think believe this is a normal thing, it is just the way it goes on family farms. In other mini-cases, the evidence of farm involvement and the (implicit) expectation of providing voluntary labour being a matter of course, was not fully appreciated by all family members. For example, respondent 3 of mini-case 2 (a female non-entrant) was talking about the fights between her brother (the prospective successor) and her mother, thinking that these are the result of him being not paid a full month wage. When their father suddenly died, he was implicitly supposed to help with the farm work; eventually taking over the farm. It was rather taken for granted that this happened, but never explicitly asked if he was okay with this. She also talks about the inconvenient implications the help of her uncles means for the future.

MC6R1 (female, part-time farmer): *"It is the common mentality here in the region. (...) We took over the farm and we worked for it. There are a lot of farms in the neighbourhood where the successors are playing the luxury farmer, they go on vacation and mom and dad maintain the daily work. On Sundays, the cows also need to be milked and I know someone, he is 74 years old, still doing it on Sundays for his son. I said: this will not happen here. When you decide to take over, you need to be into it."*



To conclude, our mini-cases show that working with family can cause stress and can be perceived as a disadvantage, but at the same time, it is seen that potential entrants are not wealthy enough to start up a farm. Respondents indicate that it is almost impossible to take over a farm if you do not have family members or close acquaintances in agriculture because of the requirement of a large starting capital.

### Aspects of the farming occupation and compatibility with individual personality

Next to family context, entry or non-entry decisions were also linked by respondents to someone's personality, personal interests, and passion for farming or devotion to take care of the dairy cows:

MC6R2 (settled farmer): *"Sooner or later it comes out of you I think. It's like someone who rides horses, you are bitten by that microbe or not and if it goes well, economically speaking, or not, that will not, if you really want something then you do it anyway."*

Farming is described by Flemish respondents as a lifestyle rather than an occupation. On the one hand, positive aspects of this lifestyle are recognized by various types of respondents. These include the fact that as a farmer, you are self-employed, thus not working in in favour of someone else, which gives you job satisfaction and freedom. This freedom refers to the possibility to manage the work activities in a way that is convenient for the farming family, meaning that work and private life can be organized in a harmonized way. On the other hand, exactly this intermingling of work and family life was perceived as being a disadvantage of the farming life by some respondents. They highlight that the high workload causes stress on different family members because everyone is involved in the farm work in one way or another.

MC1R2 (retired farmer): *"How do I cope with this commitment [referring to the joined dedication the family members have towards the farm, and the responsibility the farm head has to safeguard both the farm continuity and the family income], and how do I deal with this flexibility? Do I keep seeing the advantages enough and not always focussing on the disadvantages. That is very determinative. Do I keep seeing the advantages? And as a family, there are certainly advantages. (...) On a farm, you actually remain the boss of your own work organization. Everything needs to be done, it must all happen. And what you are not doing now will have to be done soon, but you will remain the boss of your own work organization so at a certain point you can decide: 'the children are priority right now'."*

MC2R3 (non-entrant): [talking about the future of the agricultural sector] *"it is so insecure and vague, and you don't really know what will come or how it will go... I find it a beautiful occupation but it demands a lot of you and you need to sacrifice a lot of things in my eyes."*

The farm work of a dairy farmer nowadays comprises many various activities; requiring diverse skills. For example, the increasingly complex administrative obligations are perceived as a challenge that has been growing throughout the years. Also, the low availability of land and associated high land prices are a major challenge for new entrants. Furthermore, the social isolation during the daily farm work, that is associated with the farmer's occupation by some of our respondents, was a recognized challenge. Many more economic, social and institutional challenges are discussed in the next section. The way in which farmers cope with such changing circumstances is partly determined by the family support, as was elucidated above, but also by their management skills and mental capital, or more generally, the ability to cope with constant noises and challenges and make good strategic decisions. Some of the respondents were entrepreneurial farmers indicating that taking risks is sometimes necessary to improve profitability of the farm business in the longer run. They also emphasize the current importance of managerial ability, and that there used to be more 'copycat' behaviour between farmers (if my neighbour buys a tractor, so should I, and best a bigger one), but that nowadays, you will not make it by imitating others; you need to be capable to objectively decide what's best for your specific farm situation.

Intense intensification trends have characterized the dairy sector in Flanders during the last decades. The shift towards automation as a strategy or technological solution to decrease the high workload, or to create more flexibility in terms of working hours (you don't need to monitor if all the cows have been milked all by yourself anymore). Farmers point out that changing from manually to automatic milking does not necessarily imply a higher efficiency. With a traditional milking installation, you have the flexibility as a farmer to increase the number of cows (this implies you just milk more cows with the same installation; in other words just inputting more labour to increase production). In contrast, when working with a robot, you are fixed to a maximum number of cows that the robot can handle. If you want to enlarge your farm, you need to make a jump by buying a new robot. To improve your return on investment, you should immediately increase your herd size towards the robot's maximum capacity. Our interviews point out that this trend of automation, that is dominant across the Flemish dairy farm sector, is not a welcoming shift for all farmers' profiles. It is evident that this trend will impact farm demographics because intensification and automation implies that less workforce is needed to achieve the same amount of milk. Although for some respondents, the implementation of machinery coming with the automation is fitting their interests and feeding their motivation to become a farmer, the story of one of our respondents illustrates how this trend can make a destructive impact on what other farmers perceive as the core of their occupation. In other words, the trend can affect farm demographics by changing the type of labour force and skills that are needed on farms.

MC8R2 (male, prospective successor): “Nowadays, farming is more about knowing how to process information. The work has been standardized; get all the cows from the pasture land, guide them through the stables and done with it. For other people, that is easy. For me, I do not see my cows. I mean, I look at them, but I don’t SEE them. I have not felt their udder with my own hands, I have not felt whether it is healthy or not. If I can hold their udders on a daily base, I can follow up how they are doing. (...) I know how to treat them when something is abnormal. Now, [with the milking robot], I am always running behind. When I notice that the average cell number is growing up, then I need to search for which cow is causing it. And a lot of time is needed to find who it is.”

Achieving a profitable farm business is an important purpose of family farms that closely interacts with the process of farm demographic change

The Flemish mini-cases illustrate a conflict between two survival strategies that are applied on Flemish dairy farms. Some farms diversified their on-farm activities; typically by selling their products on the farm, by implementing an on-farm processing activity and/or by providing agritourism. They feel like the milk prices are too low to run a profitable farm that is exclusively based on the production of milk. They thus decide to increase the farm income by expanding the number of farm activities, spreading income risk and create added value to their produce. While respondents that applied this type of strategy explain why they did so, the common purpose across their stories was that they aimed at increasing their independency of other chain actors. However, regarding diversification activities, respondents point out that this can never be a large-scale solution to be implemented by a significant percentage of Flemish dairy farmers, because this strategy cannot be favourable in all regions due to the small-scale communities and limited market in Flanders.

MC3R1 (settled farmer): *“The most stupid thing, and this is going to sound weird, that we farmers did, is to outsource the marketing part to third parties.”*

Other farms intensified or specialized their production practices. This usually implies increasing their farm size (number of producing animals), accompanied by investments in automation and technology. It can also entail increasing the farm income by increasing the efficiency of the farm activities; by remaining the current farm size (keeping the number of producing animals more or less stable), but increasing the (quality of) the milk production. The latter can be done by e.g. adjusting the feed composition in the right way. Again, independency of other actors in the farming system was a common driving factor for specialisation.

MC2R1 (female, active middle-aged farmer): *“We could not find anyone anymore who was willing to come and get our pigs because they said ‘these are too few pigs, I cannot come this far anymore for this amount, you need to find another solution.’ And we were not allowed to slaughter the pigs*

*ourselves [by law] and so then we said we get rid of the pigs and we focus on and increase the cows.”*

The key driver for the two major farm changes mentioned above is always the aim of increasing the profitability of the farm business, most of the time because they realize this is a necessary cause for long-term farm survival, accompanied by other drivers and circumstances that are reinforcing or counteracting this key driver. In other words, structural changes on farms are mostly the result of the need for the farm to become more profitable. It was observed that sometimes the best option in terms of financial outcome does not correspond with the farmer's interests, ambitions and/or substantive preferences.

Regarding labour, a labour shortage – which is often raised as a problem when discussing farm demographic dynamics on an aggregate scale in all other case-studies – this was not seen as the core problem in the context of the Flemish dairy farming sector by our respondents. Rather, they sooner or later encountered some sort of ‘labour dilemma’ during their careers. During such a labour dilemma, that was identified in all eight Flemish mini-cases, respondents needed to choose to either maintain the original, labour-intensive way of farming, or to invest in automation of the farming practices. In the first scenario, they realize that soon they will be confronted with the need to hire an external employee because family members will not be around anymore to support the main farm operator (various reasons for this were encountered). Since labour is expensive and future interest in farming as an occupational choice is labile, most respondents are uncomfortable with this option and decide to implement technological solutions instead. However, the latter usually requires a large investment that can only be approved when the investment is in favour of and in function of the long-term farm continuity with regard to return on investment. In other words, the decision is correlated with the decision of the prospective successor to continue the farm. Also, automation is often accompanied by scale enlargement, which is again experienced by our respondents as increasing the workload.

MC6R2 (male, middle-aged farm operator): *“Our production has increased but the input costs have also increased. Have you ever tried letting someone work for the same wage as thirty, forty years ago? The only option in agriculture was scale enlargement. This means bigger investments, and having more risks. To again attain the same income, maybe. And it also implies more work and less leisure time (...)* MC6R1 (female, assisting spouse): *“So you are really the victim of your own success actually, because you no longer have any free time.”*

### The socio-economic environment and the political framework are not fostering entrants to start farming

First of all, social aspects influence farm entry, exit, non-entry and non-exit decisions in Flanders. The high workload that is associated with farming is not compatible anymore with current societal ambitions and aspirations. Moreover, youngsters are now by default enjoying a good education, therein faced with a lot of career opportunities, potentially pulling them away from farming; which used to be less the case a couple of decades ago. Furthermore, the lack of flexibility is discouraging potential entrants, as making a career switch is very difficult once you've decided to become a farmer and invest into it. You need to pay off your loans.

MC6R2 (male, active middle-aged farmer): *"In the future, that [referring to uncertainty about land availability] will not be an issue anymore. It has been an important aspect for years, but there will be a lot of farmers exiting and so there will be enough land becoming available."* **Why do you say so?** *"I am 100% sure about it, not everyone is as crazy as I am. The current mentality that is living in our society, and I understand the people who want to live in another way, not everyone is crazy enough to work day and night."*

Second, intense competition for land between farmers, but also caused by competition for land with other sectors, was perceived as favouring exit decisions; but also as an important factor hindering entry. Moreover, most respondents are not content with the current tenure legislation because land owners have much power in deciding what happens with their land and they legislation is often bypassed so that farmers are insecure about their long-term land availability.

Third, farmers feel like they are not trusted, and not accepted anymore by society (especially consumers). They are being controlled by various government organisations regarding food safety; and they understand why this is important and they even agree on the need for these check-ups, but the farmers think that policy makers are exaggerating. Furthermore, the frequency and abundance of such controls, and the atmosphere during it, are annoying our respondents, or making them feel disrespected. They declare that they are passionate about maintaining their farm clean and neat (as part of their pride on their farm), and that the audits create a negative atmosphere of distrust and disappreciating the farmers.

Fourth, all respondents indicate that it is important to maintain good relationships with people from the neighbourhood to control for competition and being accepted as a farmer. Some successors talk about opportunities they faced that have crucially fostered the farm development. For example, the allocation of land being based on good relationships between neighbouring farmers and/or landowners, was a key turning point explained by successor which they viewed as some type of legacy gift from their parents. Also, a couple respondents linked the importance of



this factor to the availability of credits; as they understand that banks are getting more cautious to provide loans compared to a couple of decades ago, when agriculture was a flourishing business.

Last, political uncertainties and a lack of a long-term vision within the legal framework, combined with frequent changing regulations, are a common frustration among the sample respondents. They explain that it is difficult to keep up with protocols (to apply for funds and financial support) being constantly changed. Some of them find it difficult to adapt to digitalization. Regarding legislation, the dairy quota being abolished are a large frustration among the middle-aged and older Flemish respondents; mostly because they have spent a lot of money to it and this investment to be allowed to produce, abruptly disappeared. Overall, the instability of national regulations make it difficult for dairy farmers to define a long-term plan for their farm. It is especially not consistent with the long-term impact of strategic dairy farming decisions that are impacted by the long biological life cycle of dairy cows. Furthermore, respondents are frustrated about the unfair level playing field wherein cheap milk is imported from other countries and undermining the profitability of the Flemish dairy sector.

MC6R2: *“They can, within one year, by changing one law, force you to look different at your own business plan. The impact of changing one law is much higher than you would think. If you decide ‘I will do it this way and normally I should have paid off the debts within ten years’ and then after two years they change the law, then you are standing there at the side-line... The continuity, if they approve something, they should think twice like this cannot end in one or two years but it must last at least ten years.”*

## 3.2 Large-scale corporate arable farming in North-East and North-Central Bulgaria

### 3.2.1 Brief description of case-study context

The Bulgarian case-study focuses on the large scale arable crop production in intensive farms that have gradually developed to reach current size of up to 3000 hectares. The current farm demographics in the Bulgarian case-study were analysed while considering the particular historical context. The collapse of communist regime and the transition to market economy induced a process of privatization of state-owned farm land, leading to fragmented land ownership patterns today. It also implies that the studied farm businesses are not older than 20-25 years, lacking a long-term tradition of farm succession. The initial financing for setting up most of the farms was obtained through informal relationships and later with the use of subsidies and the support introduced as part of the EU CAP support. For the interpretation of the Bulgarian



case-study, it is important to keep in mind that all mini-cases are now for the first time faced with the entrepreneurship in liberalised market and the challenges of farm generational change.

The legal forms of operation varied across the mini-cases: cooperatives, sole traders and very large corporate companies, often covering multiple enterprises, but most are in practice run as family businesses. The land ownership ranges between 2 to 60 percent and current land relationships are based on short-term contracts; inducing competition between farmers to rent/buy land. This reinforces the ongoing increase of land prices and diminishes the willingness of farmers to invest in long-term sustainable activities (e.g. crop rotation or set aside interventions are not benefitting the farmers in the long run and the current situation is jeopardizing soil quality perseverance). This is considered as a limitation for farmers' growth and as a major gap in the potential performance of the overall sector.

Moreover, the state-forced collectivisation during the communist time is still influencing the general mentality of all citizens: a reluctance to cooperate which also correlates with the mentioned problem of fragmented land ownership and insecurity of constantly changing legislation and institutional framework. Therefore, farmers tried to decrease their dependency on landowners by increasing the share of owned land, simultaneously ensuring long-term stability of their business. Respondents also see buying land as one of the most valuable investments taking into account their inheritors, regardless their intention to continue the farm or not.

Additionally, the entrance in a more globalized market after the accession to the EU in 2007 and the current challenges (climate change, labour force scarcity, CAP requirements, etc.) further forced farmers to look for new practices, to apply greening measures and to diversify their crops in order to be more competitive and environmentally friendly. The original allocation of land results in farmers now having to deal with scattered parcels, which negatively impacts their efficiency but is at the same time viewed as a risk spreading strategy in terms of climatic challenges together with improvements and access to different type of insurances.

In all the mini-cases, a high degree of mechanization was cited as a risk management strategy for the current labour market situation; which is characterized by a lack of workers as a result of rural aging and depopulation. Further, the respondents argue that they are disadvantaged by world corporations grabbing away the qualified agronomists. As a reaction, some farmers organise scholarships for pupils and students as an attempt to regain the interest of the new generation in farming and as part of the strategy to improve the bridge between agricultural practice and educational and research needs for the future development of the sector.

### 3.2.2 Detailed report on case-study results

Crop production is important and has a long tradition in Bulgaria. North-East Bulgaria, where the research area is located, is known as “the granary of Bulgaria” and is of crucial importance. The production capacity is a result of the natural conditions on the first place but also historical developments and transformations had taken place. In this regard several facts have to be taken into consideration when the results of the interviews are interpreted.

First of all, agriculture during the communist regime (1944-1989) was organized in large-scale, mechanized farms, producing for national and international consumption (the process of collectivization resulted in that over 92% of arable land belonged to the collective farms - complexes averaged between 36,000 and 100,000 hectares; private plots at very small size and share remained productive only for self-consumption). Specialisation (horizontal integration achieved by specializing in three or fewer crops and one type of livestock) was externally forced not only for the production units but also for the regions. North-East region had specialized in crop production with main field crops wheat, maize, and barley. Today, these developments have been considered as a tradition by the farmers interviewed now.

Second, after 1990, the large production complexes are dismantled; the property rights in land returned to their initial owners prior to collectivization (mainly to their inheritors which resulted in highly fragmented agricultural land and domination of small scale farms). The sector has passed through a rapid transformation as all operations were liberalized and the “new” farmers (either family, cooperatives and corporate) started to learn “how to do that business”. Actually, this is the beginning of entrepreneurship in agriculture in Bulgaria. All over the country as well as in North-East region new farm structures started and the longest “farm story” we collected is 23-25 years.

Third, after the year of 2000 – the period of preparation to and accession to the EU (2007) – the process of CAP implementation (SAPARD, RDPs and SAPS) has changed farmers’ behaviour (increased investment opportunities) as well as the interest in farming (better profitability) and land relationships (higher competition and restricted access to main production factor in arable farming). All over the country as well as in North-East region land prices (rent and lease as well) increased several times.

Fourth; during the communist time a process of industrialisation of economy (together with land confiscation) push emigration from villages to towns and also played a role of disconnection of people from land management and food production – in the state farms all the workers were hired but not the owners and had no ideas and plans of continuation/succession and concerns of owners. Moreover, after the changes towards market economy, the emigration process had been

reinforced (collapse of enterprises etc.) and not only from rural but also from urban areas towards abroad. One of the very negative consequences is lack of labour force (either in quantity and quality) for all the economic sectors but much more severe for agricultural.

With regard to the factors enabling farm demographic change two main groups can be identified.

The first one is related to the conditions under which farmers were allowed to start their private farm businesses and companies. Thus, the land has been shifted into a new legal forms of limited liabilities, shareholding organizations, etc. Those farms specialized in crop production became bigger in size compared to the cooperatives and are more important in controlling land in the region. At that time the most important drivers were education specialisation, trainings and engagement in the past structures – it is not the case of inheritance but somehow those who worked in the cooperatives were keen to continue but in their own way – size, specialisation etc.

The second group is about financial resources that farmers at the beginning utilized and later on the changed conditions as a result of the overall economic development, accession to the EU but also because of the built relationships and self-confidence of the farmers operating in market economy. In this regard at the beginning farmers did not have many opportunities because the credit institutions had just started, did not have also experience and the bankers were cautious. But also the lack of successful story for each farmer-entrepreneur made the credit conditions more restricted. Therefore, at that time personal relationships and family support is crucial to secure initial capital. Later on, the trust between farmers and bankers, also the security of EU support, made bankers more open and collaborative. Currently, for those farms it is easier to secure sources of investment even to generate own fund. But also it is the same for young farmers and new entrants just because the experience changed credit products and credit institutions behaviour.

Another important issue raised as a factor of starting farm business is market opportunities and market developments – farmers realised the must to follow market trends and to collect information. The farmers should find trustful sources of information, to assess their importance and to learn and gain knowledge to manage and properly estimate that information.

The second group of drivers of the farm demographic change is constraining factors.

According to the interviewees, one of the main constraints is the land ownership, the legal framework which regulate the relationships between land owners and farmers but even it is more complicated for the relationships between farmers in the region because of the competition to buy/rent/lease agricultural land. Several trends affect farmers, especially their long-term plans. First, there is the raised interest in farming activities which increased the demand of land

enormously. Second, the historical occurrence of various non-loyal practices as unnatural increase of rents/leases and putting land owners in a position to blackmail farmers for higher prices. This trend is strengthened by the fact that the usual duration of the rent/lease contracts is one year. There is thus no other reason except the goodwill of the owner to continue collaboration with the farmer. In general, farmers encounter instability and do not want to plan and undertake long-term investments such as crop diversification, perennials or specialized machinery. But it is absolutely important for each one of them machinery equipment in order to secure proper land management and timely processes in crop production. Furthermore, the territorial scattering of the plots and insecurity if the same plot would be available for the same farmer cause additional costs. It should be mentioned that this situation impedes small, young farmers and new entrants and in this regard the inheritance is one of the main (I would say the only) option for those groups to enter farming business in the CS region.

Another important fact is the investments in land (on an average 40-50% of the land managed by the interviewed farmers is owned) considered as part of their risk management strategies in case land relationships change or the overall framework push them to exit the farming. Thus, land capitalisation is an option to secure family income.

The access to agricultural land is related to the farmers' willingness to cooperate – since it is obvious that cooperation is not considered by the farmers, only the unofficial and social collaborations could affect farmers' decision-making. It is seen the non-cooperation is a disadvantage for all of them having in mind their position in value chain but no one would like to cooperate. Thus, many of them invested in the up-, mid- and downstream activities to improve their market position, respectively their economic performance. The farmers' behaviour is distinguished by their statements but the only reason mentioned by all of them is the low level of trust and unsecure legal framework which is not considered reliable to protect their rights in case of cooperation.

Last but not least, labour force issues are considered of second importance than the land acquisition. The overall negative trends in rural areas: depopulation, aging of population and low levels of education and qualification of the available (if there is) work force take place. It is a problem that cannot be solved by single farmer and complex and simultaneous actions are needed in different scopes and coordinated by governmental institutions both at national and regional/local level. But farmers realise also the fact that young people do not prefer living in villages and do not like farming activities. It is a constraint that farmers overcome only through investments in new machineries and running farming activities which can be mechanized. Thus, they reduce their dependence on the workers but somehow contribute to deepen the problem. A crop farm with 1000 ha can be managed by 5 to 7 permanent employees as it is the situation

now. Another fact is that due to the technological advancements farmers must train workers and they need higher qualified employees.

Three main drivers were identified as challenges and opportunities for long-term success affecting farmers' entry/continuation/exit decisions and farm demography. For crop producers' main challenges for the future are natural conditions, climate changes and pest and diseases control and their strategic decisions target to be prepared to change the production technology and varieties, to implement innovations and to adapt/transform their practices towards different policy requirements. Thus, they can respond to the changing needs and expectations of the society. But also, they will take into consideration the strengths of their competitors.

Each one of them is keen and look for innovations, mainly in machineries (implementation of ICT) but increasingly in new varieties and technologies (precision farming, no-till and/or strep-till, greening etc.). Current strategy of most of the farmers is to experiment and to adapt their current technology/variety to the changing climate conditions and cultivating new varieties to adapt them to local conditions (soil type, microclimate etc.). Participation in ongoing trainings and learning to be able to maintain their production in constantly changing climate conditions as well as preservation of the soil as precondition for good quality of produce is part of their strategy.

Diversification is considered as an option but the opportunities are concentrated in activities supplementary to the crop production, in activities to overcome seasonality and dependence on the intermediaries.

Various factors influence local embeddedness of the farmers - social activities in and with local community (support to locals, organize fairs and common events) as well as showing attachment to the place and to be successful as part of local community (creating jobs, become a leader, promote community understanding and value of agricultural profession). The society needs farmers and farmers need society and the networking processes facilitate resilience of the crop production system in North-East Bulgaria. Networking generates collaboration between farmers and locals, farmers and land owners and between farmers, creates social links leading to the development of local social capital. Some of the controversial rural developments were part of the discussion about availability of labour force and part of possible decision is sharing common social norms, values, and concerns especially in this case where official collaboration is rejected.

Farm demography is substantially influenced by the succession process and driving forces of it. The question of generational change is just taking place nowadays in Bulgaria. And most farmers stated to be keen if their children inherited and continue the business. But there is no experience how it would happen if happen and which of the factors will be most influential. There is a willingness not to lose what is achieved in one's lifetime (usually father) but there is no

attachment to the farm history as part of the family history. It is obvious that very important is the transfer of knowledge and skills to the next generation – each one of the farmer insisted her/his child/children to graduate in agricultural sciences, to take trainings abroad and last but not least to participate in all operations in the farm (from tractor driving to the official documentation processing). We should mention also the entrepreneurship skills which are hardly to learn if are not naturally given, e.g. their vision to differentiate into businesses close to agriculture – acting as representatives of multinational companies. Another point of view is that at the moment these are parents' expectations and wishes and how much their actions are related to the binding farm investments and changes with the decision of the successors to be involved and later to continue in farming as well as how much of successors' involvement pushes her/him to continue.

But there are also farmers which stated their unwillingness of continuation and lack of desire their children to continue just because they are disappointed by the image of agriculture (especially of crop producers) in society and it is not related only to the weather conditions and level of income (they seem acceptable for the farmers just because they are used to that life) but also it is about the overall institutional framework and societal perceptions.

We can say that the main concepts are repeating (presented in appendix B) despite of the differences of their formulation by the farmers. In most of the cases very little additional information is obtained but the link between the factors is arranged in different way and is of different importance for the farmer.

### **3.3 Extensive beef cattle systems in Bourbonnais, France**

#### **3.3.1 Brief description of case-study context**

The Bourbonnais region is located in the centre of France (Massif Central) and is characterized by a grassland landscape (the so-called "Bocage Bourbonnais") of unique aesthetic quality, composed by pastures and hedges which is at the same time a result of and a support for the dominating extensive beef cattle farming system. The farming system of interest is mainly specialized on suckling cows and grass-fed calves which are then exported abroad (mainly Italy) for being fattened and finished. Between the years 2000 and 2010, the numbers of farms in the Bourbonnais region fell 25%, with most exiters being beef and dairy farms. The majority of farms are family-run businesses, in some cases certain partnership organizations are set up.

The labour is provided mainly by the family relations and only seldom sourced outside the household, as illustrated by our mini-cases. The legal form of the farm was observed to be a



strategic and reasoned choice and respondents indicate that the existence of particular legal farm partnerships enabled them to generate enough income. Generally, the spouses of the male farmers provide unofficial help on the family farms, but they maintain an off-farm job to ensure a stable family income. The family life cycle was observed to directly impact the farm business life cycle. Interest and passion for agriculture are described as the main drivers both for the familial inheritance of the farm business and also for entry into farming by non-family farm succession. The latter was observed in some mini-cases where the successee and successor have known each other for several years.

Being dependent on grasslands, this farming system is very vulnerable to droughts. More and more farmers are conscious of the necessity to preserve and conserve their environment. The use of pesticides and herbicides is limited, as greater attention is given to environmental schemes. Respondents considered this as a positive trend as they tend to feel emotionally connected and attached to the landscape, which is designed by farming practices. Furthermore, emotional attachment to the animals was observed to influence both demographic as farm management decisions.

Respondents stated that gaining satisfaction from their job is being jeopardized because of facing many different challenges at the same time. Challenges mentioned were of the following types. First, farmers encounter increasing financial concerns as a result of the increasing cost-price squeeze. Second, pressure of social trends, such as higher expectations about animal welfare and vegans are perceived as challenging. Third, the high workload and scarce vacation opportunities were stated as an increasingly important factor threatening the future interest in farming.

To cope with the above challenges, the farmers in this sample mainly focus on mitigating income uncertainties. For example, many of the farmers develop a second livestock activity (label hens, pork, service provision) or are involved in cooperation forms, e.g. for sharing farm equipment. According to our respondents, the production in the years to come will be focused on increasing the quality of the final product by e.g. investing in better breeding, quality of the feed and increment animal welfare. As a result, while past business development was typically characterized by the expansion of farm land and the acquisition of a larger number of animals, the future business developments will most likely involve diversification strategies, such as increasing the number of breeds in the herd, or diversifying the possible marketing channels for calf exportation. Feed self-sufficiency is hereby seen as a necessary strategy to ensure the resilience of the farms. Increasing land owned and farmed becomes an obvious prerequisite, however it is not always possible due to high land prices and/or land unavailability.

### 3.3.2 Detailed report on case-study results

#### What factors and drivers influence farm demographic change and how?

##### **On the one hand, incoming farmers benefit from positive drivers:**

###### *A region dedicated to and organized for suckling cows*

Agriculture in Bourbonnais region is organized around the meat production. Meat industry stands for 61% of the food industry's jobs and or 20% of the companies of the territory. The region traditionally sells the weanlings (male and female) to Italian finishers. More than 65 000 weanlings were exported in EU, 90% in Italy. The female are finished (butchery). The farms located in crops area also finish the males. Consequently farmers benefit from a well-structured organization. Many operators are distributed on the whole territory: producers' organizations (mainly cooperatives) are structured around slaughterhouses (big and numerous - 100 000 cattle a year, 45 000 tons of carcass a year).

Workforce is quietly affordable (farmers haven't stress that hiring manpower was difficult). The agricultural branch reaches 5.1% of the workforce of the region (only 2.5% at the national scale). About 10 000 people work in farms in the department of Allier. This organization brings some assurance to incoming farmers who know they will take part to a big global activity.

###### *A qualitative production thanks to the existence of quality label*

The region benefits from a number of official labels (label rouge): 1,472 farms produce under one label. Two slaughterhouses are certified for these labels and organic production, which enables producers to sell their products at a higher price. As the search for profitability brings many changes in demographic evolution, the presence of labels is a strong asset for meat producers. A small segment of farms offer production "off season": early calving (autumn) to sell the weanlings before another region, which enables maintaining a higher price but involves higher production cost (concentrated food is needed).

###### *A rural territory naturally adapted to meat production and with strong environmental assets, supported by EU regulations*

The region is naturally adapted for suckling cows, which consists in a great strength to motivate young people to become a farmer. Half of the surfaces from the territory (503 000 ha in total) are grasslands and it rains regularly during the year (climate exceptions, see next chapter). Therefore livestock is mainly fed with pasture, hay or grass silage. The introduction of leguminous plants help farms to reach self-sufficiency, which is also a strong driver of installation. They can also count with 22% of wood surfaces, which represents an additional income if well managed (heat, litter, animal welfare while outside). Farming contributes to preserve the territorial aesthetics

(hedges, grasslands, walls). The Bourbonnais's hedges has been claimed as a sensitive natural region, thanks to his emblematic hedges. CAP supplies valorise this system thanks to the second pillar and grassland sanctuarization, which encourages farmers to keep on with grass production.

*A grassland production that fits with social expectations*

The authenticity of the department can be promoted locally or even beyond: indeed the Bourbonnais' hedges associated with the Charolais suckling cow benefits from a positive image: grassland production, animal welfare, carbon sequestration etc. Incoming farmers are more likely motivated to start a production that answers social needs. An illustration of this effect is the increase of direct sale: consumers value the local production because they trust it and it meets their expectations that go beyond the gustative quality. Demands for a "more natural production" is increasing and Bourbonnais meets this objective.

*The opportunity to develop diversification*

As presented before, profitability is mandatory for a farm to exist. Sometimes the existing farm does not provide enough activity (i.e. income) for one more person. Hence the necessity for the incoming farmer to develop a side activity or a big evolution in the selling mode. Thanks to the existence of slaughterhouses and to commercialization structuration, young farmers have the opportunity to develop a second activity as laying hens, label poultry or even pig production. The proximity with three relatively big cities also enables some farmers to develop direct sale or markets.

**On the other hand, incoming farmers have to deal with difficulties:**

*A profitability too low to maintain workers on farms*

The price of meat is low and main expenses increase, causing economic difficulties for farmers: they are no longer able to live decently and to invest on new buildings, material or new technologies, which would help to improve working conditions on the farm. Consequently the transmission of the farm is difficult in this context because of the low profitability. Young people aspiration are less and less compatible with livestock farming: the number of farms decreased from 25% between 2000 and 2010. The challenge is to stop the decreasing of farms and to enable young farmers to take over farms.

Generally the market is unstable: fluctuation of prices, uncertainty of sales... Some sanitary events affect badly the meat production. For instance the sanitary crisis of 2015 (bluetongue disease) weakened the Bourbonnais farms, with a closure of the markets (example of the Turkish that bought lots of weanlings at a very good price but stopped it due to the bluetongue disease) and a lower income in the following months.

Lack of profitability is also one of the main reason of quitting the farming activity before getting to retirement. Some farmers give up because they have no more energy to manage a business where production costs are above the sale prices.

#### *International context not in favour of French meat*

Uncertainty about the CAP context, which evolves regularly, makes it difficult to invest and contract a high debt to settle down. The lack of economic visibility in the future prevent some farmers to invest and to concretize their installation project. Moreover Bourbonnais farmers suffer from the opening of the EU market (i.e Spain, Poland or Ireland) and soon some international trade agreements (like MERCOSUR). Indeed the French labour costs are higher than many beef producer countries, which concretely trigger off a higher price for meat. Farmers see it as unfair competition and suffer from having to sell their products sometimes under the production costs.

#### *Climate change is endangering self sufficiency*

Usually the Bourbonnais's climate is adapted to grassland production thanks to a good amount of rain. But in the past decade the region witnessed an alternation of wet and dry periods which has a strong impact on land productivity. Farmers had to deal with 3 consecutive drought in the past three years. This climatic phenomena has economic consequences for farmers, who have to buy forage to feed their cows at a very high price. As profitability is based on farm self-sufficiency, it sometimes bring farmers to bankruptcy. As the visibility on climate change is not clear, young farmers hesitate to develop an activity linked to a production that is climate dependent.

#### *A heavy social context*

France has to face an increasing movement of controversies about livestock farming: use of land, gas emissions, meat consumption, sanitary aspects, animal welfare etc. Beef cattle is mainly targeted for the red meat consumption. Farmers are also tempted to switch their animal production to cereal, less time-consuming and above all more remunerative. However the Bourbonnais region remains a very agricultural region and may be a bit more protected from these attacks than livestock farms around big cities, in fact, its agriculture already reaches some of the social standards that are currently expressed: open-air farms, production itinerary, autonomy etc. But this general atmosphere is pleasant and contributes to the lack of motivation among young people to take over farms.

### What are the drivers of entry/exit decisions?

#### **A familial history to be continued**

Although personal motivation for farming is important to take over a farm, tradition weight is maybe even more crucial. The idea of reproducing a familiar scheme is very much anchored in some young farmers' children. It is also synonym of proud to take over the historical farm, transmitted from generations to generations.

When a sudden change in the family structure occurs (death, accident...), some children consider it as a duty to take over the farming activity, even if it was not the initial plan. But the willingness of pursuing the familial activity comes first. It may trigger off some frustrations later, because the child may feel later that he was forced

#### **Family structures that facilitate installation of incoming farmers**

French in general and Bourbonnais farms in particular are family managed. Although salary labor is increasing in farms because of the rise of farms' size, most of the farms are conducted by familial association (parents, siblings...) or a couple. This makes the transmission to children much easier and explains why most of the installations are made inside the family structure. Good relationships are a key-element for the transmission: sharing passion, ideas, responsibilities etc. facilitate the child decision to integrate the farm.

#### **Personal experience of the incoming farmer**

The professional history also plays a huge role in entering or not farming. A young person working for a private company may come back to family farm because the idea of being his own boss is strongly anchored. Moreover the fact that he had worked outside the farm for some time brings him some open-mindedness to better deal with some future problem on his own farm. In parallel personal experience like illnesses or traveling may lead people to care more about what they eat or experiment and therefore bring them to production to change lifestyle and come back "to the basics".

A global increase in farmers' skills results from a higher education and opens the gate to a more precise agriculture (captors, monitoring etc.) but also less rough working conditions. This is a way of attracting more young people into farming and also facilitates accession for women

#### **Regional agricultural orientation and economic context**

Farming is a business (almost) as any other. Good regulation policy and economic context help to motivate entrepreneur farmers. Regional orientations support some types of activities like the development of direct sales or organic production. Some incoming farmers are happy to develop these activities, as long as prices are sustainable for them.

Conclusion: a negative atmosphere that does not invite young people to become farmers but a territory that offers some opportunities

In the past decade, land tenure and livestock managed by each farmer have increased a lot: there are less and less farms but also more and more farmers on a same farms. It is the factual demonstration of a huge democratic change in Bourbonnais.

Farmers are quite negative about meat production in Bourbonnais, but also in France. This is due to a global negative climate that discourages people from taking over the familial farms or to consider settling down:

- Lack of sustainability of the activity (rising production costs, falling remuneration), which is definitively the main problem and causes a decline of agricultural demographic and prevent from assuring generation renewal.
- Increase of challenges for livestock farming via social networks, especially higher environmental and social expectations with few or inexistent recognition for the farmers.
- Declining trend in meat consumption and new consumers' habits (spending less time cooking and buying processed foods like chopped steak; competition with granivorous meat).
- Exhaustion about administrative burden.
- Quantity and difficulty of the labor, for a generation that aspires to live as every other young people.

However more and more innovative initiatives are taking place in the region, in order to benefit from the emerging markets and showing that Bourbonnais suckling cows farmers still want to defend and promote their profession:

- Farmers' Drive, organic and non-organic, with the sale ensured by the producers.
- Complementarity between livestock farmers and organic cereal growers.
- Burger Bourbonnais competition to surf on the new consumer's habits.
- Supply of wood chip litter to replace straw.
- "Agrilocal" initiative, a tool made available by the departmental council to link public buyers and farmers.



### **3.4 Large scale corporate crop farms in Altmark, Germany**

#### **3.4.1 Brief description of case-study context**

The German case-study covers the Altmark region in the state of Saxony-Anhalt. The majority of farms in this region are characterized by large scale operations (ranging from 400 to 4000 hectares) which are the result of the former state-run cooperative structure of the German Democratic Republic (GDR). The Altmark is a major milk-producing area in East Germany and dairy cows are usually kept in herds of one hundred to more than five hundred cows. Even though corporate farms only account for 10% of farms, they use almost 45% of the agricultural land. These farms have a high share of loan capital and rented land, and therefore, a relatively low capital base. Typically, both family and hired labour are used on corporate farms in the Altmark.

The mini-cases present mainly specialize in arable crop farming and dairy production, and in some cases diversification is sought by on-farm processing of produced milk, direct marketing, or by constructing and running a biogas plant. Gradually, the livestock specialization is either abandoned or re-examined by the farmers, as it is perceived as a source of potential risks due to (1) low milk prices inducing low profitability of the enterprise; (2) the low availability of specific skilled labour force for the dairy sector; (3) regular changes in the milk quota system which entailed an extra source of uncertainty.

Farms are managed mostly by educated professionals, who either have a formal education in agriculture or extensive experience in the sector. Most of them have a personal connection with agriculture, for example by family tradition. The more complex organizational structure of the corporate farms is illustrated by the demographic profiles of the German mini-cases: mostly, management and ownership are shared by less than 5 shareholders, who are usually related, and the farm work is run by means of 10 to over 60 employees (depending on the total farm size, for which a large range was observed in this case-study compared to the other case-studies where farm sizes fell more into the same category). In these structures the prospective successor does not necessarily have to be tied to the family to take over the business, in other words, the family model is not mitigating typical entry barriers like it does in the other case-studies. Yet in practice, farm transfers to family members was common throughout the mini-cases.

The difficulty of recruiting properly trained and trustworthy employees is mentioned as a potential disruption for the future. Because of the dominance of hired labour in this farming system, respondents expect a recruitment crisis resulting from low attractiveness of the sector for the new generation due to low profitability relative to other career options. The current emigration towards municipalities with better services is an additional trend that respondents observe to impact the labour availability in the sector. Furthermore, negative representation of

agriculture in media is recognized as a cause for non-entrance in the farming sector. Land prices in the region are increasing. This combined with the labour problem means that most farmers in this case-study believe that they have reached their final capacity in terms of size expansion. Consequently, growth and development are planned to happen through optimization by implementing more efficient techniques, further mechanization and technology-driven diversification.

Additionally, the lack of long-term political vision in agricultural reforms is identified as a source of instability. The bureaucracy of the CAP is emphasized by the German respondents. For example, the application process for direct subsidies is seen as a nuisance and the actual outcome of the subsidies is not always perceived as a benefit, however, some mini-cases denoted dependence on CAP subsidies for farm survival. The respondents of this case-study pointed to the Pillar II of the CAP as the answer to strengthen the farming sector and to ensure the survival of smaller farms.

#### 3.4.2 Detailed report on case-study results

Many farms in the Altmark were founded from former 'Landwirtschaftlichen Produktions-genossenschaften' (LPG). These large companies with a massive amount of land and many employees were the typical farm type in the former GDR. They occurred as the result of different land reforms, where many farmers with small farms (had to) put their land into the LPGs and work for the LPG from this point. These participants of the LPG were both workers and owners. After the reunification in 1990, some of the LPGs were divided in smaller private companies and the owners were paid off. In other cases the LPG turned into co-operate farms ('Genossenschaften') or limited companies (GmbH) with nearly the same ownership structure as before. In these cases, the farm manager is (even if they hold company shares) not the sole owner but employed to manage the farm. Thus, succession functions differently compared to family farms and different factors are important for the succession decision.

#### Social factors

Regarding aspects of living in the countryside, we could show different pros and cons influencing succession decisions (e.g. lack of public services and living conditions on the countryside). Very likely, each person would weigh these aspects differently and it would be a personal decision whether to live in the countryside or not. Work in agriculture is normally connected to Country living. Most respondents emphasized that personal relationships to their neighbourhood are very important in rural areas because they strongly influence the daily life. On one hand, this can be perceived as a good thing and influencing succession decisions positively. On the other hand, some respondents described big problems in becoming part of this "local network" when they

enter farming business and moved in a certain region for the first time. So, the importance of personal relationships can also inhibit succession decisions. In most MCs, the farms offer open-door days/ farm festivals for the local people and land owners to keep in touch and foster acceptance for the farming business. Because of the importance of the personal relationship to neighbourhood, these events are emphasized as important both on farm- and private level.

Another main point for many respondents is the bad image of agriculture in media and society. According to their descriptions, that's mainly because of a lack of knowledge about agricultural correlations in society and the unfair and non-scientific media reporting. Some respondents told us, that they experience this as a personal attack. It can be assumed, that this has an impact on decisions for or against entrance in farming business.

The process of farm succession is mainly perceived as tedious and challenging. This perception has many reasons and not all of them are "social factors." Challenges could be in the knowledge transfer, tax or legal difficulties in handover of the company etc. But if the succession take place inside the family, or family aspects play an important role, very complex and personal feelings, relations and connections make this process even more complicating. Especially in these cases, a professional and comprehensive consulting was described as very helpful and important.

### Farm work

On a personal level, working in agriculture requires high personal efforts. Especially the need of nearly fulltime availability on the farm management level makes it difficult to maintain a work-life-balance and can easily lead to work overload. Furthermore, the earning opportunities on every activity level are described as below-average. All together this does not make it attractive to work in agriculture. However, nearly all respondents told us, that the versatile activities of agricultural work make the work field attractive. Some respondents even think that it would be generally unproblematic to find employees on every level of farm work, if the economic conditions would be better. According to that, economic conditions seem to be a very serious factor for farm demographics. Many respondents think, that a large farm size with increased profitability could reduce these negative factors, because the earning opportunities could be better and there would be enough money to pay more than one person on the management level.

The (Non-)availability of labour forces strongly influences farms in the Altmark. To cope with this challenge, different strategies were revealed.

One strategy is continuous employee training. Because there are often not many well skilled labourers available, some farms offer training and apprenticeship for unskilled labour forces. To meet the requirements of complex production processes and to remain at the cutting edge of

technology, continuous training is important. Because the young generation seems to be less tied to one farm compared to older generations, to invest in apprenticeship could be also risky for farms.

Furthermore, to get well skilled employees for tasks on management level, especially to find a successor, personal contacts seems to be very important.

Another strategy is the increasing mechanisation in order to become less dependent on the labour market. This also matches with the statement, that farm managers and successors perceive a high number of employees as unattractive. If there are very labour-intensive activities on the farm, e.g. dairy cows, the possibility to mechanise or change to a less labour-intensive activity could be a serious factor for an entry decision.

Young people who could take over a farm often do not feel well qualified for being a farm manager, because their studies don't prepare them for that in a good way. Some of them told us, that planning tasks and bureaucratic work before final takeover are good ways to prepare for entry. However, the presence of a former manager who can share their knowledge and give support can ease the entrance for successors.

#### Politics

Agriculture is strongly dependent on political decisions on the regional, national, and European level. Thus, politics strongly influence farm demographics and succession decisions. This can be observed in different ways.

One important issue for nearly all Mini Cases is the lack of political vision. Together with the strong dependency on politics, this creates a big uncertainty for farmers and potential successors. For example, large investments in stable buildings can be very uncertain, if the policy demands on livestock farming change. Even the CAP is perceived as discontinuous.

Another big issue is the increasing bureaucracy. Bureaucratic tasks consume a large part of the working time of farm managers. This bureaucratic workload narrows the motivation to enter farming business on management level.

According to the statements of most respondents, the current CAP forces the existence of large farm sizes, because they are necessary for lucrative production under the current circumstances and be able to meet the cross-compliance requirements. Smaller farms have to think about their possibilities to fit in this structure. If such a growth seems not to be possible, this can be a reason against succession.

The majority of respondents emphasized the need of decisions on the European level. If there are different requirements in the European countries, for example in environmental issues, this leads to economic pressure on farmers in countries with high standards. Furthermore, the respondents see the chance to implement high production standards only for the European agricultural sector as a whole.

To meet public goals, political intervention is necessary and desirable for most respondents. Because of the low prices for foods, public goods which should be delivered by agriculture (biodiversity, structured rural areas etc.) have to be paid independently. Therefore, the respondents see the necessity of a decisive strengthening of the second pillar of CAP. This could also give smaller farms a perspective for the future.

Regarding the CAP subsidies or rather the direct payments, the respondents do not see the direct advantage for producing agriculture in many cases. The subsidies much more benefit consumers and land owners through low consumer prices and high land prices. Moreover, the subsidies are in the best case just compensating time and money to meet the increasing bureaucratic requirements

Another important factor which can negatively influence the decision to enter farming business is the lack of governmental support in the setting-up phase. This support should be both financial and advisory. A support of family foundation would be highly desirable for many respondents as well. Contrary to other branches, financial and social support regarding maternity or paternity leave is missing in the agricultural sector. This can in worst case force young people to decide between founding a family or enter agricultures.

#### Agricultural markets

The sales conditions for unprocessed agricultural products are perceived as unfavourable for our respondents. For many products, e.g. milk, the retail structures are very rigid which can make it unattractive to enter farming business/ take over a farm.

In some cases, direct marketing could be an interesting opportunity. However, this did not function for every farm. Low purchasing power in rural areas or the necessity to invest in technology like milk vending machines can be factors which impede this step.

Regarding the unfavourable sales conditions, diversification seems to be an important tool for risk management. For example, some respondents describe the entry in bioenergy, for example with a biogas plant, as very successful, because with the Renewable Energy Act (EEG) the prices for the produced energy are politically fixed for several years.

Especially the successors we interviewed, perceived livestock farming more challenging than crops. Reasons for that are high labour intensity which is related to having livestock, and therefore a dependence on the (prospective) labour market. Other problems in livestock farming, the respondents see in unfavourable sales conditions, e.g. low prices for livestock products. Nevertheless, many respondents spoke about emotional ties to livestock, for example the feeling that livestock is a natural part of farm or they like it to work with animals in general.

Two other main issues concerning agricultural markets are financial capital and high land prices.

Because of unfavourable sales conditions, some farms aren't able to generate enough money to finance necessary or future oriented investments themselves. However, bank support depends on the good economic situation of the farms. If that's not present, the absence of enough financial capital can cause existential problems.

Financial capital is even more important because of the very high purchase and lease prices for land, which are important barriers for growth.

For both challenges, lack of financial capital and high land prices, private investors could be an interesting perspective for some respondents. On the one hand, they could support investments and for example get a profit share. On the other hand, they could purchase land to invest their capital, and lease it out to the farms for a long time. To lease the land for long periods instead of purchasing it, is much more attractive for many respondents because it did not burden the farm with debts for a very long time.

A main opportunity for growth occurs, when other farms in the region exit. Regarding this, different options like purchase or lease of the land could be possible but the prices would be high anyway. As an alternative to this, some respondents told us, that they cultivate the land of farms which exit (contract farming). The land remains in the hands of the former farmer who pays for the service or the harvest is shared. This could be an option to use the capacity of machines and improve its own cost structure.

Because many large farms in the Altmark were founded after reunification in 1990, the majority of founding members will retire in the coming years. Especially when the company is very valuable (e.g. high amount of owned land), handover of company shares could be a dangerous situation for the company. To cope with these challenges, some co-operative farms adapted their rules of procedure or want to check possibilities to do so in the near future.



### Links between selective codes

A comprehensive consulting is viewed as very useful/desirable for the succession process. If family members are included in this process, e.g. on family farms, that can cause problems and challenges as mentioned previously. Another argument for a good consulting could be the statement, that potential successor don't feel well skilled for managing a farm after their studies. Especially if there is no former farm manager, because he passed away or young people want to found a new farm, the possibility for professional consulting could be an important factor for entrance. Also the perceived lack of governmental support in setting-up phase shows, that comprehensive consulting could be a crucial factor regarding demographic change and succession decisions in agriculture.

Another important factor for the succession decision is the presence of barriers to innovate. Most (potential) successors would like or even have to implement changes on the farms to adapt the farm to present conditions and expectations for the future. If this is not possible, or seems to be too difficult, this inhibits the motivation to take over a farm. Possible barriers regarding aspects of farm work could be a tight labour market or a high average age of employees (which is perceived as a barrier to innovate in most cases). A lack of financial capital and high land prices are barriers to innovate as well. Even the lack of an agricultural vision in politics and society could be an important barrier to innovate, because for some respondents, the future of the agricultural sector in Europe appears quite unclear which makes it extremely difficult to create a good operating strategy.

## **3.5 Hazelnut farming in Viterbo, Italy**

### **3.5.1 Brief description of case-study context**

The Italian case-study focuses on the hazelnut production in Viterbo, Northern Lazio. Italy is the world's second largest producer of hazelnuts (after Turkey). The case-study region counts approximately 6000 hazelnut farms, of which the lion share (i.e., 89%) is represented by small farms with 2-10 ha; medium-sized farms, with 10-50 ha, constitute 10% of the total; and large, highly specialized non-family farms with more than 50 ha, account for the remaining 1%. Thus, the mini-cases chosen for this case-study are predominantly small- to medium-sized, family-owned enterprises, organized in simple partnerships. Most of these mini-cases examined a phase within the succession process (setting-up the farm succession plan, being in the middle of the farm succession process, finalizing the last steps of the succession process, etc.), which illustrates a sector-level trend that is in stark contrast with general farm labour dynamics at the national level. The high profitability of this particular sector on the one hand, and the forthcoming

generational renewal on the other hand, characterizes this case-study as an example of a diverging agricultural sector from the dominant trend in the European agriculture (where the farmer population is also skewed towards high age, but the expectancy of family farm successions is lower).

Recently, the intense mechanization trend the sector experienced drove the main demographic changes, resulting in a substantial reduction of the demand for labour. Hazelnut cultivation is a profitable business and therefore, this particular agricultural sector remains attractive for future generations. At the same time, respondents perceive the good economic situation as a pushing factor for further intensification of production, which was as indicated to be a potential future challenge. Indeed, this trend could lead to a monoculture dominating both the economic and environmental landscape, resulting in the lack of diversity in the farm business on the territory.

Market risks are constituted by the competing Turkish hazelnut production, often blamed of generating harsh competition situations for the Italian hazelnut growers, and potentially threatening the currently favourable economic sustainability. Related to this, the Italian case-study particularly emphasized a shift towards more sustainable agricultural practices. The drivers for this shift are mostly recognized by young respondents as environmental risks, health risks for farm operators, and the possibility of gaining a price premium in a more lucrative market (e.g. organic production). Hence, the aforementioned generational renewal occurring in this case-study comprises both a demographic change and an alteration in values that are associated with the farmer's identity. While structural change used to be mainly driven by economic profitability, the next generation of farmers seems to implement innovations considering also the ethics of agricultural production, especially towards the environment.

Farmers invested or plan to invest in technologically innovative strategies, including irrigation systems and management instruments for pest and disease control. As environmental risks must now be captured by the primary producers, some respondents are concerned about the increasing power imbalances throughout the value chain. Hazelnut producers see the on-farm processing of harvested hazelnuts as an interception to add value and obtain a fairer and higher revenue from their activity. In this context, many farmers indicate the possibility to start primary processing independently (e.g. shelling and drying), or engage in industrial processing phases (e.g., roasted chopped hazelnuts, hazelnut paste and cream) carried out by cooperatives, as a solution to receive a higher selling price.

### 3.5.2 Detailed report on case-study results

Generational renewal represents the main demographic change, together with the change regarding the labour force happened decades ago, when mechanisation came into play,

dramatically reducing the need of agricultural workers. Generational renewal is characterized by young family members taking over, with the old generation of farmers carrying out complementary roles, acting like land-keepers for future generations. When there is no legacy, the possessors sell the land, not randomly but according to her relationship with some other farmer, this being a trust-related decision. Looking at already occurred demographic change, especially regarding the labour market, the hazelnut mechanisation marked a fundamental step: development of mechanical harvesting determined a tremendous decreasing in labour demand.

Structural changes are mainly described by the expansion of hazelnut surfaces, pursued by the lion share of hazelnut growers. More sustainable production practices are also at stake, often driven by environmental and health-related issues, but also for entering in a more stable, niche, market. The mechanisation process, despite started decades ago, is still undergoing nowadays. Finally, farms are pursuing diverse instruments of diversification, that is, horizontal (i.e., crops diversification), and vertical (i.e., activity diversification, sometimes beyond the mere agriculture-related activity, or undertaking further processing steps on-farm).

Once defined the main changes occurring and occurred in the sector, one may ask what drives, and drove, such changes, though trying to unveil what are the drivers behind those changes. This relates to the second (ii) RQ, taking the selective code of “Drivers” (see appendix B). Within such comprehensive concept, we tried to disentangle the reasons that pushed farmers to make decisions, explaining the main forces behind the changing processes, for both demographic and structural changes. Interestingly, there is a non-negligible presence of non-monetary motivations driving farmer’s choices and demographic changes. Often, the strong emotive bond between people and their land pushed them to take over in their inherited farm business, despite already employed: “We are not farmers, I took over the land for a sort of vocation I have with agriculture, if one looks at the economics of this, it would be better off doing other things” (MC6,R1,male).

Moreover, ethical reasons, such as respecting the environment and the territory, or being aware of the importance of healthy working conditions, drove the farmer towards more sustainable practices: “When converting, one should also consider those indirect effects that are non-monetary but should be considered like that, like taking care of the environment and the worker’s health” (MC6, R2, male). Many times the decision of continuing the family farm activity – especially when the heirs are already employed in other sectors – is dictated by emotions and feelings, rather than economic reasoning: “if I had not been a farmer I would have been a horse-police officer, a part of me still thinking about that, even these days, because it would have been far easier” (MC7, R1, male).

Such behaviour is reflected also in structural decisions, especially those related to the choice of undertake more sustainable production processes: “The organic produce is paid more but does not compensate the production loss it features when compared to the conventional one [...] I lived here, and I have a concise idea about using agrochemicals” (MC6, R2, male). Concerning the demographic change, new generation contribution is essential, in the sense that they are willing to continue the farming activity. Furthermore, they bring in new information, values, and awareness: “Going organic is an ethical decision overall”, and, “I think you should [...] improve the quality of your working life and that of your workers, is not always about increasing productivity”). Their role is pivotal also concerning structural changes, which are often directly managed by them: “When I became together with my brother the legal representative of my family farm I carried out all the conversion process to go organic” (MC1, R2, male).

Regarding the narrowed labour market, innovation, especially mechanisation, played a pivotal role: “According to my father’s memories, harvesting usually started in September and ended in December, deploying 10-20 people to do the job. With mechanization, this reduced to three people.” (MC5, R1, male). However, to improve farm efficiency, the mechanisation process is still present in the hazelnut sector. Potential future on-farm processing would boost the local demand of labour: “We have on-going talking with the Local Government to find the right facilities for starting the processing of the hazelnut. This will require more workers.” (MC6, R1, male).

The high profitability of this permanent crop determined a demographic change in the sense that oldest farmers quit their job for dedicating fully to farming: “My father was a baker since that was the activity of his father-in-law, and the agricultural activity was secondary. Then, he decided to dedicate fully to farming; it’s been ten years now” (MC5, R1, male). At the same time, it represents a powerful hook for new generations. On the other hand, it engendered the development of monoculture on the territory: “It would be great to have not just hazelnut, but also olive-trees, vineyards, but it would be not profitable right now. We were like that ten years ago” (MC2, R2, male).

Market agents, consumer preferences, and demand are the elements shaping the (structural) changes occurring to the hazelnut farms: organic conversions take place also because they expect to receive higher prices and enter in a more stable market, and land expansion is to face the future price drop due to the increase in production. “Our farm constantly grows 4-5 ha per year [...] we will keep straight with this strategy because I believe that in the future the price is going to fall and only the largest farms will survive”. However, often this strategy is carried out also to employ both labor force and machinery fully.”

Finally, extreme climate events, especially droughts occurred in the past three years, prompted some structural (minor) changes in farms, such as investments in the irrigation system.

The third (iii) RQ has been addressed by the selective code “Process” (see appendix B). It explains how the change took or takes place, describing how usually the land (and the farming activity) is passed over (i.e., mainly by inheritance), heightening the importance of personal past experiences for a smoother process, and, on the other hand, how tradition and culture may hobble the process of changing, especially regarding structural changes (e.g., converting to different production techniques). Furthermore, the process of passing over is not always completed, in the sense that sometimes heirs may want to sell the land without continuing the farming activity. Interestingly, it came out how the hazelnut spread in the territory in the past, when many farmers sold their lands to dedicate to more remunerative jobs in the industrial and service sectors. The high land offer flattened the price, encouraging hazelnut growers to buy hectares. The new generation is often involved in the farm management legally, i.e. by officially entering in the society; however, is also common they are involved without adhering to any legal form, but with a clear idea about their future in the farm. Some farmers did not adhere to the available CAP measures, without this hampering the process of change. The rooted and traditional belief in the territory represents a serious obstacle to change, mainly for those structural changes the new generation see as innovative and fundamental: “it is hard, they have the same idea for over 60 years, and they do not want to change! My grandfather, he has been doing the same thing for a long time, and he will continue to do it like that, there’s no way I can change his mind!” (MC3, R1, male). On the other hand, it works as a facilitator “[...] since I was young I was involved in the field activities. I come from a village with an agricultural vocation, where half of the population is involved in the farming activity” (MC4, R2, male), together with the attitude of the old generation “[...] of course, they were involved into my farm since they were kids” (MC1, R1, male). Nevertheless, happens that the taking-over process is not easy because of the past misconduct of the old farmer: “[...] It was not easy, we inherited many debts too” (MC7, R1, male). Finally, it seems that being part-time farmers may induce to slower, less significant and less risky changes.

Two more main selective codes came out from the analysis, namely Enabling and Constraining Factors for Change, respectively. These describe all those factors playing (or potentially playing) a role in shaping the decision change, hobbling or smoothing the process.

Constraints to change brings together all those challenges and risks the interviewees quoted as of importance for their day-to-day farming activity (see appendix B). They recognize the existence of climate change, which entails severe risks for their activity: “[...] Main risks are related to extreme natural events [...] due to climate change” (MC6, R1, male) (i.e., hail, (unexpected) spring frosts, heavy rain, drought, wild animals (i.e., squirrels, wild boars, and dormouse), and health-related



risks (i.e., chemicals, dust, noise)). Sometimes, high costs and inefficiencies have halted some structural changes: e.g., insurance is hampered by the high premium price they should pay, whereas the organic conversion is not fairly paid the price differential. Regional governments, PO's, and other agricultural-related service centres are responsible for some weaknesses concerning the process of changing, as well as the change itself. Research centres are not providing good bridging-activity with the agricultural sector, without focussing on the needs of the hazelnut growers, as well as the problems they face and that still have no scientific solutions: “[...]for going organic one would need scientific studies, experiments, which are not supplied by research centres yet” (MC1, R2, male). PO's and public institutions do not offer proper technical support. The CAP plays a pivotal role in this negative aspect, mainly due to payment delays (probably caused by Regional and National bureaucratic inefficiencies), which cause asynchronism of investment disbursement and public subsidies: “[...] since 2015 no payments have been supplied for organic conversion [...] and this is a huge investment, it dries out farm's finances” (MC1, R2, male). Some interviewees highlighted how CAP functioning is not very well aimed for supporting in need farms, since it gives more financial support to “rich” farmers: “I've never received public subsidies, I'm against this kind of measures. I'd prefer a heavy tax exemption and direct aid to in need farms” (MC7, R1, male). Furthermore, some others point to the need of lightening the CAP bureaucratic apparat to ease farmers' participation: “We do not adhere to any public measure, too much bureaucracy with biblical times” (MC3, R1, male).

The price volatility is the major economic risk farmers fear. They are aware that this risk is determined by Turkey's conditions, namely the real exchange volatility and the volume of hazelnut harvest, being the largest hazelnut producer worldwide. Furthermore, they claim the price being negatively affected by the exertion of market power downstream, i.e. industrial processors. Concerning societal risks, local folks may try to prevent the increase of pollution and health-related risks (e.g., dust, acoustic, chemicals, general environmental concerns), resulting in potential limiting regulations over chemicals and agricultural activities: “Last year some Municipalities thought to block the harvest since it was dry and more dust would be produced” (MC2, R1, male). This consistent and perpetual economic uncertainty may entail a negative impact for investments and, thus, innovation: “[hazelnut] market is a peculiar one, is tough to implement any long-term planning. Long-term investments are risky, we do not know when and how to invest, one campaign you're good, the next one you go down to hell” (MC1, R2, male). Traditional knowledge is largely seen by the new generation as serious constraint. More sustainable-production techniques, e.g. organic and IF, are not well-seen or spread either, entailing further difficulties for innovation and change: “Each Municipality has to decide who, between the organic and conventional producer, has to sacrifice her 10 meters for non-farming or non-treating, respectively. I doubt the discussion will be peaceful” (MC1, R1, male); “Others don't believe in the



organic conversion, and they do not respect who decide to do it” (MC1, R2, male) Such behaviour also represents an obstacle when gathering information and special products procurement, since the low demand generates a scant offer.

The last selective code that blooms from this analysis is “Enabling Factors to Change”, collecting those elements farmers recognized to support the changing process (see appendix B). When a challenge is detected, it seems that farmers activate to eliminate or at least mitigate such risks, which work as enablers for change and innovation. For this reason, risks and challenges spot as constraints are also enablers, pushing farmers to put in place strategies to secure their activity. Indeed, farmers adopt strategies for buffering or eliminating climate risks: drought have been faced by installing irrigation systems, cabin-provided machinery and safety work measures have been adopted to reduce work-related risks (i.e., agrochemicals, dust, and noise exposure), and insurances contracted for other negative climate events (e.g., hail). Additional agronomic strategies such as different varieties of hazelnut, and using sulfur and copper immediately after a hail event to prevent further pest disease, are constantly implemented by farmers. On the economic side, strategies range from the development of on-farm processing to tackle the bargaining power problem and adding value to agricultural production: “[...] going beyond the mere production, that is calibration and unshelling, would allow us to reach more stable markets and reduce risks” (MC1, R2, male). The PDO enhancement is seen as a positive value-adding institutional strategy: “We should not increase the productivity but the quality in detriment of the quantity! PGI, PDOs, [...] to eliminate the price volatility related to the conventional product” (MC7, R1, male). Organic conversion also is somewhat a strategic diversification to “[...] benefit from higher prices” (MC1, R2, male). Vertical diversification of farm activities is also welcomed, that is offering rural tourism activities, managing public green areas, or work as a contractor.

Temporal arbitrage and farm enlargement are also strategies used to receive better prices and reduce economic risk, respectively: “We should use storage to postpone the selling activity” (MC1, R2, male), “[...] we will continue to expand, only large hazelnut producers will endure in the future” (MC3, R1, male). Other more general strategies are applied, from keeping high liquidity rates for sudden shocks, to diversify the income (particularly for part-time farmers). CAP payments are also seen as risk-mitigator: “[...] whenever the price goes down a certain threshold you can account on the EU price integration” (MC1, R2, male). The structure of the farm influences positively the change. Shared decision-making process with family members and workers seems to be quite widespread, overall when the new generation is involved in the farm business: “[...] I study, I analyse the situation and propose the change to my father, my brother, and the worker, and according to their experience we decide” (MC1, R2, male). Furthermore, the participation to farmers' networks (i.e., PO's, Local initiatives related to the hazelnut, Seminars organized by research centres and other agents of the supply chain) smooths the process of changing: “[...] The



day of the hazelnut, meetings organized by PO's and the BIODISTRICT, those organized by the local Agronomists...I had the chance to speak with organic farmers, also with farmers from the Piedmont region...Our choice to change started from there" (MC1, R2, male). Moreover, they enhanced the role played by PO's in managing CAP-related practices, providing economic support, and information dissemination, together with other local agricultural service centres, appreciated for their administrative supports to labour-related bureaucracy. Local machinery-suppliers are also conceived as a determinant for the farming activity since they provide technical assistance, and work close to farmers to cover their "mechanical" needs better. CAP subsidies have been proven to entail a positive role for changes particularly to support farm investments and the start-up of young farmers facilitate the change. Rural Development Programme's measures, aimed to support young farmers entry, are welcomed by the agricultural sector, supporting demographic changes such as the generational renewal process. Other CAP measures are used for supporting structural changes. Mainly agro-environmental measures for the organic conversion, and measure 4.1 for machinery and buildings, and, thus, innovation. Finally, both negative and positive experiences, at both personal and farm levels, facilitate on-farm changes. For the sake of clarity, again referring to the organic conversion: "[...] the illness of my wife made me aware about health-related risk, and so that of related to the extensive use of chemicals" (MC1, R1, male). Positive results for similar or equal changes in different (owned) farms, helped in smoothing the changing-process: "[...] results eventually proved I was right in converting since exporting organic oil paid much higher prices" (MC1, R2, male).

### Codes' Relationships

There are different interrelated relationships among all the codes that blossomed from the analysis. A general picture is given in Figure a. In the following paragraphs, we tried to disentangle and explaining the central significant four relationships we found among them.

The demographic change is described in our case-study by the ongoing generational renewal process. In turn, this is mainly the source of further structural changes occurring in the sector, such as the conversion to more sustainable production techniques, since new generation brings in a new vision, with ethics playing a significant role in shaping decisions. Tradition and culture is an important player, an enabler and a constraint at the same time. CAP measures have been extensively discussed by interviewees, who highlighted both its positive and negative aspects concerning changes. Apart from ethics and values, farming decision is still significantly driven by economic elements. The high profitability of the sector attracts new generations, being a factor convincing them to continue in the farm family business. On the other hand, this feeds a monocultural environment, where little room is given to other crops due to their low profitability. Climate change is a reality for hazelnut growers, and this also drives structural changes. Personal

experience seems to entail a pivotal role in the decision making the process for changes, both positive and negative, also affecting the smoothness of the changing process.

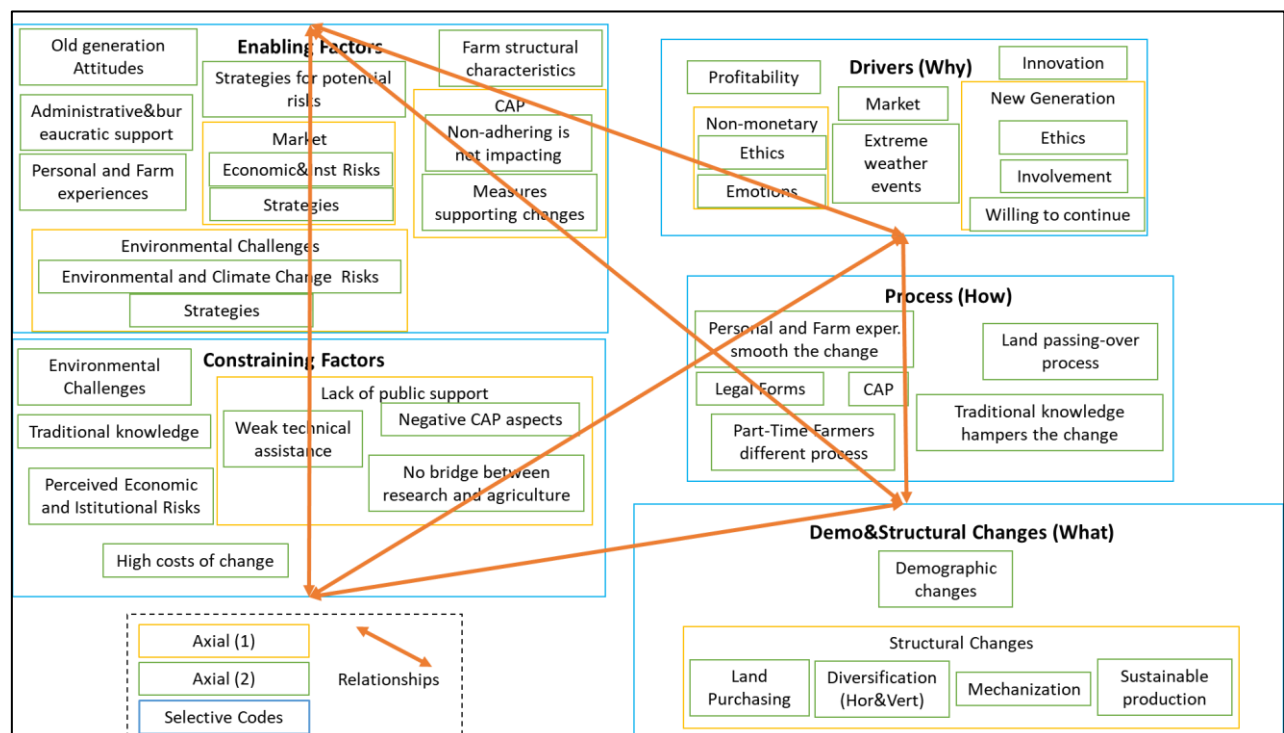


Figure a – Overall General Relationships

### The ongoing generational renewal process and its implications for further structural changes

One main demographic change has been spotted during the interviews that is there is a generational renewal process undergoing. First and second farmers' generations are gradually phasing out the farming activity to give room to new generations, who, in the lion share of cases, are represented by family members (i.e., nephews and sons&daughters). Indeed, the well-rooted farming tradition in the territory permits the youth to "breath" agriculture since their earliest stages, creating a sort of bond between the person and his land. This leads to the involvement of young generations in the farm business since a young age, encouraging the continuity of the

family farm business. At the same time of being a driver for taking-over, their active and early involvement shapes structural changes, especially when concerning conversion towards more sustainable practices and innovative ideas about techniques, farm diversification, and integrating economic and financial information in the day-to-day farming activity: *“When I inherited the land I started to build something different, from agri-tourism activities to on-farm processing to produce the cream... I added value to my farm activity!”* (MC7, R1, male); *“First thing in the morning I know how the Turkish rate exchange is going, how much they are harvesting because they are the most influential thing in the hazelnut market.”* (MC7, R1, male) Their involvement is however highly appreciated by the older generations: *“My son deals with bureaucracy, which I think is the hardest and important part [...] and he takes decisions about when to sell, he looks at financial markets [...] his role is crucial to me”* (MC1, R1, male).

Their ethics and values are different to those that characterise the oldest generations that are, for a great extent, focused on productivity. Indeed, new generations are mainly responsible for the increasing conversion to the organic farming: *“When I became together with my brother the legal representative of my family farm I carried out all the conversion process to go organic [...] When converting, one should also consider those indirect effects that are non-monetary but should be considered like that, like taking care of the environment and the worker’s health”* (MC1, R2, male). However, if on the one hand agricultural tradition and culture is an enabling factors facilitating the youth to remain in the sector, on the other hand it hampers structural changes: *“My grandfather, has been doing such thing for 60 years, he continues to do it in that way, even though I’m his nephew I really struggle to convince him to change”* (MC3, R1, male), and *“Others don’t believe in the organic conversion, and they do not respect who decide to do it.”* (MC1, R2, male) Regarding process, this makes it more difficult and long: *“[...] it has been hard, we worked a lot on it. Fortunately, we had another similar experience in the other farm [...], and now we export to Japan at higher prices. That is what helped in convincing my father”* (MC1, R2, male). However, when the new generation of farmers is strongly involved in the farm business, the old generation seems to understand that not all traditional and established techniques are right and successful, and they start to look positively at new ways of production. That is to say, positive results (mainly coming from new generation decisions) are carving these rooted beliefs, as described by one of the old generations when referring to organic conversion: *“Going organic has been the major challenge. I was not positive about it, everybody, my cousin too, says it would not be sustainable [...] Now I’m happy with the choice we made [...] I’m giving suggestions also to other farmers to pursue this type of production.”* (MC1, R1, male)

Main relationships: The on-going demographic change is the primary driver for structural changes occurring in the hazelnut sector. Indeed, looking at the expansionist strategy most farmers are pursuing, is because of the need for guaranteeing the future economic sustainability of the farm

for when the new generation will eventually take over. Positive factors supporting this demographic change are at the same time constraints hindering structural changes since rooted agricultural tradition cemented some beliefs that are difficult to change and eradicate from the new generation point of view. This also affects the process of changing, making it difficult and long. Nevertheless, despite the hardship of changing, it seems that when the change is successful, the old generation farmers accept and understand it, carving the traditional belief by word-of-mouth. Looking at the past changes occurred in the sector, one might notice that in one case, namely the mechanisation process, a structural change drove the demographic change in the sector: machinery pulled out many agricultural workers from the hazelnut sectors.

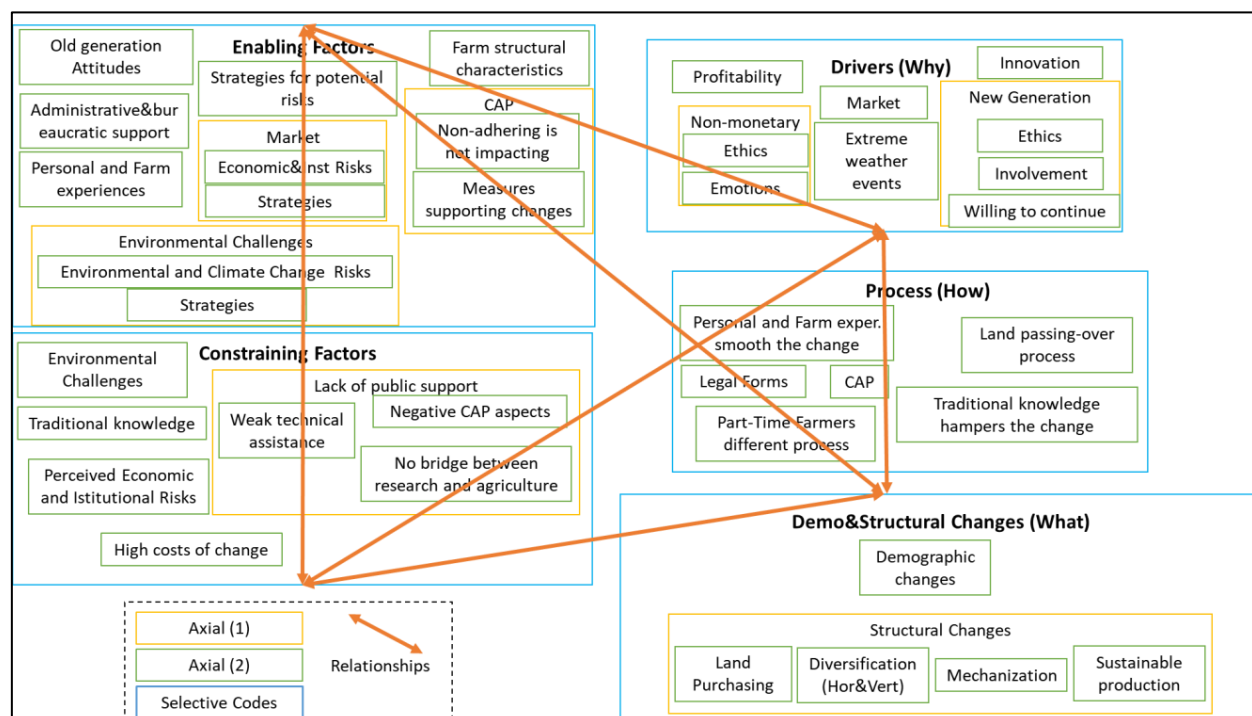


Figure b – Graphical Relationships, Generational Renewal.

### The role played by CAP measures on changes

Widely mentioned during all the interviews was the role played by CAP measures. When asked, or when brought out spontaneously by interviewees, CAP entails a negative nuance on the farm activity, primarily for the sluggish of payments concerning organic conversion and general on-farm investments (i.e., facilities and machinery) generating the dealignment of financial disbursement for farm-investments and the public subsidies owed: *“Adhering to the RDP measures will be helpful whenever the payments will be supplied, it’s three years now that I*



*claimed for this support”, and “[...] since 2015 that no payments have been supplied for organic conversion [...], and this is a huge investment, it dries out farm’s finances” (MC1, R2, male). Under this point of view, CAP can be enrolled as a constraint, since this delay in payments may prevent farmers to adopt changes, fearing a financial problem, or fearing the bureaucratic process: “We do not adhere to any public measure, too much bureaucracy with biblical times” (MC3, R1, male). There is a link between the ethics and values of the new generation and the decision of non-adhering to any CAP measures “I’ve never received public subsidies. I disagree with this kind of public aid, I would support only those farms that are really in need. I’d prefer a heavy tax exemption and direct aid to in need farms” (MC7, R1, male). However, farmers recognise the importance of such measures when they come to support both demographic and structural changes, particularly to support farm investments (measure 4.1), organic conversion, and the start-up of young farmers. However, their absence does not significantly interfere with the choice of changing: “[...] well I think that if I were in need of money at the time I would have asked for the young start-up aid and initiated the bureaucratic actions” (MC3, R1, male), and “I renewed many types of machinery, bought new ones too, and I’ve never asked for any public support...Personal choice” (MC7, R1, male). Furthermore, farmers sometimes think of CAP measures as a sort of risk management tool “[...] whenever the price goes down a certain threshold you can account on the EU price integration.” (MC1, R2, male) CAP also enters as a potential institutional strategy for tackling some supply chain problems (i.e., market power downstream) and economic risks (i.e., price volatility, dependence on the Turkish market and real exchange rate), as they often cite PDO and PGI for adding value and eliminate some uncertainty: “[...] PGI, PDO, recognizing the quality and be more respectful to the environment, we should do that [...] also to eliminate the price volatility related to the conventional product” (MC5, R2, male; MC4, R2, male). Finally, CAP enhances the role of Producer Organizations (PO’s) and their membership rate. Indeed, farmers mainly rely upon this form of associations to obtain public financing for structural investments and being helped during the CAP claim procedure: “[...]adhering to one PO’s, the CAP claim is free of charge, one can do soil analysis with significant discounts, and machinery purchase is a 40% less costly” (MC1, R2, male).*

Main relationships: CAP enters in many different aspects of both demographic and structural changes (Figure 3). On the one hand, it entails positive results regarding the generational renewal process and structural on-farm changes by providing financial support and acting as a risk management tool; on the other hand, the sluggishness of the relative payments may constraint changes, since it causes a dealignment between the farmer’s financial disbursement and the supply of the public subsidy. Interestingly, the bureaucratic apparat of CAP-related claims, seen as a constraint as well, pushes farmers to participate in PO’s because of CAP-related services they offer, empowering their role as enablers for changes. Finally, whether or not farmers adhere to



CAP measures as no significant effect on the decision of changing, cementing the idea that CAP is not a driver for change.

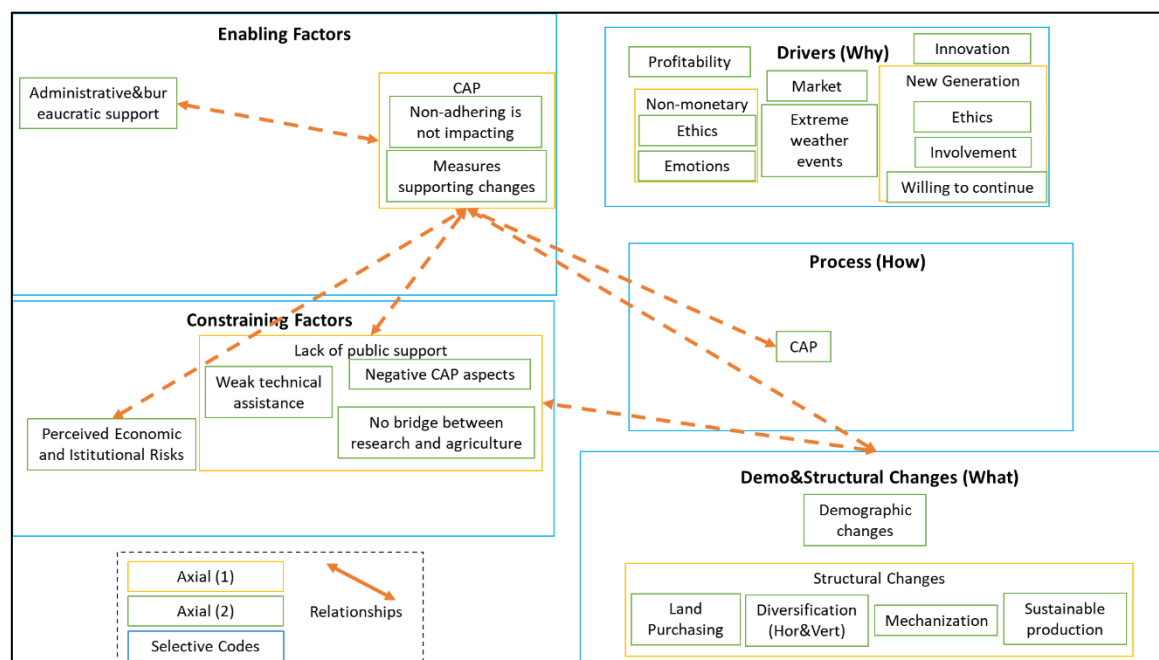


Figure c – Graphical Relationships, CAP Measures

## Economic and Environmental Factors are significant elements shaping changes

*The high profitability of hazelnut crop plays a pivotal role in changes*

The high profitability of hazelnut crop plays a pivotal role for demographic and structural changes, besides representing a constraint for further changes. In the past, farmers quit their job for dedicating fully to farming: *“My father was a baker, since that was the activity of his father-in-law, and the agricultural activity was secondary. Then, he decided to dedicate fully to farming; it’s been ten years now”* (MC5, R1, male). At the same time, it represents a powerful hook for new generations, increasing their willingness to continue into the agricultural sector. On the other hand, it engendered the development of monoculture on the territory: *“It would be great to have not just hazelnut, but also olive-trees, vineyards, but it would be not profitable right now. We were like that ten years ago”* (MC5, R1, male). This is also due to market agents, consumer preferences, and demand, which are elements shaping the (structural) changes occurring to the hazelnut farms: *“Is the market that decides what to (not) cultivate, my father was very sorry to remove our olive-tree and our vineyard ”* (MC5, R1, male). Regarding the strategic decision to diversify, farmers are aware that *“[...] there is a high consumer demand of a healthy, safe and local product”* (MC7, R1, male), and *“[...] We would like to store, toast, and wash the hazelnuts, making creams,*

*other processed by-products...The demand exists, it would be an excellent remedy” (MC1, R2, male); “[...] going beyond the mere production, that is calibration and unshelling, would allow us to reach more stable markets and reduce risks” (MC1, R2, male) .*

The organisation of the supply chain also acts as a constraint on the one hand, and as an enabling factor on the other one: *“The high quality-standard the confectionary industry is pursuing and maintaining is at the detriment of more healthy and environmental-friendly agriculture. With lower standards, one could switch to more sustainable practices without fearing the qualitative-depreciation of the product” (MC7, R1, male); “[...] the confectionary industry flattens the price, we need competition in that chain of the market.” (MC7, R1, male)*

Organic conversion seems to take place often because of the expectation of higher prices: *“I went organic because I am quite sure that the price differential will increase in the next years, guaranteeing a more stable market” (MC1, R2, male)*. Besides representing a powerful enabling factor, economics may also be seen as a driver for structural changes. One of the main concern for farmers is the price volatility, especially potential price drops in the future. This fear derives from experience, but primarily because of the expansion the hazelnut sector is featuring (which is largely acknowledged by farmers) will have negative impacts on prices. However, purchasing land for farm enlargement is one of the main structural changes nowadays, and it is widely undertaken as a strategy for cost cushioning, and, paradoxically, to buffer future price plunges: *“[...] we will continue to expand, only large hazelnut producers will endure in the future” (MC3, R1, male), and “[...] with this rate of land expansion, little farms will disappear soon.” (MC3, R1, male)* As a constraint, the general economic uncertainty may hamper new investments, since *“[...] we do not know when and how to invest, one year you earn good, the next one you go down to hell” (MC1, R2, male).*

#### *Climate change entails significant risks for the hazelnut production*

Quite all the interviewees acknowledged that climate change exists and it entails significant risks for the hazelnut production: *“[...] Main risks are related to extreme natural events [...] due to climate change” (MC6, R1, male)*. Most common risks hazelnut growers are facing relates to hail, (unexpected) spring frosts, heavy rain, drought, wild animals (i.e., squirrels, wild boars, and dormouse), and health-related risks (i.e., chemicals, dust, noise).

They face day-to-day environmental risks, recognising that they are often related to climate change since it is something they did not experience in the past: *“last year’s draught was impressive, impossible to think to manage it without irrigation” (MC5, R1, male)*. As afore-described, this drives some changes in the farm, and at the same time can be a constraint, since production losses hamper the keenness to invest. However, they also boost changes, since

farmers already adopted some strategies for buffering or eliminating climate risks. Drought has been faced by installing irrigation systems, cabin-provided machinery and safety work measures have been adopted to reduce work-related risks (i.e., agrochemicals, dust, and noise exposure), and insurances contracted for other adverse climate events (e.g., hail). Additional agronomic strategies such as different varieties of hazelnut, and using sulfur and copper immediately after a hail event to prevent further pest disease, are implemented continuously by farmers.

Main relationships: there is a very tight and indissoluble bond among what is changing in the farm' structures, strategies applied for managing economic risks, and factors generating such uncertainty (Figure 4). The expansion is mainly seen as a negative factor as it will flatten the hazelnut price, but at the same time is one of the main structural change occurring in the sector, mainly because a strategy to reduce actual and future economic risks. Supply chain inefficient functioning may be a constraint on the one side, by flattening prices, but also a factor pushing farmers to find a solution, and, hence, changing, for reaching niche markets or competing in different markets by processing the hazelnut on-farm. The same logic is applied to environmental challenges, which sometimes represent a constraint since production losses do not boost investments, but sometimes prompted changes in the farm by building new facilities for overcoming or reducing such risks.

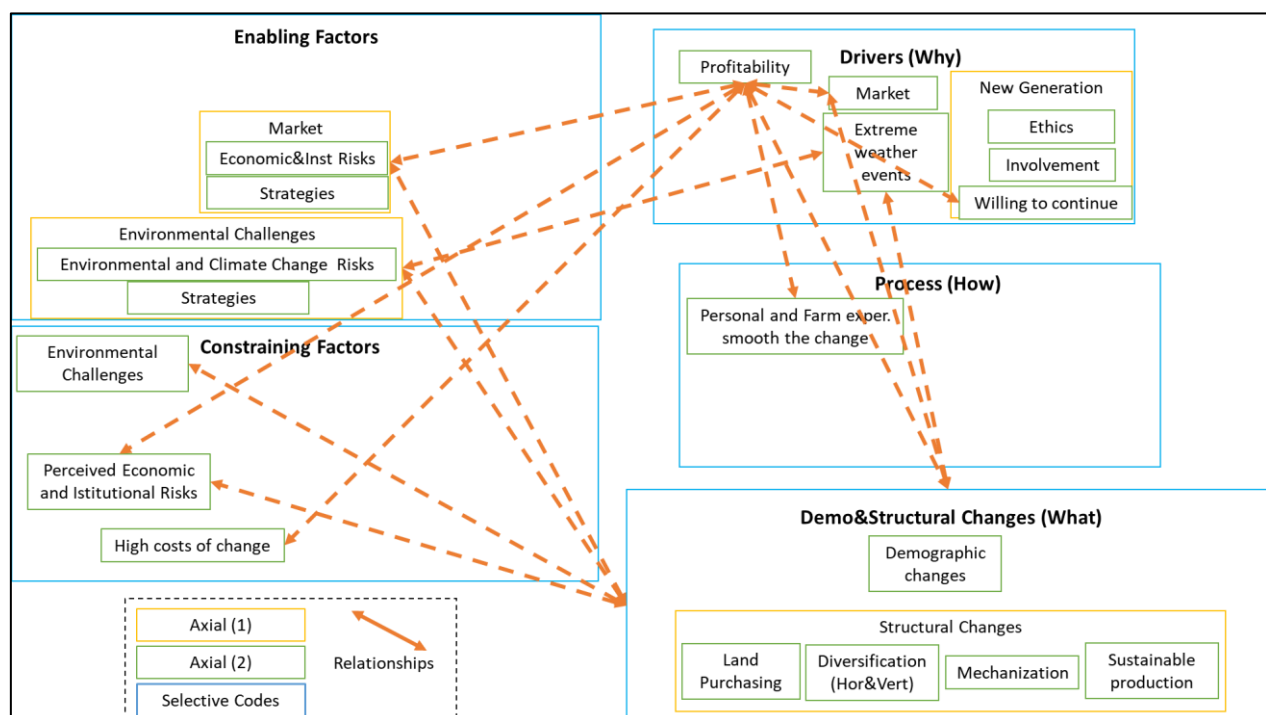


Figure d – Graphical Relationships, Economic and Environmental Factors.

## Personal experiences play a key role

On the same line, personal experiences play a key role in shaping decisions, and, hence, changes, and facilitating the process of change. These relate both to farming-experience, that is by applying the same decisions already applied in other (owned) farms, and life-experience, such in this example: *“When my wife fell ill, I became aware of health problems, and found myself in the situation in which I had to argue with my neighbour for the chemical he was using!”* (MC1, R1, male). Regarding process, previous knowledge about both administrative and bureaucratic procedures facilitates the taking over process as well as other structural changes, such as the organic conversion and land purchases.

Main relationships: personal and farming experiences, both positive and negative, are determinant for the process of changing and to adopt the change itself (Figure e).

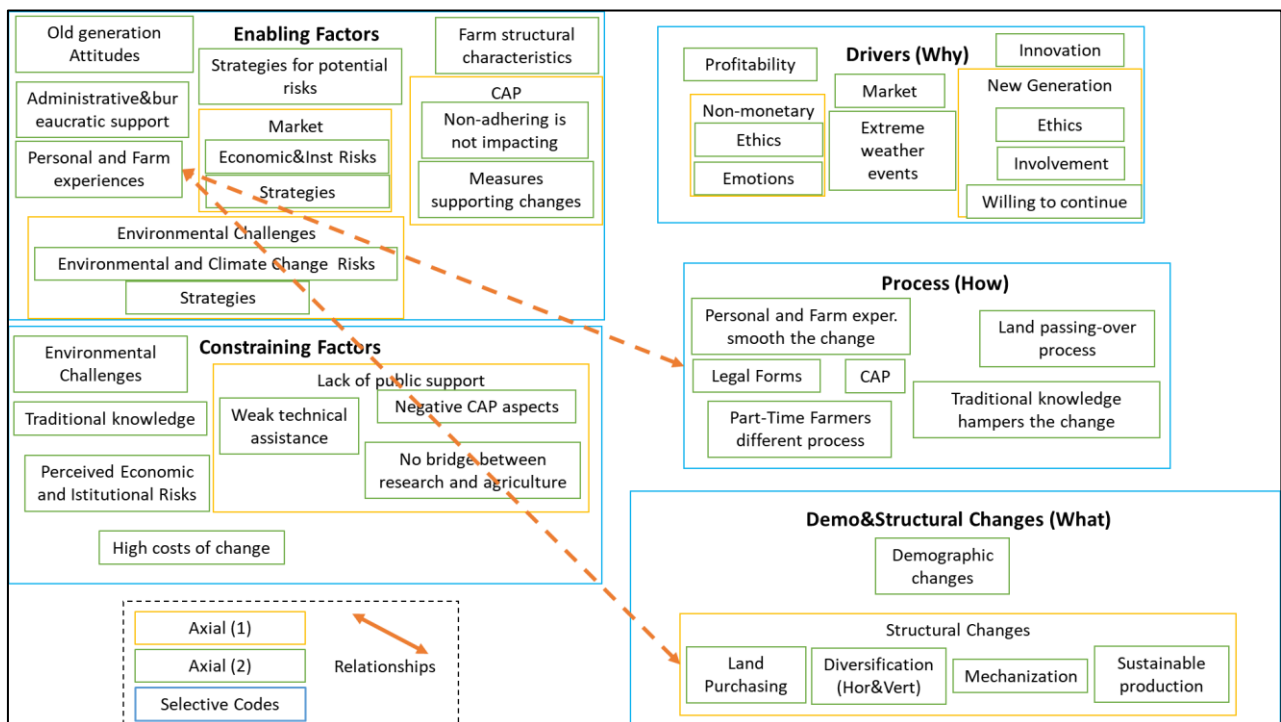


Figure e – Graphical Relationships, Experiences.

Finally, we noticed that when part-time farmers are at stake, some dynamic change dramatically. Being involved in another job limits the full management of the farm and consequently influence the size, the relevance and the duration of structural changes: *“When I became the owner of my farm, they proposed me to purchase more land, but I didn’t do it because my primary job is teaching”* (MC4, R2, male). A part-time farmer wanted to go organic, but because of his other employment he postponed it when retired: *“When my job at the university will decrease, then I*

will take this decision" (MC4, R2, male). On the other hand, having another income reduces both risk and risk perception: *"I do not see any risk for his farm: he has a salary, the revenue of the farm is a surplus"* (MC4, R1, male).

### Further Developments

The relationships we described will be further analysed in the coming months with the objective to link the analysis to the resilience of the farming system.

According to preliminary and general results, one could say that the hazelnut sector shows both robustness and adaptability. Robustness as it witnessed a very significant development, and, quoting an interviewee *"bad years are recovered by good ones"* (MC7, R1, male), indicating some implicit buffer for negative campaigns. However, it is worth noting this sector has featured a very positive trend in the last ten years, so one may want to be careful to define it robust. However, from the interviews emerged how farms are becoming sensitive to potential and actual challenges, trying to face them by changing, with the depth and width of such changes depend on case to case. Albeit we also described vertical differentiation by integrating some non-farm activities, one may argue calling this transformation, since the core business remains the farming activity. However, if what some farmer says is true, that is, that there will be no room for small farms in the future, transformability could happen for those who will try to endure.

## 3.6 Arable family farming in the North-East of The Netherlands

### 3.6.1 Brief description of case-study context

In the rural areas of northern Netherlands, the regions of Veenkolonien and Oldambt have 1,217 specialized field crops farms, 921 specialized grazing livestock farms, and 113 mixed crops/livestock farms (as of 2018). The arable farms in these areas are mostly family-owned and run, but most are falling on hard times monetarily. From 2003 to 2016, the number of farms with broadened economic activities – like selling at the farm and agro-tourism – had decreased by half. Farming has proven to be a very capital intensive industry – essentially making it only possible to become a farmer if one's family already owns a farm. This has resulted in a decreasing population density in the rural areas, as well as an aging farmer population. Within the market, prices for agricultural products have been fluctuating and have largely been decoupled from that of the national production. At times, the farm gate prices have actually been below production cost prices, putting a lot of pressure on Dutch farmers economically.



The Dutch sample of mini-cases mainly consists of derivatives of the traditional family farm succession model, although some examples of remarkable demographic interactions, divergent from the typical familial farm transfer process, were observed. These include a 'pure' new entrant farming couple, a new entrant who was able to get into farming by marrying into a farming family, and a legal partnership between a couple of arable farmers (non-family members) whose partnership enhances among others the transfer of land between partners. When respondents were asked about the farm future, they considered non-family succession (preferably by an employee, or someone they know), and one respondent expressed the wish to stay involved through 'farm shares'.

All farmers in the sample are highly motivated to be a farmer because they really enjoy the farm work and they like the lifestyle, i.e. they explain how family life and farming work can be practically intermingled into a harmonized and pleasant way of life. At the same time, their enthusiasm is obscured by uncertainties about the future of agriculture and the increasing pressure from society. According to some of the respondents critique on farming practices is unfounded and a result of citizens being more and more distanced from agriculture and unaware about how the farming system works.

Respondents report that farmers and (or) the other members of the household have a relatively high adaptive capacity. However, they also indicate that for transition to occur they need financial and institutional support, e.g. for the implementation of alternative management strategies, new infrastructure, and unconventional farming practices. At the moment, farmers feel rather restricted by the legal framework. They need to operate within the boundaries of the regulations but they already have very small margins. Relating to this, Dutch respondents are convinced that policy makers with a vision and an 'agricultural feeling' are needed in the first place, and an holistic and stable policy approach is necessary. Also, the cooperation with livestock farmers was stressed by the respondents as currently absent because of unwillingness and incapability of farmers with different specialties to fruitfully and respectfully collaborate, although the potential mutual advantages that would result from such collaborations are acknowledged.

### 3.6.2 Detailed report on case-study results

#### What factors and drivers influence farm demographic change and how?

From the NL case-study we learn that there is a lot of attention (and motivation) for change in the context of farming practices (now and future); implications towards farm demographic change are however not self-evident (see next paragraph). Enthusiasm for farming (including farm succession) balances between 'great to be a farmer'/ 'great to live on a farm' to 'if societal



pressure keeps on developing in the current way I lose my enthusiasm' / 'I am no longer proud to be a farmer' / 'I do not want to farm alone'.

#### What are the drivers of entry/exit decisions?

Mostly, farm succession was not an issue. There were several reasons for this:

- Life cycle, i.e. children are too young or have already decided not to go into farming.
- Attitude of 'let children do what they like / no pressure to take over the farm', i.e. farm succession by children is not taken for granted.
- With regard to entry, the following occurred:
- Traditional model: father/son, father/daughter. For most farmers, this was a very positive decision (one exception).
- 'Self-made' (with help of grandparents).
- Through partner. Although not born on a farm, partners feel appreciation for 'the way of life'.
- Part-time job elsewhere. This adds value to the farm. Next to income diversification, the off-farm job brings a high level of realism, e.g. in terms of the need to take opportunities and adapt to reality ('people in all sectors need to adapt continuously, so this also naturally applies to farmers'), and the need to work hard ('this happens everywhere, not only in farming').

#### What are the most important forms of farm demographic change for the NL case-study?

For the majority, there was a clear preference for operating as a family farm, frequently with interest towards on-farm diversification (energy production, care farm, direct sales, ..), off-farm diversification (job elsewhere), and room for side-activities (hobby, volunteer work in village, ..).

Alternative demographics:

- Partnership with more than 1 child.
- Farm succession by employee (did finally not materialise).
- Stay involved through 'farm shares' ('like the Ahold family').
- Partnering with local colleagues (feed source, manure, ..).

With regard to farm-related decision making:

- Mostly a mix of family and others.
- Few cases of 'all by himself' ('I know what I want'. 'My family does not really care').

Some farmers/families clearly felt resilient, supported as follows:

We take opportunities & have the capacity to make steps and develop.

### **3.7 Family fruit and vegetable farms in Mazovian, Poland**

#### **3.7.1 Brief description of case-study context**

The Polish case-study area covers Mazowieckie and Lubelskie NUTS2 regions and is located in central-eastern Poland. This area is a main producer of horticulture in Poland that is why this case-study focuses on fruit and vegetable production. The farming sector is characterized by small and medium family farms. As in nearly all parts of Europe, this region also encounters the process of gradual concentration of agricultural land in fewer and larger businesses, although this intensification process develops more slowly in Poland compared to other countries.

The mini-cases cover small family farms (up to 40 ha) where farm work is usually provided by some family members and seasonal wage workers. The intra-family succession process is determinant to the survival of the farms: although some respondents had no farming background previous to entry, the active farmers in the nine mini-cases were not considering non-family farm transfer; but rather anticipating on the forthcoming family succession or desperately hoping on a child changing his/her mind to take over the farm in the end. The respondents are worrying about the uncertain continuity of their farms. The emotional attachment to the farm of the older generation was in some mini-cases leading to family discussions, in other mini-cases to non-exit.

A major reason for low succession rates are the labour dynamics. First of all, a lot of Polish people work outside agriculture or even abroad, mostly because the income from agriculture is not competitive to the possibilities obtainable from off-farm labour. Second, farms are depending on seasonal workers, but it is increasingly uncertain whether the workers will show up on the farm for long enough time to get the work done. Besides, a lot of farmers used to invoke on non-EU employees, but the current administration process is very cumbersome and inefficient, especially for this type of workers. The availability of seasonal labour, and the ability of the farm manager to pay the worker's wages, are two fundamental factors affecting the productivity of farms, as fruit harvest is very strict and intensive in terms of time allocation.

The economic situation that the farms are withstanding is one of low profitability, mainly caused by the continuously increasing input costs and stagnation of sale prices. The low profitability of agricultural activity is a deterrent to new entrants and prospective successors. Future coping strategies with the labour force scarcity are described as either institutional (government making it easier for small farms to have precarious contracts) or rely on the incremental mechanization of certain activities. The latter requires investments in new machinery and business enlargement, which are already possible by the use of specific CAP subsidies available. In this way, policy support was stated as crucial for farm survival, however, some respondents also remarked the financial

support schemes are not flexible and do not regard the context of the farm, resulting in suboptimal investments.

The main developments in the farm enterprises are being dictated by changes in consumer behaviour and preferences, as well as in developments in the distribution channels. In particular, contracts with wholesalers, although giving the assurance of the future sale, also demand the adherence to quality certification schemes requiring additional bureaucracy. In order to be able to face the growing demand for quality produce, farmers of the mini-cases gather in newly created producers group, to be able to invest jointly in communal storage facilities, as well as improving the farmers' bargaining position. Additional challenges stated included severe droughts (associated with ongoing climate change), a problem hard to overcome because the typical fragmentation of land hinders the implementation of expensive irrigation systems. Social pressure was only once mentioned by one respondent (who was frustrated about an ongoing campaign against farmers).

### 3.7.2 Detailed report on case-study results

In Poland, most farms are transferred within the family. It is important in this case who will take over the function of the manager, which involves making key decisions in the future regarding assets, current production process and directions of development of agricultural activity. In order to preserve the character of the production unit and improve the economic performance of the farm, a relatively more favorable situation occurs when the assets are transferred during the lifetime of the current owner. The successor then takes over a functioning farm, which prevents conflicts between heirs related to inheritance. The analysis of the conducted interviews shows that the decision made to engage in agricultural activities, in the case of fruit or vegetables, was the effect of a deliberate decision in the family circle, usually with the spouse and parents. Farming was one of the alternatives, because before the decision to run the farm - with the exception of two students - the others worked outside agriculture (trade, consulting, agri-food industry, transport, services). With the exception of the respondent 1 PL, who started agricultural activity from the purchase of the farm, all the others took over them in whole or in part from their parents.

The main motive for these decisions was the vision of "better life from farming" than outside agriculture. Except of one respondent who, as a motivation for agricultural activity, indicated no opportunity to find work outside agriculture. By opting for agricultural activity, they intended to develop their farms, which resulted in their increased professional activity, manifested, inter alia, by increasing the area by purchasing or leasing land, investing in buildings, tractors and machines, and adjusting the production structure to the demand of the market. All respondents (8) who took over farms grew up in the countryside and from the earliest age were engaged to work on

the farm. Other motives for taking over of farms were family traditions, interests in agriculture, and the possibility of obtaining financial resources under the CAP.

The youngest respondents, who took over the farms in 2005-2015, indicated that agriculture is their passion and they did not see any other place for themselves than work on the farm. They emphasized the importance of parental help in running the farm, mainly due to extensive experience of the parents.

In six farms there was a problem of succession. Various factors were pointed out, but the most important one is the profitability of production that has been maintained for a few years at a very low level, and in some years even losses. Therefore, in two cases, potential successors make the takeover of the farm conditional upon the economic situation. This is a position worked out together with parents, who advise them not to take over the farm in the current situation, especially because both potential successors have a good job outside agriculture. In addition, potential successors have to take into account the position of their partners who come from the city and have had little to do with agriculture so far.

The next four farms are missing potential successors. Potential successors were never interested in working on farms; they are graduates in pharmacy, information technology, psychology, and polytechnics. At most, they can agree to a formal takeover of the farm (this is a condition for receiving the pension by the current owners). This is the case already in one of the surveyed farms. Interestingly, this formal successor considers with her husband running a farm with a help of parents, without giving up her current work.

In the other two, previous owners count on the fact that perhaps someone from the closest family will decide to run the farm with their support (in one case a grandson is persuaded and in the second one, the son who can retire early in 5 years - he is a soldier).

In the course of the study, apart from the above-described factors of a personal nature, the following groups of factors will play an important role in the demographic phenomena occurring in the respondents in farms: (1) economic factors; mainly decrease in income from agricultural activities; (2) environmental factors; mainly draughts and ground frosts, hail, intensification of pest appearance, all causing fluctuation in yield; (3) political and institutional conditions. Concerning the economic factors, price fluctuations and fall of the profitability of production are mainly due to increased costs. Prices have remained at a similar level for many years, while the prices of pesticides, fertilizers, fuels and salaries of seasonal workers are constantly increasing. Furthermore, problems with distribution, changes of consumer tastes affected the necessity to change the types of fruit trees, growing demands toward quality. Concerning the environmental factors, draughts and ground frosts, hail, intensification of pest appearance (mainly insects) which

requires a much larger number of plant protection treatments, are challenges for Polish farmers. Besides, very effective pesticides, eg. glyphosad, were withdrawn from the sale, causing fluctuations in yield. Concerning the political and institutional conditions, a highly bureaucratic system of employing employees from abroad causes bureaucratic burden on farmers who work with flexible daily workers. A bureaucratic system for obtaining quality certificates for GLOBAL GAP, TESCO, etc. is seen as a restrictive factor. Withdrawal of effective plant protection products has been discussed before. The implemented system of auctions for supply of fruits to public facilities (public procurement for hospitals, army, penitentiary facilities) focusses on the price and not on the quality of supplied products. The system of land market and direct payments slowed down the turnover of land, payments don't always reach the farmers cultivating the land. Further challenges identified in the Polish case-study were bureaucratic system of application for funds other than then direct payments from ARMiR for small farms and Embargo for export to Russia.

### **3.8 Small-scale mixed family farms in North-East Romania**

#### **3.8.1 Brief description of case-study context**

The case-study is set in the North-Eastern region of Romania and includes six counties. Compared to the rest of Romania, the North-East has the lowest farm net income, paid labour input and total output (crop and livestock), while the highest on-farm consumption, amount of rented area and a high level of unpaid labour. In terms of utilized agricultural area, 98% of the farms in Nord-East region have less than 10 hectares and 95% less than 5 hectares. Additionally, the post-communist liquidation of cooperative farms and restitution of land to the former owners resulted in a fragmentation of the land. The studied area is traditionally dominated by very small mixed farms, mostly run by families, some of them are subsistence farms. Production is mostly cereals (maize and wheat), oilseeds (sunflower), fodder crops and vegetables. The livestock is composed of bovines (mostly dairy cows), poultry, sheep, pigs, and horses (mainly for transport purposes).

The sample of farms used in this case-study consisted predominantly of small family farms dedicated to mixed activities including arable crops, livestock rearing, fruit and vegetables. Some of the farms have a commercial function and are embedded in local value chains, others are for subsistence only. The farm labour force is principally based on family members and occasionally supported by daily/seasonal workers. The vision, attitudes and behaviours of older respondents, who have consciously lived through the communist period, are clearly different from those respondents who have not. For example, the first group of respondents tend to be reluctant towards any kind of cooperative forms, while the younger respondents don't see a threat herein.

Themes raised by the respondents that are illustrating the situation in the case-study region are: high unemployment rates; a lack of private investments in entrepreneurial activities; strong migratory patterns (rural to urban and abroad); an ageing population; and lack of adequate services (railways and infrastructure). Also, there are quite few producer associations, and consequently poor bargaining power in relation to large industrial processing units. Production risks are perceived primarily as environmental: incidence of drought and extreme weather events are indicated as the main source of uncertainty. Market related risks include the ongoing price-cost squeeze that makes farming unprofitable and unattractive; which is perceived as the main barrier for entry. The low bargaining power with other actors in the supply chain is cited as a source of organizational risk. CAP Subsidies and RDP measures are perceived very favourably and influential for modernization and investment.

From the information in the interviews, it seems like the demographic dynamics are largely influenced by the ongoing migration that significantly impacts the availability of farm labour as well as the likelihood of succession. However, migration is also presented positively in some cases: returning migrants bring in new knowledge, entrepreneurial attitudes, and a stronger inclination towards innovative agricultural practices. Respondents name the lack of infrastructure – compared with other European regions – as one of the main causes of non-entry into the sector: potential successors are not motivated anymore to take over the farm because they find more attractive jobs and possibilities to maintain their family abroad (in Romanian cities or in other countries). The older generations hope that the farm will be continued after they pass away but the current situation is characterized by the descendants being settled abroad and returning to the farm only for vacation. Hence, some kind of viscous cycle arises where incumbent farmers are only limitary investing in farm modernization and infrastructure because of lack of continuity perspective, while this lack of farm development reduces the attractiveness of the farm to potential successors.

The decision-making is traditionally the responsibility of the farm head. Although both ownership and farm work is divided between husband and wife, the male farm operator is usually viewed as the farm head, displaying gender roles that are also expressed by typical division of labour tasks among family members. Operational and strategic decisions are in most cases taken by the male farm head, while the commercial activities are usually the responsibility of the assisting spouse. In this case-study, the overlap of the farm business and the household is also displayed in the respondents' attitudes towards financing: sourcing money from family members and local networks is preferred over established credit institutions due to distrust, resulting from historical trajectories and bad experiences.



### 3.8.2 Detailed report on case-study results

The analysis of interviews conducted on 7 farms – noted symbolically as mini-cases – was made on the basis of a set of concepts that can describe in causal, explanatory terms – the differentiated determinative-decisive influences – supported by the succession process. In fact, the analysis identified the traditionality-modernity relation in the construction of the succession process on the family farms; the content and attributes of the succession process were investigated in a rural area of the Nord Est development region, in a certain socio-economic rural area, permissive and sustainable for the mixed farming activities.

The investigated farms are perceived as family farms by the interviewed subjects. In general, the farm is based on a nuclear type of family (husband, wife and children). Within the family and on the farm implicitly, there is a mix of traditionality and modernity:

- the land areas into ownership range from 0.5 ha to 40.0 ha, divided into plots characterized by great crop diversity;
- The behavior concerning land leasing is different according to the age of the farmer and to the development perspectives of the farm:
  - young or middle-aged farmers who want to enlarge / develop their farm are leasing land and when possible, buying land;
  - old farmers who are not able anymore to operate their farm and do not have a successor (that is already working on the farm) are leasing out the land, but do not sell it. The selling decision is postponed until after their death and becomes the responsibility of the legal inheritants.

There is a mixed farm profile, with multiple crop and livestock production activities. *“I have maize, 2 ha with alfalfa, 7500 m<sup>2</sup> with sunflower, 3 hectares with maize and 1 hectare with wheat... we have 3 cows, one heifer.”* [MC5, respondent code 111]. There is a strong diversification on the farms where the farm head had a migrational trajectory<sup>3</sup> or in the case when one descendant returned and got involved in the farm activity: *“...I worked abroad, in Italy, more exactly... I returned in 2010 and I started the farm. It used to be only on old orchard; I replanted it with new trees, now there are 2 hectares and a half with orchard. I started also to grow vegetables under plastic tunnels and now we have 6 plastic tunnels here, 1800 m<sup>2</sup>, and another 1800 m<sup>2</sup> with field vegetables, plus other crops maize, wheat, two-row barley, some potatoes... some Mangalița pigs*

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<sup>3</sup> If the farm head or the successor temporarily migrated and worked abroad, he/she had the opportunity to see new crops, varieties, animal breeds and farming techniques, quite different from the traditional farming activity from back home. They are willing to implement this different knowledge in their farm, resulting in diversification of crops and farming activities.

and wild boars, 2 big sows with one boar and 11 piglets...” [MC1, respondent code 011]; [son] came with novelties, “we planted lavender, we have Paulownia trees...” [MC7, respondent code 201].

The productive behavior is largely influenced by modernity factors: the farm machinery and equipment are relatively modern: “Well, we bought 2 tractors, herbicide sprayer, mower, seeder, plough, disc, baler” [MC4, respondent code 081]; the storage facilities are generally of traditional type (the ones already existing in the household), but there are also cases when storage facilities are rented, more or less suitable for storing farm products under optimum conditions<sup>4</sup>. Knowledge and information are processes based on traditional practices (the friends and neighbors are the main sources) and modern practices (Internet). Furthermore, the social space in which they lived during the migration periods represents for those who returned an important information and mainly innovation source. These families are also connected to social networks, which are propagating agricultural knowledge and information.

The labor force is firstly based on family members and also on seasonal workers: “Well, my husband and myself. We also have help from a man, when he is available.” [MC6, respondent code 142]. In the case of farms with high productive diversification and significant commercial function and with non-agricultural activities (such as the agro-touristic boarding house in MC1), there are also employees (used only in production activities, not in marketing activities).

The sale of farm products is a mix of traditionality and modernity; from commercial functions based on:

a) on-farm sales: “We do have customers, for several years, veal, pork... they are coming and buying directly from the farm, everybody is satisfied because we slaughter the animal, we get it ready for sale...” [MC4, respondent code 081];

b) sale of products at the market, by keeping the customers loyal: both on the proximity markets: “You should know that people, gradually, begin to look for us in the market; they tasted our vegetables and fruits, liked them, and now they are regular customers... Now we can feel that people are looking for us” [MC1, respondent code 012].

The financial-banking behavior is essentially traditional: the main sources of loans are the family (relatives included), friends and sometimes local leaders; loan arrangements among members of

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<sup>4</sup> The rented storage facilities are similar to those in the household. Small-size farmers do not use the large storage facilities such as specialized silos belonging to commercial companies; renting storage space in these silos is too expensive for them, because they have relatively small amounts of products to store.

the family and trusted friends are frequent and generally informal<sup>5</sup>. Formal financial institutions, such as banks and insurance companies generated distrust over time<sup>6</sup>.

There is a positive perception of subsidies, subsidies are strongly valorized: *“extremely important”* [MC3, respondent code 061].

The traditional decision-making model is present through the existence of all the attributes as family head and farm head. There is no clear separation between the farmer’s personal life history and the farm history, there is an intermingling of statuses at the level of the person who is the family head and at the same time the farm head. All this is based on land ownership, the land owner is self-proclaimed and recognized as the farm head: *“I mean, it’s all mine”* [MC2, respondent code 041]. In fact, the family history intermingles with the history of the farm, and everything takes place around the history of the land they own: *“... I had a large garden. When I was young, I built myself a house there, I was only a child... I interrupted my studies when I was in the 7th grade, I worked on the household alone, ...I bought 2 calves and one heifer. Land was very good, ... I used to sell vegetables to people...”* [MC2, respondent code 041].

The roles and statuses are specific to the traditional model: the wife has the traditional role in the family, accomplishing the domestic activities, to which specific selling activities add; *“...there is cooking in the first place that she must do..., then, in the morning she must feed the pigs, the poultry, the rabbits; ... in the afternoon she sells in the store and in the bar”* [the family has also a food store and a bar], *“... she does also all the paperwork”*. The husband’s role is that of family and farm head, to perform all mechanical operations in the farm and additional transport activities: *“ ... as for me, I pick the disc, leave it, I pick the seeder, I mow and bale the hay ..., I perform all the mechanical operations myself... ; ...I take the sunflower seeds (700-800 kilos), bag them, load the bags in the car, and go to Vaslui [closest town] .... I go to the oil press there, bottle the oil and sell it in our store; the oil cakes are used as feed for animals”* [MC4, respondent code 081].

<sup>5</sup> The financial decisions are taken in general by the whole family (which becomes the guarantor of the loan). In small communities like villages, everybody knows everybody, and rumours about bad debts spread quickly.

<sup>6</sup> The banks do not accept land and farm / household assets as collateral, only houses and vehicles (cars, tractors, expensive agricultural machinery such as combines); also, the interest rates are very high. The insurance companies are not interested to work with small farmers; and whenever it happened, generally the farmers were not satisfied (they felt cheated by the insurance companies, which asked for rather expensive insurance premiums but when disasters occurred, they invoked various reasons for not paying the farmers the money they were entitled to, leaving the farmers to bear all the losses).



A dilution of the traditional model of the gender roles appears in the investigated area, generated by:

a) multiplying the income sources through non-agricultural activities - causes the reconsideration of roles into another matrix: *"...he is mostly involved in farming activities, I also help him, when I can. We divided out work, he's with the farming, I am more in charge of the store, he only gives me the bills, I am doing all the paperwork"* [MC4, respondent code 082; besides the farm, the family has also a food store and a bar];

b) when farm management is the wife's task (because the husband has an off-farm job), that induces equality of roles (decisions are not taken only by the family head (husband) anymore; there is co-decision: *"...we both see what has to be done and discuss, when we have to make decisions... who makes decisions on risk management? Both of us. My husband and I"* [MC5, respondent code 111].

Farm vulnerability is perceived as having two dimensions:

a) there is a vulnerability generated by the price of agricultural products<sup>7</sup>, *".... our price is always below the market price... if you go, you can make a comparison, to see what prices are at the market and what are our prices"* [MC1, respondent code 012];

b) the second type of vulnerability is induced by extreme weather events, such as heavy rainfall and drought.

As any farm-specific process – demographic, socialization, economic – succession lies at the confluence between tradition and modernity; in the analyzed cases having the characteristics of a social construction in which the previous inheritance models are preserved, but at the same time there are cases in which germs of inter-generational transfer emerge; for instance, the identification of the heir's identity or the legalized or verbal transfer of part of the land property.

In legal (juridical) terms, all the children of the family are entitled to inherit equal parts of the parents' assets.

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<sup>7</sup> In the market (peasant market in towns) there is a strong competition between the so-called "middlemen" and the genuine agricultural producers. The "middlemen" are those who are buying agricultural products either from wholesale markets (imported vegetables and fruits) or are buying fresh vegetables and fruits from farmers who cannot sell themselves their products directly in the market (are either old and not able to be come to the market, or their farms are located far from the market and it is too costly for them to travel daily to sell the products in the market). The middlemen generally have access to some storage facilities, and can store the unsold products over the night; while the genuine agricultural producers do not, therefore the latter must sell all the products in the same day – hence lower prices.



In social terms, the succession process occurs in two ways: the ‘traditional’ way and the ‘modern’ way. In the ‘traditional’ way, no farm successor is identified during the old farmer’s life; after the farmer’s death, the inheritants decide what to do with the farm and farm equipment (if the farm will be taken over by one of them, or leased, or sold, the way the farmland will be divided among them, etc.); this is happening generally in small farms, where the children migrated away from the village, either to towns or abroad, and are not interested in agricultural activities. In the ‘modern’ way, the current farmer has already identified a successor, he is training and involving the successor in the farm operations and in the decision-making process. Quite often, the current farmer transfers during his lifetime, legally or verbally, a part (not all!) of the farmland to the successor, but the farm continues to function as a whole. This is happening generally in larger farms, which are already commercially-oriented.

The succession process is influenced by:

#### A. The social universe of farms:

- discontinuity of values at inter-generational level – there is no homogeneous universe of values, a continuity of values at the level of the family and family farm. The conflict of values existing between generations is amplified by the migration experiences. The descendants who entered other social spaces have internalized a series of values which are different or even opposite to those specific to the family of origin. The succession process is altered because the cultural pattern, specific to descendants, has changed; the possible successor became a “qualitative evaluator”, exceeding the status of “born to be a farmer” (Chiswell & Lobley, 2018).
- due to migration, some respondents managed to internalize ways of thinking, feeling and acting, specific to the cultures they came into contact with<sup>8</sup>, thus building a social identity completely different from that expected by their the family of origin; hence, regarding succession, the expectations of the two actors – the successor and the beneficiary of succession do not meet/overlap.
- importance of the family of origin, perceived as having social authority, and strong kinship links; it is possible that, in the case of succession, the ‘traditional’ transfer model would be imitated by the current owners of the farm: they became owners of the land when the family of origin disappeared (not during their ancestors’ life), consequently this cycle is respected and continued. Probably it is perceived as an endogenous cycle that is further imprinted and

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<sup>8</sup> When they migrated, they have gained new professional and social experiences, different from those in their place of origin.





consequently the postponement of the transfer can be explained by the traditionality that continues to exist in the rural family nowadays;

- the neighborhood relations maintain their traditional rural functionality; neighborhood is also the space of the economic mutual aid – mainly in kind and mutual assistance for productive activities), exchange of information and knowledge, and also the space where economic conflicts and rivalries are born.

#### B. The demographic social profile of the family farm influences the perception of succession

- 1) In the investigated mini-cases, the ways in which the social identity of the farm head was built are interesting; it is generally a combination of occupational attributes, carried out on social pathways in various economic sectors, services, constructions, industry. But in all investigated cases, the starting point, the basic skills, the primordial activity was carried out in agriculture, while further skills were gained from non-agricultural occupations. At the level of farm heads there was a juxtaposition, a combination of identities: the agrarian individualism – traditional characteristic, on which the identity built in other collectivities / occupational groups was overlapped<sup>9</sup>. The examples in which the fundamental experiences from child/teenager life represented the matrix on which the other social identities were built are numerous in the investigated area: [child] *“After my father’s death, my mother married again and moved to another village with her new husband, and she told me: ‘son, take care of your father’s land...’, so I had to leave school in the 7-th grade; I ran the household all by myself, I raised a cow and I worked in the garden, growing and selling vegetables, as much as a child could work...”*; [teenager] *“I worked for 3 months at a tailor’s shop, but he died and I had to return home in the village...”*; [young man] *“when I was 23 I came to raise cow and oxen... Then I bought an oxcart and ploughed the land with the oxen... then I also bought 10 sheep...”*; [as an adult] *“left the village, moved to Iasi [largest municipality in the region] and worked in light industry, as a tailor, then as a foreman and technician”* [MC2, respondent code 041]. The basic identity as farmer is characterized by certain values internalized in the family of origin, focusing on land *“... if my father [who died a long time ago] can hear me, and I hope he can hear and see me, I*

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<sup>9</sup> It is the case when the head of the farm (generally aged over 60 at the time of the interviews), was raised and educated (as a child and teenager) according to the values specific to agrarian individualism. Then, in the period of active life that followed, he left the farm and moved in an urban area to work in construction or industry, where he had to integrate into an occupational group / collectivity with other values. Thus, the social identity of the farm head is made up of multiple layers of values that have juxtaposed and blended. If one analyses the construction of his social identity, one can conclude that: to the pre-existing components (such as childhood education), acquired components and adopted components were added. The acquired components (such as abilities to work as part of a team) are constantly dynamic, due to multiple occupational changes. The adopted components (such as managerial abilities) are due to the assumption of further interactive roles (with higher responsibilities, such as head of a team).



*have not sold any tiny piece of land, I tried to work it instead*” [MC7, respondent code 201]<sup>10</sup>. In the case of succession, the descendants, who do not have a fundamentally agrarian social identity, but different ones (acquired not only outside the farm, but also outside the country), are carriers (bearers) of other values (not fully overlapping with those of the family of origin). In fact, there is an inter-generational break (rupture), a fundamental difference in values and attitudes. For the father (actual farm head), the land has a traditional value, it is the inheritance of the family that should not be alienated, it is the binder and foundation of the family, which gives its identity in the community. For the father [farm head], there is a sentimental / philosophical value of land and of the farmer’s role: *“...the ploughman is waiting patiently, he plants the seeds and does not know what will happen. Only by faith he believes that plants will emerge, it will rain and crops will grow...”* [MC2, respondent code 041]. In contrast, for the successor [daughter], land is not a value in itself, it is an economic resource<sup>11</sup>; land and farming are associated with economic efficiency: *“We tried to give him advice on certain crops, but he never had confidence... I would like to transform it into a farm with something easier to manage, an orchard for instance, which does not imply very many agricultural operations and needs less investment in labor force... I thought that a walnut plantation could work in this area, and the effort is minimum”* [MC2, respondent code 042]. It is possible that these more or less discrete factors (attitudes, values and different orientations) will influence the identification of successor/successors of land heritage and farm implicitly.

The analysis revealed a relation between descendants’ sum of values, attitudes and experiences, and succession:

- living and working in competitive agricultural environments (like those in which the successors worked abroad) imprints another type of structural development of farm; the actions of possible successors are oriented towards profit, diversification, intensive crops. *“...I returned from England and I saw father working from morning till night for the wheat crop... I wondered why he was working so hard, a lot of work and for nothing... he still grows wheat, maize and other crops; but I didn’t want to do the same, and now I have ¼ hectares with Paulownia, with alfalfa... I also have 100 m<sup>2</sup> with lavender... crops on small areas with high value”* MC7, respondent code 202].

<sup>10</sup> the value of the land is perceived by the ascendants in the traditional sense - the social aspect is predominant (it is defining for the identity and social status of the family), together with the sentimental aspect (it is the asset inherited from generation to generation, and it is not for sale for any reason; the next generations are supposed to continue preserving the land ownership, maybe buying more land, but not selling it).

<sup>11</sup> For the descendants (successors) – mostly young ones, the value of land is mainly economic: it is an asset, a mean to work with, to develop a profitable business, to reach prosperity.

- descendants' involvement in the farm activities facilitate the identification of successor: *"we tried to divide the land... I [the son] have a couple of hectares, he [the father] has several hectares..."* [MC7, respondent code 202].
- 2) The investigated farms have two types of successional behavior:
- farms in which succession is a finite social construction, inherited from the family of origin; the succession pattern is taken over from the family of origin and is materialized when the person inherited disappears: *"I will leave the responsibility on my children's shoulders... they will decide"* [MC2, respondent code 041]. *"We discussed... It is their inheritance. It is up to them what happens next!"* [MC 5, respondent code 142]. Generally, this type of behavior has been found on the subsistence farms, managed by farm heads who are elderly people (70 years old and over);
  - farms in which succession is a social construct, a gradual ongoing process; with descendants' involvement in the decision making on production and sale, transfer of part of land property – legally or by verbal agreement. Generally, this type of behavior has been found on farms with strong commercial function, in which there is a constant concern for diversification, for obtaining profit implicitly.

### 3.9 Extensive family livestock farms in Sierra de Guadarrama, Spain

#### 3.9.1 Brief description of case-study context

The Spanish case-study involves livestock farmers in two agricultural sectors and regions: extensive beef sector located in the Sierra de Guadarrama (a mountain range running along the Comunidad de Madrid) and extensive sheep sector located in Huesca (a province in the Autonomous Community of Aragon, North-East of Spain). Referring the case-study in Huesca, the sheep sector has been especially vital and relevant. But in the past decades, Huesca has lost almost half of its farms and ewes. The number of farms has decreased from 2.902 (1995) to 1.221 farms (2015) and the number of ewes from 811.590 (1995) ewes to 491.621 (2015). Sheep meat consumption has decreased dramatically in the past years: in 2003, consumption was 5.94 kg per capita; in 2015, it had fallen to 1.6 kg. Though, sheep exports have risen recently (151.5 million euros in 2014), especially to France, Italy (for sheep meat), Arab countries (for live sacrificial lambs), and recently China (wool for textile industry). Related to the beef extensive farming in the Sierra de Guadarrama, the number of farms has decreased from 1.100 (1990) to 850 farms. The number of heads has decreased by 15% over the last 15 years. In 2016 there are 36,367 suckler cows in the Comunidad de Madrid (INE,2017).

Generally, the situation depicted in the case-studies is rather difficult and challenging, there seems to be a need of actions to stop the trend of diminishing number of farms. Many of the respondents cited mainly emotional reasons for their perseverance in the farming sector, among which situations of non-exit (farmers who choose not to retire despite reaching retirement age). The two most cited reasons for entry were the farming attachments and land access mainly provided in the family context that explain a remarkable familiarity with this occupation and lack of interest or possibility to go to another sector. One of the most cited reasons that explain non-exit decision is to avoid 'wasting' the large effort that has already been implemented by the respondent or the successee and their commitment with the animals' wellbeing. The sector's low profitability, combined with high workload and lack of possibility to reload during a vacation, disregarding whether it is sheep or cattle raising, makes entrance unappealing to possible successors and is a constant source of hardship for farmers who decide to remain in the business. The rising costs of input mismatch the stagnation of selling prices of the outputs, leaving little space for farmers to retain sufficient profit. Also, the participation in quality schemes to collect premium prices from meat sales, such as IGP Carne Sierra de Guadarrama and Ternasco de Aragón, was observed to be not effective in obtaining better prices in some mini-cases. Other sources of disgruntlement include the CAP distortions and the increasing controls and bureaucracy. CAP distortions are mainly explained by the unequal payments received by sheep farmers since the decouplement of payments (2006). Payments based on the number of hectares have also caused a greater pressure on land access and led to increased land prices. Furthermore, the depopulation of rural communities resulting from a lack of adequate rural services adds to the low attractiveness to entry the sector and are deterrent to new entrants. To conclude, farming attachments, the ownership of land and animals, the ability and confidence of farmers to deal with challenges, the effort and investments already done, as well as the availability of CAP subsidies keep farmers in the sector.

Regarding the succession process, family inheritance was the only type of entry observed, stated to provide easy access to land, as well as specific knowledge and networks, labour support and the emotional bond to the farm needed to persevere in a hostile profession (in most mini-cases, a competitive spirit among farmer-colleagues was reported). Land access together with animal handling knowledge and awareness are named as major barriers to entry. Higher land prices are due to new competitors from other more profitable sectors (intensified calves farming, holding horses).

Exiting sheep farmers in the region seem to reorient the activity to intensification of the farming activity in more lucrative fields, such as intensive calves and pig breeding. Remaining farmers claim increased lamb prices as possible development. To reach this goal, activities enhancing the value of the contribution of the extensive farming to environment conservation and rural development

are needed as well as further development of cooperatives, Protected Geographical Indications and other kind of consumer-oriented initiatives. Lower number of cases show remaining farmers initiatives in non-agricultural activities, which have higher return on investment than the extensive cattle rearing, such as agritourism, and restoration.

### 3.9.1 Detailed report on case-study results

Family farm structure is key to explain the current farm demographics in the extensive farming system in Huesca and Sierra de Guadarrama. Family provides knowledge, awareness and passion for the animals. It also facilitates to overcome one of the main entry barriers that is the access to land. Additional contributions of the family that explains its relevance are that family provides labor support with no costs and relevant networks in the sector.

The family structure also has weaknesses to highlight that explain the farm demographics. Family structures highly depend on the existence of successors. This situation may lead to force the potential successor to remain in the sector, although this fact was more accentuated in the past than in current generations. In addition, family keeps the knowledge within its members, contributing to the challenge of the lack of knowledge in the sector. This challenge is also explained by the decreasing number of farmers that leads to reducing the cooperation opportunities to take care of the animals among farmers and increasing the workload.

Extensive farming system has three main conditions that make it unattractive: Intense labor, low profitability (increasing costs and stable prices) and living in areas with lower public services. These conditions explain why demographics highly depend on the passion and love of the farmers for their animals and their capacity to deal with these weaknesses and additional threats (lower meat consumption). There is a lack of confidence on the extensive sector' future that leads to low investments and debts rates. It also explains the high dependence of the extensive sector on policies goals and instruments.

Farmers see how other intensive sectors (i.e. pigs and calves) are more profitable than extensive sectors. Young farmers decide to move to these sectors based on the fact that in few years they will be able to get the investment back. These sectors also require a low knowledge on handling animals and are less labor intensive. Middle-age and old farmers prefer to remain in the extensive sector mainly to return on the investments made and the awareness about the animals.

#### Links between axial and selective codes

The demographic dynamics in the extensive livestock sector is explained by factors that have been grouped according to their impact on the farm demographics trends.

The family farm structure and the weakness of the extensive livestock farming are the main reasons that explain the evolution in the number of farms in the region as a consequence of entry-exit decision making.

Regarding the evolution of the farms' size, management and farmer's capacities and behavior, two main groups of factors have been identified. Those directly related with the farmer, regarding their trust and confidence in the sector and their ability to deal with consumer demand. This two drivers are also explained by two other drivers that also explain the demographic changes in the region: the role of the policies and the education and labor schemes.

The trust and the ability to deal with challenges are the main selective codes of the analysis. They are also influenced by the family structure and the weakness of the sector.

### **3.10 High-value egg and broiler production in Southern Sweden**

#### **3.10.1 Brief description of case-study context**

The Swedish study region is located in Southern Sweden, and the agricultural sector of interest comprises family farms specialised in egg and/or broiler production. The Swedish commercial poultry industry is dominated by production for the domestic market. Since 2000, the poultry sector in Sweden has been undergoing fast technological changes while adapting to animal welfare, ethical and food quality issues as prerequisites for sustainable production. This is strongly supported by the consumers' interest in locally produced agricultural products with known origin and high quality. However these standards go beyond most of the EU practices, imposing higher production costs and therefore low price-competitiveness. Given the relatively high costs for other inputs (such as labor or energy), Swedish farmers need to continue with structural rationalization and investment in order to meet competition through increased productivity.

All of the farms representing the Swedish mini-case are family farms specialized in egg and/or broiler production; some of them diversified in forestry or in arable crops/cereals either for sale or on-farm use as fodder for the animals. For the selected farms, farming is perceived as a lifestyle, where "family support is invaluable". However, hired non-family labour also occurs, and the main discriminants in the recruitment process are specific education and interest for working with animals. Given the family business character, the succession is of high importance for the continuation of the business, and is often related with an early involvement of the successors in the rural lifestyle and specific education impacting to the future of the sector. Both the family and the non-family members (employees on the farm or other stakeholders) participate into development trajectories of the farm business. It was observed in the mini-cases that a good



relationships between the farmers and the other value-chain actors (both upstream and downstream) enables entry or continuation of the farm business. Various farming system stakeholders dictate shifts toward further intensification, mechanization of operations, and specialization of the farms. For farms not able to expand enough (due to lack of capital or lack of interest from the family members), side jobs were also a solution. The community infrastructure is another driver of demographic change. The inadequate public services and the farm location cause a general low attractiveness of the farm, both for the family- and the potential hired labour.

In the Swedish case-study, particular attention is given to the existence of specific gender roles in the division of labour, responsibilities and farm inheritance. While mostly men hold the managerial roles and are principal decision-makers, women are mostly regarded as employees responsible for supporting mainly operational activities (typically rearing the chickens and performing the administration), with a secondary role in the strategic decision-making process and are not encouraged to take over the farms.

### 3.10.1 Report on case-study results

#### Farm/family specific factors affecting demographics

Coming from a farming family background in different ways enabled farm entry for informants. It was common that generational shift was seen as natural, with children having first opportunity to get involved in, and to buy, the farm before considering other options. In this way, farm purchase was enabled by family relations. Also inheritance or transfer enables entrance, showing the importance of farm demographics to who the new farm owners might be. Being raised on a farm and having an animal or bird interest was an important component in choosing to enter the farming industry altogether. A topic that recurred very often was how family relations were crucial for decisions affecting demographics. In particular, if family members wanted to get involved, the farmer was more likely to make decisions to expand or develop the farm. This means that the interest of the family members to be a part of the farm enterprise, and in what way, played an important role when developing existing or new areas on the farm. However, family members that do not get along well did not smoothly enter into farm business together, and in one of our mini-cases one of the siblings chose/were asked to choose off-farm work. Further, parents were more likely to develop the farm in ways that might be profitable or enjoyable in the long run if children – even young children – showed interest. However, the location and material aspects of the farm also put limits to how many family members that could get involved and at what speed the farm could develop or grow to include all interested family members and still be successful.

The decision to enter a farm business or not, or to exit a farm business, were in a few cases linked to an outspoken lack of interest affecting the choice of entrance or exit. It could be that a daughter



had never developed the interest to start with and eventually chosen work outside the farm, while the brother had gradually become more and more involved. In other cases, it was a question of losing interest with age because of the heavy work involved, resulting in an active decision on retirement or dismantling of the farm.

It became clear through our interviews in different ways that family support was important in order to get enough time and energy to do the farm work needed. Partners take care of the children, home, and are supportive of the long, irregular working hours that the informants work. Children also help when new chickens arrive, and family members who live on the farm can jump in and take care of an issue that might arise if the informant is away. This is linked to the informal character of the farm work and that a lot of unpaid labour goes into the production. With farming being a lifestyle rather than a 9-5 job (*"You are on-call 24 hours per day."*), there is a lack of time and rest for the informants as result of unpaid labour.

It also means constraints with vacation and especially travelling, unless the farming couple travel at different times. One solution to this was to hire labour and train them to be independent enough to take over for a period of time. However, this required a certain size farm in order to afford to pay the hired labour.

Alongside the vague border between private life and work, also finances, business practices and material assets proved intermingled between private, farm and company. One farm may in practice be made up by a combination of independent companies and ownership structures with interlinked financial management in ways that are all crucial to the farm business. As touched upon above, work and private life practices merge and the material assets can be split on paper between private persons, companies and the farm business in ways that seem to only make sense if it is run by a family with informal family ties to keep it together. This intermingling also extends to authority, taking its expression in informal leadership and joint decision-making. In the majority of interviews, some sort of joint decision-making was highlighted. Often family members – and hired non-family labour – discussed decisions and their input was taken seriously. This was perceived mostly as something positive. Informal leadership largely reflects a situation when the legal owner was not the one dominating decision-making. This could, for example, be a parent who has formally handed over the farm to the next generation but refuses to let them run the farm in their way in practice. It could also be the new generation managing and running the farm in practice, as the older generation refuses or is unable to formally hand over the farm. In this way, dominating older generations affects possibilities of the new generation. Moreover, it could also reflect supporting relations where a family member helps to take the lead although the formal responsibility lies on someone else.

External side-jobs was used as a solution to not being able to hire all the family members who wanted to work on the farm, or if it was not possible to expand the farm enough to make it profitable enough on its own. In this way, they acted like a buffer, in a way for both farm economics and demographic possibilities. When farms grew, side jobs could be perceived as overburdening and something desirable to get rid of.

Animals themselves also play a part in how humans make decisions on the farm, including what kind of farming and work people are prepared to participate in. Both concerns on animal health and emotions concerning the animals played important roles for decisions around the production development such as improvement of buildings and interiors as well as focus to organic farming or animal welfare related issues. Being good with the animals, having an 'eye for animals' (sv: djuröga), is crucial for the farmers and to some extent shapes who works on the farm.

It also became evident that infrastructure can be a driver of demographic change as the need for technical skills sometimes is in the family and sometimes needs to be hired. Furthermore, who is prepared to live on, or work on the farm may also be shaped by infrastructure in terms of inadequate public services (e.g. transport), machines available to support physical labour, and farm location in relation to town or city shapes attractiveness of the farm. On the one hand, can an isolated location be discouraging to some potential labour.

None of our informants had had a clear dream to start (or work in) an egg or broiler production per se, although all but a few had known that they wanted to work with farming in some way. Rather, it was unforeseen coincidences that enabled the entrance/change to broiler or egg production. This could have been an opportunity to buy a farm that was suited for the kind of production, being asked to work for a broiler or egg farm, or the main processing company, Kronfågel, asking the farmer to join their broiler operation.

#### Factors influencing employed non-family labour on the farm

The issue of farm labour is central to the discussion about farm demographic change. In the Swedish case-study, we have encountered this theme during several interviews. The general access to labour is described as inadequate by many farmers, both in terms of finding people willing to work within farming but also with relevant skills and education level. The importance of the farmer's surrounding network became evident in terms of the practicalities of recruiting. In many cases, the employee or farmer had previous knowledge of each other. This could be through previous business relationships or through word-of-mouth. In one case, the farmer found an employee simply by meeting a friend at the supermarket. The farmer states:

“And later in the evening, when my brother was at the local store doing some shopping, he ran in to an old friend who said: “Do you know anyone who is hiring? I have a boy at home dwelling around”. “Well, send him over”, he had answered. And now he is here.”

It is important finding personnel willing to stay at the farm for a longer period, rather than someone with all the right qualifications. While this speaks to the importance of knowing the routines of a particular farm in order to be an asset, it also sets the stage for the employee’s experience of their relation to the family and other employees. The Swedish farms increase in size and intensity and are mainly run as family businesses. This is something that the employee has to adapt to upon entering the farm work. Some of our respondents have described their employer as an “extended family”, while others have discussed the issue of having to relate to the other family members in the daily work, but also in terms of opportunities and possibilities available to the employee. Family members may be first in line with regards to more strategic positions at the farm and the employee may feel that there are limited possibilities for career growth. In some cases, the employees’ freedom to define or shape their work is the upside of working in a family-like setting. One employee gives example of how he has been trusted with managing a large area of the farm work and that the employer has implemented a strategy of making sure all employees on the farm have knowledge of the different aspects of farm work. In this example, the farmer has given the individual employee large freedom to shape his work environment, while at the same time ensuring robustness on the farm, in case family members involved in the farm work would, for some reason, become incapable of labour or leave the farm.

#### External factors influencing the farm in terms of development and demographics

The network surrounding the farmer and farm is crucial for farm business development and demographic change. Co-operation, information exchange and conflicts between farmers and other actors in the sector are of great importance to the decisions made on the farm. Being able to strengthen the farmer’s individual capabilities through the relationship with others increases the likelihood of the farm business to withstand difficulties, and in the long run, survive. Many farmers described their work as rather lonely and isolated, and the interactions with other farmers constitute an arena where knowledge and experiences can be shared. This theme was also present in relation to other actors in the value-chain, since good relations to other actors in the industry help facilitate production. These relations are made up by contacts with for example feed suppliers, hatcheries or slaughters. In the daily work, the importance of neighbours was evident, as a close relationship increased the willingness to help and support each other both with work force, machinery or back-up in case of unforeseen events on the farm. Aside the relationships between farmers in a particular region, the physical location of the farm also proved to influence farm demographics. Proximity to a larger city had impact on the interest of the children pursuing

a career in farming. One respondent told that among other young people in the area, her brother was quite unique in choosing to stay on the farm. This differed much from the farms in more typical rural areas, where children being part of farm work or seen as future successors were the norm. Closeness to a city was, thus, in some cases a factor for the children not to enter the farm business but rather go seek opportunities in the city, showing the importance of the location of the farm for farm demographics. Many farms situated close to urban areas are also different in terms of business profile. Rather than being focused on conventional farming activities, these farm owners use the farm facilities as recreational housing. The demand on countryside living spaces within commuting distance to the city has resulted in higher taxation values of the farms in the nearby area, which could have influence on the financial capacity of farmers to buy and sell property as well as invest in new technology on the farm. In one case, a farmer also mentioned that the proximity to a larger city constituted a basis for a wider consumer market that they see as an opportunity. Though technology is central to today's farming practices, some farmers gave account of the issue of technical solutions being expensive. Many were positive about the innovation within the farming sector, but found it difficult to afford such investments. One respondent stated that the peri-urban location of his farm had been a strength when negotiating with the banks regarding loans.

Many farmers, especially within the broiler sector, emphasised the power position held by one of Sweden's larger processing firms. In many cases, the farmers described the industry as controlling. One farmer suggestively states:

*"The conversion from turkey to chicken. There was no choice. It was an order."*

This highlights the firm grip that the main processing company in Sweden has on its member farms and some farmers talked about the pressure towards large-scale production and intensification. The push in direction and size of the farm businesses might have a long-term impact on the need for farm labour and competence among the employees. While discussing access to labour, some farmers touched upon the problem of inadequate levels of education among potential farm labour. While, in some cases, the competence is too low, there are also cases where the universities produce graduates who are too expensive to hire. In combination with this, many entry-level agricultural schools in Sweden are closed down due to insufficient funding or number of students.

Another factor that proved to have great influence on the farms and farm businesses was the EU and Swedish market trends and competition. Swedish consumers are expecting high quality products in terms of animal welfare and food safety, and a trend of some years back is to request organic products. An issue reflected upon by many of the farmers was that the Swedish

regulations are in some cases stricter than in the rest of the EU, while the farmers are left competing on the same trade market. With higher production costs in Sweden, this results in tough competition within the EU when Swedish produce is put in conjunction with imported products. A general opinion among the farmers is, though, that the Swedish regulations are at a good level, but that farmers currently are not being paid in relation to their actual costs. None of the farmers wished to see less strict regulations in Sweden, but rather hoped to see the rest of the EU follow Sweden's lead. Many farmers also elicited the issue of being financially dependent on other actors, giving them less freedom to shape their own conditions for the farm business development. The feed prices in relation to selling prices were often given as an example of this imbalance. Given that the late-chain trade actors get the profit margins of the production value, the farmers in position as primary producers are left with very little revenue in relation to their financial inputs.

Another important set of factors related to authorities. Almost all farmers mentioned obstructing bureaucracy as a critical aspect of the farm business management. In some cases, regulations were so tough or required so much work that farmers needed to apply help from consultants or simply put in the hours themselves. In some cases, the discussion went about the need of actually hiring additional labour to cover the tasks related to administration and contact with authorities. It also became evident that the relationship with the authorities were of great importance for managerial tasks to be efficiently executed. Many farmers experienced that an increasing amount of the administrative work is put upon them, rather than coordinated within the authorities. Some told that the officers were prone to help and give advice, while others stated that they felt rather left to their own means in trying to adapt to the regulations. Another issue that arose during interviews was that farmers in different regions were prone to be subject to conflicting regulatory judgements. This is in part due to the fact the farming sector is under influence of many regulatory bodies, but also because individual officers have some room for subjective judgment when visiting a farm and making decisions about for example support payments. This ties back to the importance of the relationship between the farmer and the officer, and some farmers mentioned that these relationships had direct impact on their decision-making with regards to farm development. Many farmers mentioned that subsidies greatly affected farming activities and that these could function as a driver to change the production or hire labour. In other cases, waiting for a building permit was hindering the development or there were simply no way to expand the farm activities due to regulations. For example, this was the case for one of the egg farms, where the respondents spoke about a wish to convert more of the production to organic, but this was hindered by the fact that their older stables did not meet the dimensional requirements for outdoor space per hen.



Other external factors that had impact on the farmers, but where they did not feel they had much control, were heat waves and animal rights activists. This summer has been an example of the issues of droughts. Several farmers mentioned a lower crop yield and increasing prices on feed as factors influencing profitability of the farms. Reports in Swedish farming press have highlighted this issue, giving account of a severely strained situation for the Swedish egg producers (Henningsson, 2018). The pressure of animal rights activists, mostly prominent within the broiler sector, also exert a stress on the farmers and their feeling of safety. Apart from this, intruding activists also pose a threat with regards to spread of disease in the stables.

### Coping strategies

One issue central to the resilience concept in itself is the coping strategies farmers use in response to changes in their environment. Adaptation proved crucial for many of the farmers in order to cope with changing conditions. They pragmatically stated that one simply had to be willing to see possibilities, adapt to different expectations and constantly try to do better than the next farmer. One farmer mentioned that in order to cope with the risk of declining health, his aim was to build an organization that would persist despite illness. Some of these adaptations may require new training or more educated farm workers, as there is an increased expectation on farmers to use quality control systems such as HACCP in their daily work routine. Another way to adapt to changing circumstances is diversification. Looking at today's farming sector, there are quite few farm businesses that are entirely specialized on one production strand but have diversified their activities in order to secure income. The strategy of diversification was in many cases prompted by the fact the main production was not large enough to support full income. In one case, the farmer stated that his aim was to increase the broiler production in order not to be dependent on secondary occupations. It also became evident that the responsibility of the diversified activities often laid with the woman of the farming family, while the man was in charge of the main production.

The size of the farm business as well as the intensity of production in many cases proved to be affected by demography. Farmers either expanded or chose not to expand based on the need to cover income for another farm worker. In some cases, the farmers expanded business in order to enable for a child to come work on the farm after finishing school or in order to hire more farm labor and as a result make room for more spare time for the farmer himself. Another farmer stated that given the current key persons he had on the farm, there was no room for development of the farm business. The close relationships between farm workers and the farming families that have become evident in some interviews, might influence the farmer's feeling of responsibility towards the personnel and their interests and thus his willingness to expand the farm business further outside their expertise. In one case, where family relations also had a great impact in the



farm business in general, the two managing brothers found it crucial to build an organization large enough for them to be able to work alongside each other, but on different managerial tasks.

Though technical developments enable farming and are central to modern farming systems, they not only act as a help in the farming activities, but also affect labor costs. Advanced technical solutions allow for less manual labor and fewer working hours. New machines and robots, particularly within the egg production, have also helped eliminate heavy physical work, which could have limited the possibilities for older people to continue working. One of the younger respondents highlighted this;

*“We stacked six trays on top of each other. They each weighed 12 kilos.” [...] “Well, for someone who’s young it’s no issue, but we have people over 60 working here, and that wouldn’t have worked very well.”*

Even the older farm machines had negative impact on the farm worker, with examples given of physical vibration injuries that resulted in the farmer being physically worn when becoming older.

While all these strategies remain important for farm business development and demographic change, many farmers also mentioned the importance of growing at an appropriate speed. As one respondent neatly summed it up:

*“Yes, because if a company expands too rapidly, no one will know anything in the end.”*

Another farmer stated that expansion of the farm business would only be interesting if the farmer saw an interest of farming in the children.

#### Gender

During our interviews we heard several times that women did not get encouragement to participate in farming activities, and as a result chose to exit or not enter the farm business, or taking a minor role. The lack of encouragement, sometimes explicitly accredited to gendered expectations, led to a lack of interest and a seemingly natural solution to let the men take leading roles instead. This ties in with what Fischer and Burton (2014) write about the importance of forming a farming identity in early age. When women do enter farm business, it tends to not be as owners or managers but employees, according to informants. Further, several informants believed that women have an “eye for animals” and thus are better than men at seeing how the chickens are doing, which is an asset on the farm. Some of this work entails heavy lifting and other physically demanding work. On some farms, women’s participation in such work is enabled by technical solutions. This makes the division of labour where women work on the floor close to the animals logic. In this way, women are responsible for soft values such as caretaking of animals and



relations with employees. Women also often handled administration and sometimes economy. As one male farmer put it:

*"It is me who takes the more hard decisions and my wife more the soft ones. And the soft means the emotional and a bit when it comes to service functions. But there should be someone, no?, who makes sure that the hardware works, machines and supplies, and maybe even takes the strategic decisions, even if I have a feeling for what they think."*

On his farm, as on others, there is a clear gendered division of labour that shapes farm demography. Further, when informants described the work on the farm, there was a tendency towards the wife or mother's work on the farm not being accounted for. In some cases, both women and men talked about what women did as not really part of the farm work, but rather activities on the side or supporting activities. It was however clear, through other parts of the interview, that the family and/or the farm business was dependent on these things to thrive.

When it came to the industry of egg production, the industry was explained repeatedly as a 'man's world' and challenging for women to be a part of. There are very few women in the industry, and particularly not in strategic positions. One woman we interviewed was part of the producer's board for an important branch organisation and described it as a tough climate and that she had to prove herself to get accepted. Interestingly, this did not come up as a problem among broiler producers. In the broiler industry, there are numerous women in strategic positions and thus women/men's typical roles in the industries differ. This was also highlighted by the fact that within egg production, there was often a clear distinction between gendered tasks, with the women being responsible for picking eggs while the men were in charge of for example machinery. This type of work division was not evident within broiler production.

#### Links between codes across different themes

As explained in the section Farm/family factors affecting farm demographics above, if and how farmers choose to develop the farm is shaped by the family relations and the interest of family members. This also means that when circumstances change and adaptation or transformation is needed, the way that this is done is likely to be shaped by family relations. In this way, family relations and interest affect coping strategies. This is, as we have seen above, also shaped by gender. Gender relations and gendered expectations affect who chooses to exit or enter the farm business and what roles, tasks and responsibilities they engage in. Ethnicity also plays a role in this, as farms hire manual labour to clean out the stables but do not talk much about it. These workers are in our cases exclusively born non-Swedes, yet a few informal comments showed in some cases a reluctance towards hiring people with different cultural background and language, as there is a perceived chance that they will not stay or that they will not become an integrated

part of the working team and family. This shows the importance of social relations between hired farm labour and the farming family. This is further highlighted by the importance of the surrounding network available to the farmer when finding labour. Many employees were found through acquaintances or via personal relationships.

Relations to authorities, and what the authorities do, do not represent provision of labour to the farming system per se, in traditional terms, but it does provide a service to the farm – even if it is obligatory, on the authorities initiative (via regulations) and not always welcome by farmers – and thus affects the people and labour needed to run the farm. The outcome of relations to authorities and changing regulations also means changes, mostly an increase, in the administrative labour necessary on the farm, which leads to overtime for farmers or in some cases the hiring of professionals to deal with the administration.

Increased bureaucracy, as discussed above, is an example of an increased need for a particular kind of work and affects the labour resources needed on the farm. Some hire professionals to provide this service and some take on the increased work load themselves. In both cases, new skills are needed on the farm. Following this, the demand on educated labour on the farm increases as and it might be difficult for the farmer to recruit people with adequate level of education because of lack of availability or high salary. Further, this increasingly complicated administrative work, with the inherent risks of fines if not complying to regulations, are a discouraging factor that in the long run might lead to shaping who chooses to continue farming, enter a farm business or exit.

As mentioned in the section on gender above, not all children are encouraged to take over farms or farm tasks, and some women feel less encouraged from an early age. This means that while a farming background facilitates the entry into the farm business, this is also shaped by gender. Generational shifts are often seen as natural, as explained in the section on farm/family specific factors influencing demographics, but some shifts are, in alignment with gendered expectations, seen as more natural than others. Gender also became evident when farmers discussed strategies for diversification as a coping strategy. While it was the men in the family that was responsible for the main farming activities and the “hard” work, the females often supported the farm business through managing the side business.

As stated in the section on farm/family specific factors influencing demographics above, animal health was significant for decisions of farm management and emotions concerning the animals was important. The ability to have an “eye for animals” was, as we saw in the section on gender, sometimes considered a female quality. Thus, gendered perceptions of these skills can shape farm demographics in terms of who is hired to do what task.

A final, but interesting, note with regards to the Swedish case-study is that we have realized that egg and broiler production, as well as organic versus conventional production systems are almost entirely separated. There is basically no interaction between farmers in the different systems, and even on the same farm, there is a clear distinction between the organic and conventional production systems.

### **3.11 Arable farms in East of England, UK**

#### **3.11.1 Brief description of case-study context**

The UK case-study is set in East of England and it comprises mostly capital-intensive, large-scale arable farms specialized in field crops production, that can be either corporate or family owned. The legal structure of farms is either as a sole-trader, partnership between family members (very common) or as a limited company. The family owned farms in this case-study differ from the typical small family farms in the Belgian, Romanian, French, Polish, Dutch, Italian and Spanish case-studies, as the UK family farms need a more complex organization because of their large size. However, they are quite distinctive from the corporate farms in the German and the Bulgarian case-studies as the latter are managed by an appointed manager by the board of owners. Over the past decade, the number of agricultural holdings has decreased by about 44% but the amount of farmed area has remained stable, demonstrating a progressive concentration towards fewer but bigger holdings.

The crops grown (mostly cereals, sugar beet and potatoes) on the examined farms are generally regarded as commodities and therefore are particularly susceptible to market price volatility, which is correlated to exchange rates of the pound and global market trends. Operationally, this entails seeking to manage farms efficiently and to maximise selling when commodity prices are high. A strategy applied by various of the mini-cases is to diversify the farm income with activities that are less dependent on global commodities prices, such as tourism services, nature conservation and renewable energy production. Some farms in the sample also own some livestock but it does not constitute the primary source of income as livestock rearing is perceived as an unprofitable activity. Furthermore, it is common for farmers in the case-study to seek to enlarge the area of farmed land, in order to increase the efficiency of the use of the resources, obtaining higher productivity and profitability. However, buying land is often constrained by high land prices. As some respondents put it, contract farming might constitute the only solution for running more efficient operations and exploit economies of scale.

A first demographic aspect observed in many of the mini-cases of this farming system concerns the delayed entrance of the prospective successors. This was generally due to the inability of the

farm to support more than one family member or the desire to work outside of farming. As a result, a significant share of respondents first engaged in non-agricultural activities. A shift towards more timely successions was seen as an important opportunity for enabling successful farm transfers in the future. On the other hand, the incoming of the new generation of farmers was often accompanied by the implementation of innovative changes in the farm management. This input of new knowledge is perceived as beneficial for the sector, but it is achieved through the experience of new entrants obtained during the period of ‘delayed succession’ through experience-building, internships, or off-farm employment.

A shortage of skilled labour availability is seen as a major limiting factor for further development of the agricultural sector in the area. Paradoxically, it will most likely be the driver for further automation and technological innovation; thereby entailing the requirement of fewer but highly specialized workers. Brexit is feared to additionally cause further vulnerability of the agricultural sector by affecting the possibility to hire foreign seasonal workers during harvest season. Anticipating Brexit, some farmers tend to be more risk averse, e.g. taking advantage of the “last” subsidies available to buy machinery, as farmers expect a reduction of subsidies after Brexit.

### 3.11.1 Report on case-study results

#### What factors and drivers influence farm demographic change and how?

##### **Institutional**

With the UK set to exit the EU in March 2019, the current agricultural policy landscape in the UK is uncertain. During this period of uncertainty, farmers are either choosing to invest in large machinery upgrades while they still have the Single Farm Payment, or are taking a more risk averse stance and holding off on investments until the future outcomes of Brexit are known more clearly. It is anticipated that a new post-Brexit agricultural policy will lead to structural change on farms. The loss of the Single Farm Payment and a move towards public money for public goods is likely to result in more conservation farming, or a shift from food production to the provision of environmental services. Thus, there is the potential for demographic change to occur over the next decade as farmers adjust to a new policy regime. For example, for those already involved in conservation farming, the new policy is likely to benefit them. But for others, this could mean either adapting their production processes to the new policy, diversifying into non-agricultural environmental services, or exiting farming.

While support mechanisms can influence behaviour change, grant schemes are often complex and the time taken to complete all the documentation is often not worth the effort for the sums received, particularly for smaller farms.

Access to markets is also a key issue, with the trade deals that emerge as a result of Brexit likely to influence the type of crops grown or the nature of farm specialisation, depending on access to new or existing EU markets. Regulation of plant protection products also influences crop choices. For instance, the ban on neonicotinoids has resulted in less oilseed rape production. The potential ban on glyphosate would also impact on cultivation methods, particularly no till methods. Such uncertainties may make farming unattractive to new entrants.

### **Farm structural characteristics**

Farm structural characteristics, such as size and tenure type can influence demographics. Smaller farms are unlikely to be able to support more than one main farmer, and so successors must work elsewhere before taking over the farm from their parent(s). Farm size can be increased by contract farming for other landowners, enabling investment in machinery to be more cost-effective and increasing the total farm income. Owned farms (or a combination of owned and rented) have a more secure tenure and allow farmers to plan for the longer term. In such cases, successors are also more attached to the family farm, which has often been in the family for three or more generations. For farms with short tenancies, the focus is naturally on the short term and there are no guarantees for continuity to the next generation and so successors may need to consider alternative employment or farm elsewhere.

### **Family relationships and succession planning**

Demographics are strongly influenced by family relationships, and these relationships can determine who works on the farm and who does not. In partnership situations, if the partners do not get along or have strong disagreements about management of the farm, this can lead to one partner exiting farming or leaving the family farm, forcing the other to buy them out (and usually incurring debt).

Strong family relationships are also crucial for a smooth hand over from the incumbent farmer to the successor, allowing the succeeding farmer to both learn from the incumbent farmer, and to gradually take over some of the decision-making responsibility. Making succession plans, both financially and managerially, are important, but as was evident in the interview data it can be difficult for the incumbent farmer to discuss due to a reluctance to let go or an unwillingness to acknowledge the need to plan for retirement. It is increasingly common for potential successors to work outside of the family farm before taking over the farm. While this provides them with a broad range of transferable skills, it means they have not had the day-to-day hands-on experience of the farm that they would have had if they worked on the farm straight from school. Thus, training of the incoming farmer and a gradual hand-over of decision-making responsibility is crucial and is likely to take a number of years. Building a strong network of trusted advisors, such





as agronomists, accountants and peers, can help farmers to make more informed and better decisions.

### **Economic and financial factors**

Various financial factors influence demographic and structural change on farms. Decisions about what crops to grow and the nature of farm specialisation are influenced by fluctuating exchange rates and market prices. The cost of inheritance, with respect to inheritance tax and dividing the value of the farm assets and the farm business between a number of successors can influence both demographic and structural change. At this time, part of the farm may need to be sold off (or debt incurred) to buy out non-farming inheritors. Furthermore, successors may be delayed in becoming a partner in the family farm due to the inability of the farm to support more than one main farmer. One factor in this may be that food is too cheap and that the consumer does not pay the true price of production. An additional financial burden on the farm business is the cost of supporting retired family members.

High levels of debt can constrain how farmers farm, as the focus must be on affording to pay off the debt. For farms with low, or no, debt they are able to 'farm properly', in other words plan and farm for the long term, rather than focusing on short term gains. Low debt also allows farms to increase in size by buying additional land. In addition, it can impact on demographics, as farms with very little debt may be able to support a successor earlier than those with larger debts.

### **Labour and technology**

On many farms, access to skilled labour is an increasing issue. The reasons for this are two-fold. Firstly, farm labouring is not perceived as an attractive job, due to the low pay and long hours, with young people increasingly seeking better paid and easier employment elsewhere. Thus, there is an ageing workforce on family farms, with existing farm workers reaching retirement age. Technological improvements in farm machinery have meant that the labour requirements are perhaps reduced, but the staff needed to operate such complex machinery needs to be highly skilled and trained. Such workers inevitably demand higher salaries. Furthermore, much of the skilled and unskilled (often seasonal) workers are from outside of the UK, but farmers report a decrease in the availability of such labour, and there are concerns that this situation will get worse after Brexit. There is, therefore, the potential for a significant labour shortage in the future both in terms of skilled and unskilled labour.

### **Environmental**

Environmental drivers of structural change on farms include climate change, pests and diseases, and extreme weather events. Although environmental drivers are unlikely to directly influence

demographic change, they may lead to changes in farm specialisation or crops grown, which in turn has implications in terms of farm demographics (employment/labour requirements etc.).

#### What are the drivers of entry/exit decisions?

##### **Interest in farming and emotional attachments**

A central factor in continuity of the farm under the same family ownership is the presence of a successor who is interested in taking over the farm when the incumbent farmer retires. On East of England arable farms, there is often a successor, but increasingly they may work elsewhere before returning to the family farm in their 30s, or even 40s, to take over from their parent(s). This is often by choice, but can be because the farm cannot provide enough income to support both the incumbent and successor at the same time. Farmers' environmental attitudes and preferences will influence farm specialisation and the approach to farming. For example, environmentally-focussed farmers are more likely to adopt conservation farming or engage in environmental stewardship schemes.

##### **Pressure to enter (or not)**

For some farmers there is a strong pressure from the family to work on the family farm as soon as they leave school, or even before. For these farmers, they perceive little choice in their career options. While some are happy with this choice, others feel constrained and recognise that potential successors must really 'love' farming, and not just 'like' it in order to make a success of it. In these cases, they tend to encourage their children to work outside of the farm before deciding whether to enter farming or not. Farmers may encourage high achieving sons or daughters to pursue a career off the farm, which can perpetuate a view that farming is not for the highly academic. However, given the complexity of modern farm businesses and the need to deal with a wide range of risks and challenges - and increasingly entrepreneurial diversification activities - farmers need a wide-ranging and adaptable skill set in order to run a successful farm business.

A change in family circumstances, such as death or illness, can result in sudden and unplanned succession. In these cases, the new entrant may feel pressure to take on the farm in order for it to continue, although simultaneously they may feel unprepared and reluctant.

##### **Health, wellbeing and lifestyle choices**

For some, returning to work on the family farm is a lifestyle choice. It offers the opportunity to live and work in a rural environment and may be seen as a desirable place to bring up their own family. However, farming can be a hard and solitary job, and farmers are increasingly suffering

from mental health problems such as depression and anxiety. Health issues can lead to a change in farm specialisation in order to make it easier to manage, or can result in early retirement of the farmer and an unplanned for succession.

#### What are the most important forms of farm demographic change for the UK case-study?

This can be summarised as representing a combination of both demographic and structural changes which together serve to demonstrate the challenges faced and anticipated by East of England arable farmers, and in turn illustrate their main drivers of resilience.

#### **Demographic change**

In East of England arable farms, a major demographic change is successors delaying entry to farming and having a non-agricultural career first. This is largely because farms are not able to support more than one main farmer (particularly smaller farms), but also experiencing living and working away from the family farm may be desirable for those who have grown up there.

Changes in labour are two-fold. Firstly, although the labour requirements may be reduced due to the use of technology, labour costs are increasing as a result of the need for highly skilled labour to operate complex (and expensive) machinery. Secondly, there is a reduction in access to foreign labour, which has been an important source of both skilled and unskilled labour. This issue is likely to intensify after Brexit and, along with a decline in the number of UK young people wanting to farm, agricultural labour shortages are likely to continue.

#### **Structural change**

A number of structural changes have occurred on East of England arable farms over recent decades. These include an increase in the use of technology to make farms more efficient and productive. Farms are also increasing in size, again to be more efficient and to ensure the best utilization of costly farm machinery. In response to market pressures, policy, regulation and environmental factors, arable farms may change the crops grown, the nature of farm specialisation (for instance, moving away from or investing in livestock, conversion to organic or adopting no-till or conservation farming techniques) or engage in non-agricultural diversification (such as agri-tourism, biofuel or renewable energy production, and reusing farm buildings for other purposes such as horse stabling or office lets).

## 4 CROSS-CASE COMPARISON AND INTEGRATIVE FINDINGS ON FARM DEMOGRAPHIC CHANGE PROCESSES

### 4.1 Introduction

In chapter 3, evidence was provided on the diversity and context-specificity of factors that influence farm demographics in a certain region and farming system. In this chapter, we discuss the generic themes that resulted from the comparative analysis, in order to create an overview of the factors that impact farm demographics. These factors are presented below in a structured way, alongside with the different parts of the overall picture they create, starting with the process itself, then the influencing factors that have a more direct impact on the demographic decision-making process (sections 4.2 and 4.3), followed by a discussion on the influencing factors having a less direct impact on the demographic decision-making process (sections 4.4 and 4.5).

At the very core are the farm demographic processes themselves. Farm demographics and farm demographic changes at farming system level are the result of the individual entry, exit, non-entry and non-exit decisions of all farm stakeholders that are active on the farms of the farming system. Based on the interview data, we have conceptualized the farm demographic change process on farm businesses as consisting of three conceptual stages. These stages are conceptual as they help making sense of the data and structuring the findings. Thus, they should not entirely be understood as chronological phases in time, as some of these conceptual stages might (partly) overlap in time, and the chronology also depends on whether the point of view of generation  $x$  or generation  $x+1$  is taken. The cyclicity of the farm succession process in particular has already been pointed out by Calus (2009). We adapted her framework to our observed cyclic pattern of farm demographic processes (Figure 1). The three conceptual stages are (1) the formation of a successor's identity (SI), i.e. the phase in which an individual identifies himself/herself as a successor (or not); (2) the farm transfer/succession process, i.e. the phase in which a farm is transferred from the successee to the successor; and (3) the farm development, i.e. the phase that represents the part of the farmer's career in which (s)he unfolds the farm business in terms of organizational structure, size and management approach. Exit and non-entry decision can happen at any of these three stages. During the formation of a successor identity stage, this identity is not always formed, leading to exit and non-entry even before the transfer/succession process itself starts. During the transfer/succession process, several factors might jeopardize this process, leading to exit as well. Last, during the farm development stages, certain events might lead to exit decisions, especially unanticipated events. Evidently, farm demographics are also influenced by the creation of new farms from scratch, but since this is a rare phenomenon in most agricultural sectors and its influence on system-level farm demographics is negligible compared to farm succession, it is beyond the scope of this study.

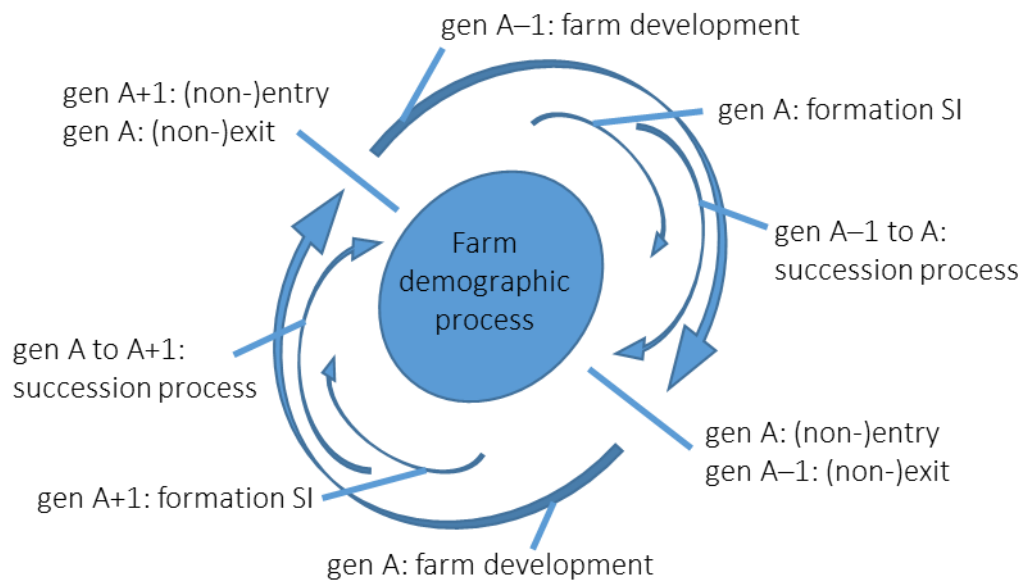


Figure 1: Visual representation of farm demographic processes for two subsequent generations. Own compilation based on interview data and inspired by Calus (2009).

In the next sections, the factors influencing farm demographic change are presented and explained step-by-step, focussing on different parts separately. We found that farm demographic processes are influenced by many different factors, which can be categorized into different “spheres of influence”; according to the system level in which they are situated. These spheres of influence are the personal, the farm and the family, the farming system and the society sphere of influence.

## 4.2 Role of personal factors in entry, exit, non-entry and non-exit decisions

A substantial part of the interviewed active farmers spontaneously started talking about why they value farming and the farming life at some point during the interview; recounting a number of personal experiences and emotions that, from their perspective, define the decision to become/stay a farmer. When respondents (all categories) were asked what influenced their decision to become a farmer, or not, their first answer always encompassed personal aspects that are bound to the unique situation a person is in. Therefore, a first ‘individual’ sphere of influence was defined that includes all characteristics that are bound to a specific individual situation (Figure 2). The mechanisms through which they affect farm demographic changes are mostly similar in the different case-studies. The within case-study differences are often as substantial as the between case-study differences, confirming that this sphere of factors is mainly, though not exclusively, person-specific rather than being specific to a region or a farm typology.



The specific situation and personal characteristics of an individual often play a crucial role in entry, exit, non-entry and non-exit decisions. The factors described below are influencing farm demographics in a direct way. Someone's *personality and personal background* is equally influencing all three farm demographic sub-processes (formation of SI, farm succession process and farm development), while *ability to cope* contains factors that mostly affect how daily farm work is being organized and how farm growth and development evolves, thus the third sub-process. The comparative analysis across cases revealed that how these personal factors impact farm demographics, and their relative importance compared to factors at farm and family, sector and society level, is very similar across all case-studies.

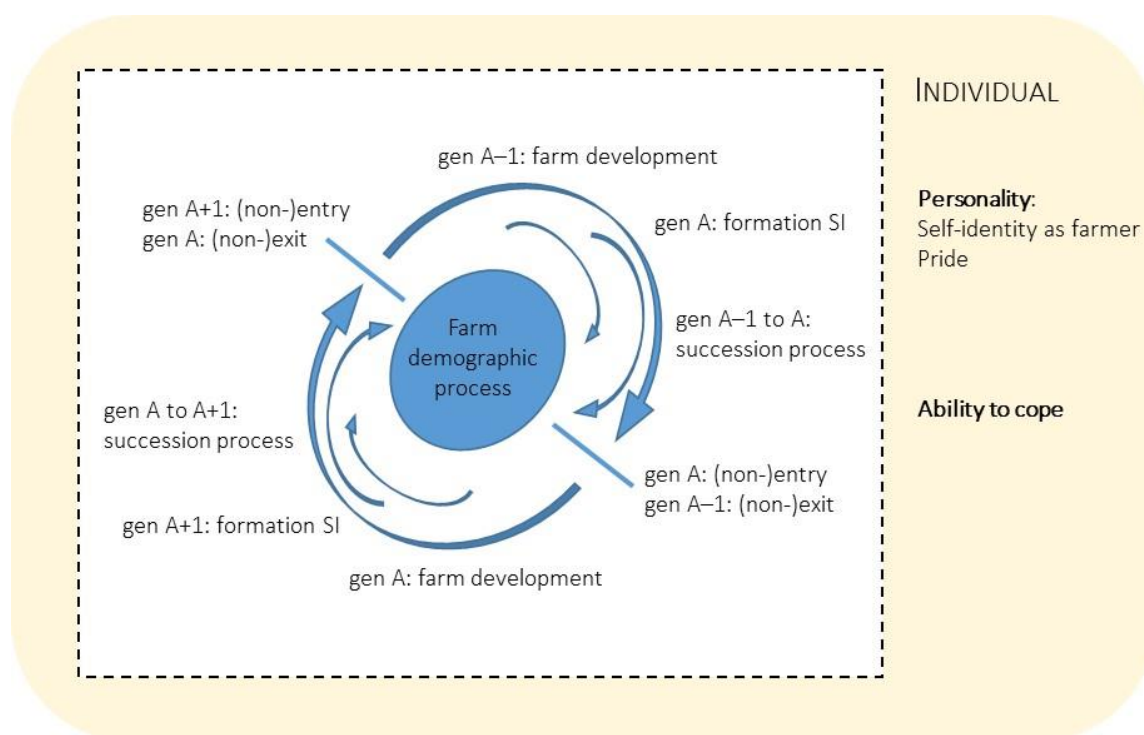


Figure 2: Visual representation of farm demographic sub-process for two subsequent generations, and impacting factors belonging to the individual sphere of influence

#### 4.2.1 Personality

Enjoying the farm work or achieving personal satisfaction out of the farming activities is one of the key factors described by respondents leading to entry and non-exit decisions. Respondents name several features specific to the occupation that cause job satisfaction from farming. First, working close to nature and the harmony of the seasonal rhythm that dictates their daily farm work, and the versatility of the occupational activities, were perceived as a pleasant characteristic of the farming life. Related to this, the interest field of a person is interrelated with the consideration to go or stay into farming. Second, farmers explain that being self-employed gives



them the freedom to decide on their daily schedule, allowing them to adjust work to their private life. Besides, it implies that they are really working for their own advantage, which gives them more satisfaction than working under the supervision of an employer. Some respondents even describe being a farmer as some kind of vocation. In sum, the occupational choice is often a lifestyle choice in which the occupation strongly contributes to the **self-identity as a farmer**, which is illustrated by the recurring remark *"I simply cannot imagine myself doing anything else"*. This also relates to the specialization and management of the farm. Executing a major change on the farm, conversion to organic farming for instance, was often either a secondary outcome of the transfer process or the result of a personal process wherein the farmer ended up not feeling comfortable anymore with the original way of farming. In this regard, it was remarkable how emotional attachment to the livestock was found as an important factor in the German, UK, Belgian, Spanish and French case-studies. For example, a settled successor from the UK case-study explained how difficult it was to convince his father to get rid of the loss-making dairy activity and instead install a livery as an alternative income source. Many similar situations were observed, as illustrated by the following quote from the French case-study:

FR MC2R1 (male, successor): *"In my life, I haven't seen my father crying often, but when the two trucks came down to take the 100 cows in the yard when he retired, for him it was a big tear and he clearly would have liked it if there would have been a continuity with his flock on the farm because it was really the heart of his job for him."*

Furthermore, **feelings of pride** were observed to play a role in entry and non-exit decisions. On the one hand, farmers can be proud of personal achievements and realisations they have made. For instance, regarding the farm management, some respondents showed feelings of pride after having successfully implemented more sustainable practices on their farm. On the other hand, in the context of family farming, being born and raised on the farm, and early involvement are factors that feed the self-evidence of taking over the family farm. Pride can be rooted in the tradition of farming that has been in the family for years. Similarly, the emotional attachment to farming as a family tradition can be a driving factor for entrance. This can also relate to heritage: having the particular farm or farmland in family ownership for several generations and keeping it that way, was observed to be an important reason for farm continuity. We illustrate the potential impact of legacy by one of the French interviewees. He took over the family farm, despite it had initially been planned that a friend of the family would take over after his father. When it turned out that this person was unable to take over the farm due to financial restrictions, the son could not imagine selling the farm and *"pocketing a cheque"* that, in his view, represented his father's and his grandfather's lifework.

#### 4.2.2 Farmer's ability to cope with physical and mental implications of farm work

This factor is intermingled with the personality that was discussed in the previous section. For example, the ability of a farm head to come up with creative solutions, to implement a smart risk management and business plan, or to conduct a resilient coping behaviour in general, are characteristics that enable entry or non-exit. The reason we distinguish someone's personality in terms of values, emotions and beliefs (previous section) from someone's ability to cope (this section), is because our results showed that, while the former is really an intrinsic aspect of someone's personality, the latter is also influenced by factors external to the individual decision-maker, such as support from family members or other farm stakeholders, legal framework, farm adaptability, etc. Those factors that enable or disable someone's ability to cope will be discussed in sections 4.3 to 4.5.

Throughout all case-studies, respondents highlight that working in agriculture requires high personal efforts, both physically and mentally, while they feel their efforts are not always being mirrored in terms of monetary return. The hard physical work, the need for a farm manager to be full-time available, the difficulty to go on vacation, the high financial risk, etc., are factors intrinsically bound to the farming occupation that challenge farmers to maintain a healthy work-life balance and demotivate possible successors, leading to non-entry.

First, high workload referring to the field work can potentially lead to physical health issues. In fact, health issues were often a leverage towards implementing a major demographic, structural or managerial change, for instance investing in labour-saving technology, exit or farm transfer. Health issues of older respondents are often the result of years of physically intensive work, and were observed to impact farm demographics directly by accelerating or forcing an unanticipated transfer/succession process which often leads to (un)planned early retirement, exit and non-entry.

Second, high workload, referring to both the field work and the administrative farm work, can cause psychological pressure on farmers and farming families, especially when combined with other challenges such as financial problems. A lot of farm heads describe farming as a rather lonely life, except in the Bulgarian case-study. In some of our case-studies (Sweden, UK, Belgium), the social isolation was explicitly named as an additional challenge that can further encourage mental health problems. Respondents hereby refer to the long working hours, spending most of the time alone in the field or with the animals as only company. Regarding the mental implications of farm work, only a few respondents raised the issue of depression, suicidal thoughts or anxiety that they have observed with colleague-farmers or experienced themselves. Nonetheless, there were several examples of respondents dealing with mental challenges by their optimistic spirit, their preference to work alone or being their own boss, or by participating in various social activities.

Support from family members and direct network in this context seemed important. These observations thus point out that someone's personality, mental capital, and specific circumstances concerning direct network, can be crucial for non-exit.

Third, regarding the lack of monetary reward for the high workload, some respondents indicate that when they think about it rationally, they do not understand why they are staying in agricultural business. Some of them feel desperate about the current situation of low profitability and lack of future perspective in the sector, discouraging their decision to enter or stay in the sector. Their motives are largely explained by the factors discussed in the previous section (enjoying farm work, emotional attachment to the farm, traditions, pride, etc.).

To conclude, stories from respondents who chose to enter agriculture indicate that intrinsic motivation is more critical in entry and non-exit decisions compared to pecuniary incentives. In contrast, evidence from exiters and non-entrants illustrate that the perceived negative aspects of farming cannot be outweighed by the personality aspects. Thus, the research results point out that only unconditional willingness and passion for farming – or for farming as a lifestyle, because often the choice for the occupation is directly associated with choosing for a rural life in and/or to be self-employed (see further) – can outweigh the generally perceived imbalance between workload and income. We illustrate these findings with some quotes:

PL MC8 R1 (male, successor): *“even if I would not get this 100.000 as a young farmer, I would continue to run the farm. Because I like it anyway, because I prefer this rural landscape rather than urban.”*

BE MC2R3 (female, non-entrant): [talking about how she liked to grow up on a farm, but also the disadvantages of working with family members] *“And then also the insecurity... For me, it doesn't outweigh the enjoyment of farming and being proud on it. (...) For example, I like to go on vacation, very much. That is also something that they did not understand back home. We never used to go on vacation. (...) Everything happens in function of the farm. From my point of view, you don't get much in return. But that is also because I don't love the cows as much as, I mean, I care for them but I don't really have a connection with them... And I am, I'm not saying that I am not proud at all on our family farm but... It is hard to explain”*

UK MC2R1 (male, successor): *“I love being outdoors, and love the countryside. I knew I would like farming, I knew liking farming wouldn't be enough, I knew I'd need to love it, that was the real question, am I going to love it?”*

It seems that on the personal level, when the formation of a self-identity as a farmer has been rather weak due to various circumstances, the hard life of a farmer, both physically and mentally, combined with prospects of low financial rewards leads to a high rate of non-entry decisions. Our interview data suggests that the formation of a self-identity as a farmer is crucial for entry and succession, and when this self-identity is not formed, the prospect of having a hard job physically and mentally combined with often low rewards in many case-study farming systems leads to low succession and a high level of non-entry decisions. Indeed, both entrants and non-entrants talked about the hardship of farming. One of the key things that seems to distinguish them is that in the former, the formation of the self-identity as a farmer has been much stronger. The formation of a self-identity itself is influenced by many factors, some of which will be described below. At this point, however, we suggest that many of the policy instruments implemented to ‘solve’ the young farmer problem are not targeted to this specific stage, but assume that the self-identity is either not important, or has already been formed.

### 4.3 Factors at farm level that influence farm demographics

The second sphere of influence contains the dynamics within the mini-cases, but on a higher level than the individual person, that play a role in farm demographics (Figure 3). Farm level dynamics refer to the entirety of (1) interactions between farm stakeholders, who are family members in most of the mini-cases but could be owners and workers and (2) dynamics between farm stakeholders and the farming life and the farm activities. In other words, farm level dynamics are processes that take place within the ‘system’ of each farm. In other words, farm and family aspects are influencing farm demographics from within the farm system. A strong interplay between processes at the individual and those at the family/farm level was observed. More precisely, entry/exit decisions of farm stakeholders influence decisions of other farm stakeholders on the one hand, and decisions about the farm structure and management on the other hand; and vice versa.

#### 4.3.1 Farm-family characteristics that affect the formation of the successor’s identity

When respondents talked about how they ended up choosing for the farming life, conceptualized as having formed a successor identity or a self-identity as a farmer, they mentioned personal experiences and the various interpersonal relationships that were part of these experiences. One of such experiences that was common for a lot of respondents, is *growing up on a farm*. The experiences of farmer’s children when they grow up on a farm often support, yet, sometimes obstruct the formation of a successor identity. Even if farmer’s children are not actively encouraged to continue the farm, or even when parents discourage them to go into farming, they are typically still taking part in the daily farm work. As a result, they are exposed to the farming life and experiencing the consequences from early age on. Some of the successors reported that



in this way, they had been able to build up knowledge and skills that appeared to be very useful when ultimately becoming the farm head. Nonetheless, early involvement was also seen as a factor affecting the decision of non-entrants: they usually point out how their childhood experiences (mostly being confronted with high workload and few leisure time) taught them that farming was not an attractive future in their eyes.

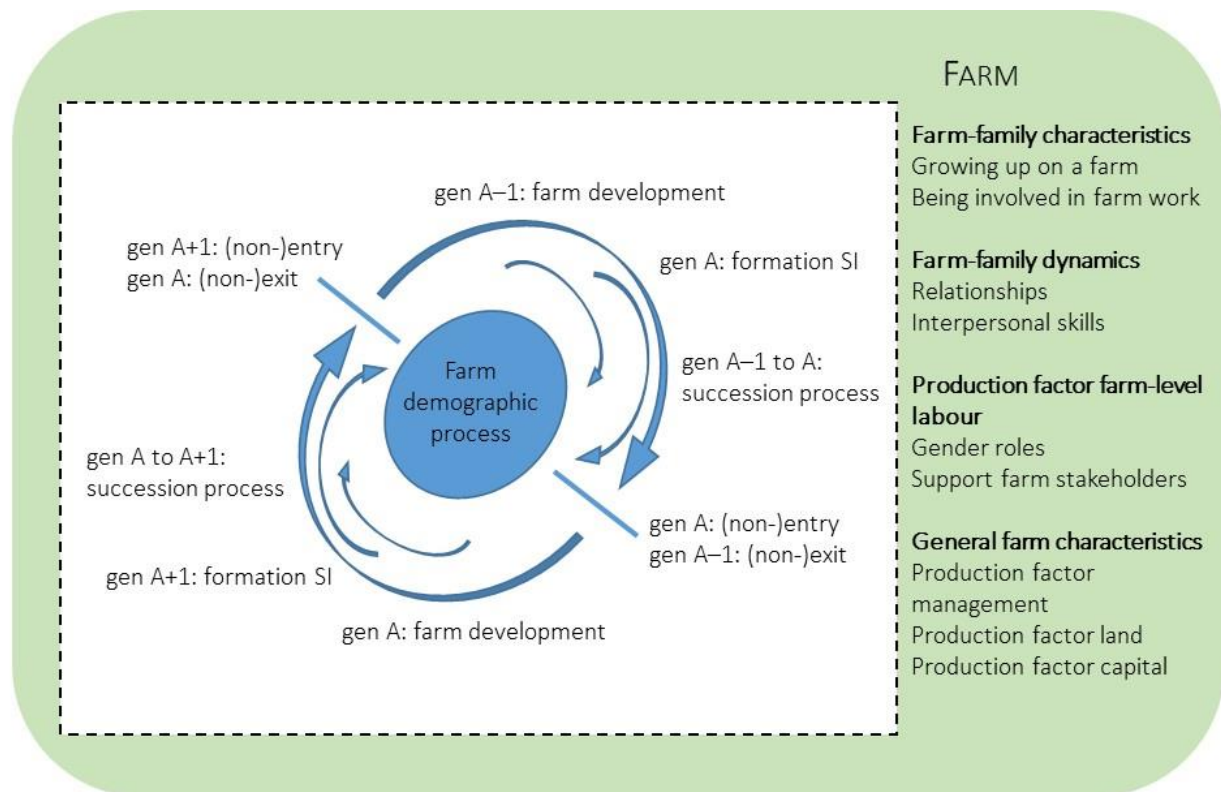


Figure 3: Visual representation of farm demographic sub-process for two subsequent generations, and impacting factors belonging to the 'farm and family' sphere of influence

The tacit knowledge achieved by respondents who were *involved in the farm work*, either by growing up on a farm or by working as a farm helper for a long period can be interpreted as the result of an informal learning period that facilitates farm transfer. By being familiar with the farm history and the current obstacles or successes, the successor can gradually evolve his vision on how to continue the farm while being informed about the farm situation 'from within'. This also counts for corporate farms, where we found examples of non-family potential successors that have been employed on the farm for several years.

It was noticed by some respondents that entry can effectively be enabled by identifying this learning period more formally, for example in the context of family farming by making the potential successor a formal employee prior to the transition. This way, the complex and long



process of succession, typically bringing a lot of administrative burden with it, can be spread throughout time so that stakeholders have time to deal with legal and administrative issues. Following this learning period or formal training, the transition between the successor and the successee is described as a natural step in the farm business life cycle. Next to growing up and nurturing circumstances, formal education in agriculture was regarded by the majority of our respondents belonging to the categories 'successors' and 'active farmers' as a logic and important step in their successors' identity formation. In the context of corporate farms (DE, BG), the importance of offering trainings and scholarships to create well-qualified employees was stated as an important but risky investment in the corporate case-studies. Risky because of the chance that trainees work elsewhere after their training, which implies the farm manager has no return on investment.

Family members are the preferred option when considering successor candidates, and this fact can influence the formation of a successor identity. A strong evidence on this was found in the context of one of the French mini-cases, where a retired farmer told that he had already trained a young person (non-family member) to take over the farm, but when the son ultimately decided to return and take over the farm, he got the full heritage. The retired farmer even stated that he would have made more investments had he known his son would be taking over the farm. The farmer did coach the other candidate to take over another farm. Nevertheless, succession by a non-family member occurred as a possibility in some of the case-studies (DE, FR, SE, NL, BG, BE). Mostly these were cases of interfamily farm transfer, where key relations such as marrying into a farming family enabled entry. Sometimes, non-family successors were found through relatives or acquaintances.

Throughout all case-studies, except the Bulgarian case-study, respondents, and especially succeesees showed torn feelings about being a farmer or about the insecure farm continuity. The degree with which succeesees express their doubts, impacts how they inspire or discourage their possible successors towards entry. We illustrate this ambiguity using the following quote:

PL MC3 R1 (farming couple): *"We still hope that he [their son who studied abroad] will take over the farm. However, we are wondering if there is any sense in it. How will the economic situation change? We are not sure if it makes sense to put him in this struggle."*

Our mini-cases also covered some situations where it seemed like the potential successor was experiencing pressure to take over the farm. Such cases occurred in the UK, Polish, Romanian and Belgian case-studies. This seemed to be a delicate subject and was not always discussed openly in the interviews. The above ambiguity could be an explanation for forcing a child into the



successor role, but it can also be that emotions, traditions, power relations within the family, and culture play a role in farm demographics in these cases.

Last, it was observed that the presence of a supportive partner can affect the (non-)entry decision, just like it affects non-exit decisions, as will be explained further.

NL MC6R2 (male, non-entrant): *“If I would like to be a farmer when I marry someone who wants to farm? Good question. I might certainly consider it then; as we would do it then as a couple, together.”*

#### 4.3.2 Farm-family dynamics affecting the smoothness of the transfer/succession process

After the successor identity has been formed, there are many features that can either enable or obstruct the succession process, thereby indirectly determining the effectiveness of the completion/output of the entry decision. These factors can hinder the farm transfer process to such an extent that even after the successor identity has been formed, the farm transfer process fails, leading to exit and non-entry. Many of these factors have to do with fiscal, administrative, legal and financial practices that are often specific to region and farm types; however, a major category of factors that can obstruct the farm transfer process are of interrelational nature, related with the farm and farm family situation, and are therefore discussed in this section.

Our data demonstrate that the *relationships between different farm stakeholders* (in most mini-cases: family members) play a role in all three farm demographic sub-processes, but are crucial during the farm transfer process. Throughout the mini-cases, there were several situations where a bad relationship between different farm stakeholders was hindering a smooth farm transfer, or where a good relation between siblings enabled the succession process. The presence of multiple heirs, among which only one takes over the family farm, might complicate the succession process and increases the importance of good relationships and interpersonal skills. Similarly, the division of farm shares among different farm owners is delicate but crucial during the farm transfer process. Whether the farm is ultimately assigned to one or more successors, a fair division among multiple inheritors/farm owners is perceived as fundamental to avoid future vetes that might induce additional pressure on the successor; especially from a financial perspective. Discussions about money, like deciding on fair wages between different helping family members, can be quite demanding for the different stakeholders on a farm; complicating the succession process. Again, a joint working out of the succession plan, including preventive agreements on what procedure will be handled when certain situations of disputes arise. This way, the financial aspects of farm succession can lead to farm structural change. For example, multiple heirs claiming their legacy may result in fragmentation of the land (regarding surface and production choices); an outcome that is not always desirable in terms of efficiency. Next to farm ownership, land inheritance



seemed a complicated and sensitive topic. It was seen to potentially hindering entry, for example, a Romanian old farmer refused to set up the succession of the farm with his son-in-law, despite that he wished the farm to be continued, but avoiding animosity among his children turned out to be more important.

Generally, the farm succession process was described by our respondents as a rather self-evident process, naturally resulting out of (un)foreseen circumstances and in parallel with the family life cycle. If the prospective successor (as discussed, by default a family member) does not complete the conventional entry-through-succession process, the incumbent farmer might be confronted with the realization that there are no skilled people to hire because there is a problem of profound knowledge transfer as a result of the lack of the aforementioned informal learning process.

First, **an early signal from a successor** who is willing to engage in the continuity of the farm entails a timely planning for the succession process. The other way around is equally important: our data provide consistent evidence that the early presence of a potential successor, regardless of the expressed commitment of this one, affects the investment behaviour of the incumbent generation. Farmers tend to be more eager to reflect on and to create opportunities regarding the future farm development when they are also anticipating on the entry of the prospective successor. In this way, the investment behaviour of the former generation can impact the attractiveness of the farm for the successor to be taken over.

PL MC5R1 (male, retiring farmer): [talking about the need to invest in more innovative storage facilities for fruits] *“but you need to have long-term plans for that, see an eventual successor. (...) We anticipated that nobody will want to stay here, we didn’t force any of the children, and it happened that way and there won’t be a successor, and so why invest? And from what?”*

Second, **making succession plans and anticipating on the entrance from early stage** can prevent problems relating to intergenerational overlap, such as conflicts between family members, or the farm being too small to provide enough income. Such planning requires good communication and mutual trust between the successee and the successor. Their relationship should build on mutual respect and room for discussions and openness to each other’s idea’s and experiences. Interest fields and how they impact farm structural and management decisions (see section 4.3.4) were associated with age of the stakeholder, especially when talking about new innovations or newly implemented farm practices and how this relates to the succession process. For example, interest field can affect the farm management approach by e.g. the application of technological solutions and subsequently impacting the result of the succession process; e.g. when the successee refuses to implement such changes while the successor is more interested in managing a farm in other technical ways.



Third, the **role of the successee** was observed to be crucial for the succession process. Successors argued that a successee should be able to let go the farm emotionally, to be supportive before, during and after the formal succession, not hindering the successor in developing the farm in the direction that the latter believes in. Non-family employees also mentioned the efforts of the older generation to involve the successee in the farm work while treating him/her in a familiar way as being helpful. There were multiple examples of fathers (incumbent farmers, successees) who were not able or not willing to let go the farm work or adapt the farm management

UK MC2R1 (male, successor): *“And a lot of the success or failure, falls on the generation who are there already and allow you space to come in.”*

Fourth, a preference for **a succession process being implemented step by step** was observed, where both knowledge and ownership transfer are gradually implemented; shared decision making becoming increasingly the state of affairs; with handing over legal ownership being a later but crucial step for the new generation to feel confident and respected. Intra-family succession is in this way enabling entry, because of the evidence of daily cooperation and contact between family members, which allows for the development of a gradual succession process in a subtle and natural way. There were multiple examples where succession was the result of abrupt events, like the sudden death of the farm head accelerating the succession process, but forcing the successor to jump to the endgoal of the process. Such situations cause stress on the successor and usually impede the succession process, and can trigger non-entry.

Last, it seems to become more common that the transfer/succession process is **a lengthy process**, where potential successors first go abroad or start their farming career with an internship on another farm or even at a company in a totally different sector before returning to the farm. In this regard, potential successors are not only influenced by the incumbent farmer (who often explicitly acknowledges the value of such experience-building), but also by non-farming/non-entrant acquaintances. This observation counts for all case-studies. It implies that the successor’s identification process (Fischer & Burton, 2014a) is either delayed or only partially accomplished. Some respondents link this phenomena with the desire of (young) people to travel, and that going on vacation on a regular base is now a standard in contrast to a few decades ago. Anyway, the impact on entry was severe in some of the case-studies (SE, ES, DE, BG, PL, RO).

UK MC2R1 (male, successor): ***So, why did you go and do something else, and then come back again? What was your motivation for that?** “Probably three reasons. One is, I wasn’t hugely interested in farming, when I was in my teens and early twenties. I used to always work on the farm in the summer, but I now look back I worked as a labourer, I had no idea about decision making. So, I wasn’t that interested. And the second reason, I was probably interested in doing other things, I*

*wanted to get away, to live in different places, to really stretch myself, and I didn't see farming as, because I didn't have much exposure to farming, I didn't see it as an exciting place to be. But, also thirdly dad hasn't given me a huge amount of advice in life, but one of them is, go and do something, even if you're going to be, aged 19, going to come back to the family farm, go and work, even if it's for a neighbouring farmer, go and do something else first."*

#### 4.3.3 Production factor farm-level labour

Most of the studied farms depend on cheap and informal family labour, where roles and tasks are typically divided so that different stakeholders on the farm business are each responsible for different areas of the farm business and are not interfering too much with each other's work, but they report to each other in an informal way.

For some of the mini-cases, the farm work is (officially/formally) mainly carried out by one person (the main farm operator). This leads to a high workload and stress, which is typically mitigated by the family members. Support from family members (both financially and emotionally, but also practically in terms of family labour) was in this context a recurring theme. First, emotional support arose as a topic in various situations. Especially when talking about other topics like high workload and social isolation (as was discussed above), the role of the partner and other close family members is declared to be crucial in order for the farmer to find the courage to continue. It contributes to mental capital and impacts the motivation and ability of the farmer/farming family/collaborators to endure hard times. Farmers sometimes very explicitly acknowledged the role of their partner in their ability to cope with the volatility of the family income. The presence of a supporting partner was remarked to enhance the mental capital of the farmer/family and ability to endure a challenging situation on the farm. Next to emotional support, low profitability on small-scale family farms is often outweighed by either relying on financial support or relying on cheap family labour, or a combination of those two. Family members, and especially spouses, were often highlighted as an important support because of the off-farm income they establish. Family members can provide crucial support by dedicating time with no labour costs. This way, a typical barrier for new entrants can be relatively easily overcome by the family farm model by appointing the required amount of labour force without threatening the financial situation on the farm. In general, we conclude that good relationships between family members or farm stakeholders were seen to positively impact farm management and continuation.

Because of the above reasons, the family farming model is valued by a lot of respondents. The high workload can be compensated. Despite the high workload, the freedom of being able to organize your own schedule implies that the farming life can be harmonized with the family life in an optimal and efficient way, which was stated to positively impact work-life balance. This factor

is thus highly influencing the factors that were discussed under the ‘individual’ sphere of influence.

NL MC3R1 (male, new entrant): *“Also, the daily activities of life, you can schedule them in a way that you braid everything together and your own family, let’s say, with the children etc., I think that is one of the most beautiful dreams. That you can do it together, and organize the time together. Being a farmer, of course you have work peaks during autumn and spring and pressure and busy and so, but for the rest, you can organize your own agenda, the work just has to be done in the end. When and how we do it, we should decide ourselves because we are the boss, but I get my daughter very often from school, and I bring her. I like that.”*

In all case-studies, the trend at sector-level towards less labour-intensive farming by investing in technology and automation of the production process had either just started, was ongoing or was in an advanced stage. Labour is often seen as a limiting factor because it is an essential yet uncertain input factor. Furthermore labour becomes more expensive and automation was stated as a strategy to be less dependent on the labour market. Respondents associate this trend with the need for less, but more skilled labour. For example, they acknowledge the need for people who are able to correctly handle high-tech machinery, or people with an education in risk management behaviour to cope with extreme weather events, or people with the managerial skills to run a large farm with a lot of employees and logistic demands. Finding such specific skilled labour is cumbersome in most of the case-studies and it was often seen as a threat towards the future employment rate in agricultural sector.

IT MC2R1 (male, prospective successor): *“According to my father’s memories, harvesting usually started in September and ended in December, deploying 10-20 people to do the job. With mechanization, this reduced to three people.”*

Although most of the studied farms exclusively relied on family farm labour, the importance of having an external employee was in some cases explained as an important condition to relieve the family from high workload and make the farm business less vulnerable (in case of illness etc.). Hiring employees was sometimes named as a strategy to increase farm work efficiency, f.e. respondents who particularly enjoy some aspects of farming (e.g. working with the animals, riding the tractor) and thus decide to focus on these, while handing over other activities (e.g. handling administrative work) to an employed working force. Trust and mutual respect between the external employee and the family members appeared to be fundamental in order to increase the potential of a long-term fruitful collaboration. The value of an employee who has been involved in the farm for a long time is emphasized by some Dutch, German, French, Swedish and Belgian respondents. Some of them were describing the crucial role a particular person has played during



f.e. a tough period on the farm, others were only discussing the potential value of such a person on who you can trust in a hypothetical way.

In the Swedish, Bulgarian and German case-studies, there were farm situations where both farm employees that are part of the farming family and external farm employees are working together on a farm. Sometimes this caused tensions between the two parties, especially between the stakeholders holding a leading position. However, these tensions appeared to be of minor nature and the large size of the farms with such labour organization contributed to decreasing the contact between family members and other employees. Also, Swedish respondents who are working with external employees observe that some of their colleagues are uncomfortable being employers and would rather prefer to do all work themselves, partly because they are not willing to delegate some control. This is remarkable, as Swedish respondents who are working with/in teams do regard the added value of more people working with the animals (giving a better overview of their current status). Nevertheless, the risk of competitive behaviour resulting in negative interpersonal attitudes - like bullying - was mentioned by some respondents. On the other hand, there was a Swedish mini-case where both the current farm owners and the female employee who worked on the farm for three years talk about their relationship transcending a strict business character; referring to each other as extended family. There were similar examples in the Bulgarian, German case-study of employees and farm holders interacting with each other in a familiar way; mostly to enable the cooperation and make the daily farm work more pleasant. Furthermore, in the context of corporate farming, the hired labour was not always contributing to the overall profitability of the farm, sometimes rather damaging, and the reason for external labour maintenance was rather safeguarding the positive perception of the social community on large farming businesses:

DE MC6R1 (male, farm owner): *“Maybe one or two [employees] too much, but that is also a bit of the social responsibility. You don’t just send someone five years before retirement home, fire or lay off. You just don’t do that. It is so.”*

From the employee’s point of view, we use the example here of a Swedish respondent (MC3R1) who had been given the opportunity to unfold her career by being given more responsibility over one farm activity throughout the years, being originally an outsider on the family-owned farm. The central mind-set – that was observed throughout all Swedish farm manager respondents (see quote below) – of all employees being equally important on the farm and the perspective of being able to become an equally valuable key profile on the farm business seemed to mean a lot for this respondent and prevented exit.





SE MC6R1 (male, farm head): *"If you are to cross a bridge, which plank should you remove? It will be just as bad whatever you do."*

It is exactly this mind-set that was observed in the context of family farming to be a strength in the overall functioning and resilience of the farm. Additionally, Swedish employee interviewees stated to prefer being hired on family settings rather than on corporate farms. As stated, Swedish farm managers report the value of non-family employees, but at the same time they feel reluctant to hire more personnel as they feel not comfortable with how to handle the recruiting process and pick the perfect candidate.

NL MC5R2 (female, assisting spouse): *"Doing things together and getting the work done together – that is the power of farms!"*

The observation regarding type of involvement women and men have in relation to the farm business also consequently recurred throughout all case-studies. Typically, women play an administrative role on the farm; handling finances, insurances and accountancy activities. Also, farm diversification activities like an on-farm selling point were in most cases performed by female stakeholders. Often, they distinguish themselves over the other farm stakeholders by their social skills: e.g. being a moderator in discussions or in the succession process, or carrying out specific farm activities, for example, in the Swedish case-study, women were viewed to naturally have a better hand with the animals. Also, while ownership rights and management roles are largely administered by men, most of the female respondents are employees rather than farm owners. In the Romanian family farms, ownership is mostly self-proclaimed by the male farm head as a result of intermingling of statuses on the household level and on farm level. But also in the other case-studies, ownership is intuitively allocated to male farm stakeholders.

Both male and female respondents tend to agree on the farming sector being dominated by men. Sometimes respondents interpret these major gender trends as 'a matter of interests', other times they associate it with intrinsic prejudices of the public opinion. A female Swedish respondent explains that women in the egg and broiler sector are mostly responsible for the dirty work, but then again she puts this into perspective by adding that in riding stables, there are mostly girls as well, indicating that she believes there can be a correlation between gender and interests. Nevertheless, she also pointed out that people tend to react surprised when seeing a woman driving a tractor. As such, even though gender was not explicitly discussed in all case-studies, there is some evidence that the different treatment of boys and girls on farms, whereby boys are much more socialized into the farm life, can lead to a weaker formation of a self-identity as a farmer in female farm children.



PL MC9R1 (male, active middle-aged farmer): *"my wife is adapting for now and is helping in harvesting, growing and weeding. Such gentler women's tasks."*

#### 4.3.4 Farm characteristics that influence farm demographics in general

Farm management, farm structural characteristics and adaptability of the farm business are interfering with demographic decisions, often by being the building blocks of strategic farm continuation and intermingling with the succession process. Features intrinsically bound to the farm situation concerning farm structure, farm organisation and farm management may interfere with certain demographic decisions and farm continuation. This section covers several farm-level conditions that affect farm demographics but in an indirect way, not by directly enabling or disabling transfer/succession, but by building conditions that interfere with the farm demographic change process.

##### Production factor farm-level management

When reflecting on the long-term survival of their farm, and what strategies to adopt in order to ensure continuation, respondents also often anticipate on future trends they expect:

FR MC9R2 (male, successor): [talking about the option to enlarge the farm] *"I know that in 10-15 years, farms will be available, so there will be opportunities to expand."*

The current farm specialization and farm structural features impact which demographic decision is made. More specifically, how well these correlate with the potential successor's vision and interests, determine the overall attractiveness of the farm for the potential successor. Further, it was observed that the size of farms has an influence on farm demographics. In the context of family farming, many farms, given their current size, management approach and organizational structure, are unable to support more than one fulltime worker, leading towards postponement of the formal transfer. We observed that this limits early entry opportunities, potentially resulting in eventual non-entry of the new generation. In the context of corporate farms, large farm sizes allow the financial ability to hire people for specific tasks (e.g. outsourcing administrative work), but at the same time a predominant aversion of farm managers towards a high number of employees and the responsibility this implies occurred.

The flexibility of the farm structure or the ability to switch the key farming activity largely depends on the production system. Some farms are generally more adaptable to the new entrant's needs simply due to sector implicitities. In most case-studies, (regardless of the case-study sector focus) livestock farming was explicitly viewed as more challenging in terms of intensive labour requirements compared to crop farming. In this sense, the contrast between e.g. dairy farming in Flanders and broiler chickens in Sweden was remarkable: all Belgian respondents mention the

long-term structural characteristics of the farm business being dependent on the biological cycle of dairy cows. At the same time, Swedish respondents agree that the fast revenue in broiler production is a strength when comparing to e.g. cattle.

#### Production factor farm-level land

Location factors also affect the farm business perspective. The way in which living conditions in the countryside either motivate or hinder entrance is further discussed in section 4.5, but it is noted already here to argue that farm adaptability can be limited by the location of the farm. First, the availability of land in the neighbourhood determine future expansion opportunities for a farm, which can be a precondition for a potential successor to be willing to take over that particular farm. Next, direct marketing was a widely used diversification strategy, but some respondents remarked that it is not a good option in all regions. This illustrates that the proximity of the farm to urban life influences the farm business model. Respondents also link other diversification possibilities to this proximity to the amount of recreational use of farming facilities and the occurrence of part-time or second-occupation farmers in the region. Such mentions were made in all case-studies, but the in the German, Swedish, Romanian, Spanish, Polish and Bulgarian case-studies, being located in remote areas has a severe impact on farm demographics. These case-studies cover abandoned rural regions with a lack of facilities and services (schools, hospitals etc.); where active farmers sense the outflow of young potential farming candidates as a consequence of the uninviting lifestyle and the lack of future perspective in the countryside.

#### Production factor farm-level capital in relation to profitability

Regarding farm management, level of debt impacts profitability and opportunities for farm businesses to develop. Lack of debt can influence the farm attractiveness by e.g. establishing more room for uptake of sustainable practices; which can in turn motivate a potential successor to take over the farm. In contrast, farms with high level of debt provide an extra challenge to successors. Generally, the overall financial situation of the farm is interfering with demographics, e.g. part-time farmers or farmers having off-farm income, are less exposed to income risks as was illustrated by one of the Italian mini-cases. Similarly, the typical role of the spouse to maintain a constant off-farm income, as was discussed above, was emphasized by active farmers to have influenced their entry or their non-exit decision.

FR MC7R1 (male, active middle-aged farmer): *"It's a way of spreading the risk and not depending on a single income, which is reassuring, because it allows you to have a salary next to it, if anything happens."*

Remarkably, when farmers argue why they have made certain management decisions or why they implemented a certain farm structural change, they tend to frame their story by indicating the need for modern farmers to obtain a certain level of independency. For example, when clarifying on the investment in machinery or storage facilities, farm managers stated that they cannot afford to be dependent on other farmers' equipment because cultivation planning depends on weather conditions and thus is equal for all farmers in the region, implying that the owner would always enjoy the first advantage and be able to execute the farming activity on the most ideal timing. Another type of increasing farm independence is land acquisition, which is from the farmer's point of view a very effective way to secure long-term possibilities for the farm business. Furthermore, the application of technology and automation of the production process were often framed as strategies to be less dependent on human labour and necessary to overcome the uncertainty about (future) labour availability and affordability. Also, some farmers diversified their farming activities in a way to be less dependent on other chain actors. A more exceptional strategy that farmers reported to apply, but a topic that was hypothetically raised by many respondents, was the statement that farmers should not be dependent on CAP funds, instead from their point of view, the ideal farming system is one where farm enterprises (regardless being family or corporate model) do not rely on subsidies but are able to be profitable based on fair output prices.

Ownership structures may influence farm demographics, e.g. in the case of German corporate farms, the farm owners can be reluctant to hand over company shares towards farm managers because of the legal risks. This in turn is not motivating potential successors to be involved in securing the future of the farm. In a Swedish mini-case, two brothers explained how the investment in farm structure was a precondition for joint succession, as they knew that they should each be able to manage separate parts of the farm business, which they do not interfere with each other's work and focus on their own responsibilities. Similar cases of collaboration between family members that were settled by certain partnership structures were found in the UK, Bulgarian and German case-studies. Throughout all case-studies, when respondents were asked about the farm legal form, they mostly explain it was chosen in function of the farm human resource structure. In some mini-cases, ownership structure was set up with the purpose of supporting the farm succession process or improving the overall profitability and business development options of the farm.

BE MC1R1: *"that was with another intern who lives here in the neighbourhood. I said to him: 'let us merge our farms.' That would be an option, you know. We create a new agricultural joint venture, we conjoin everything, we make a plan about ownership rights and then off we go. But yeah, that is of course... Even a bigger step... And then you can feel that there is some kind of anxiety for that sort of stuff in agriculture. To actually unite the capital or the farm businesses and to run it together then. But theoretically it could be possible, you know!"*

#### 4.4 Factors at farming system level that influence farm demographics

The third sphere of influence (figure 4) comprises factors external to the specific context of the mini-cases, i.e. individual farms that are in a specific demographic situation. They are elaborated in this section. In contrast to factors belonging to the individual and farm influencing spheres, where the within-case-study variation is often at least as high as the between-case-study variation, the factors belonging to the farming system (this section) and society influencing spheres (section 4.5) are mostly related to the broader context; and therefore mostly explain variation between the different case-studies.

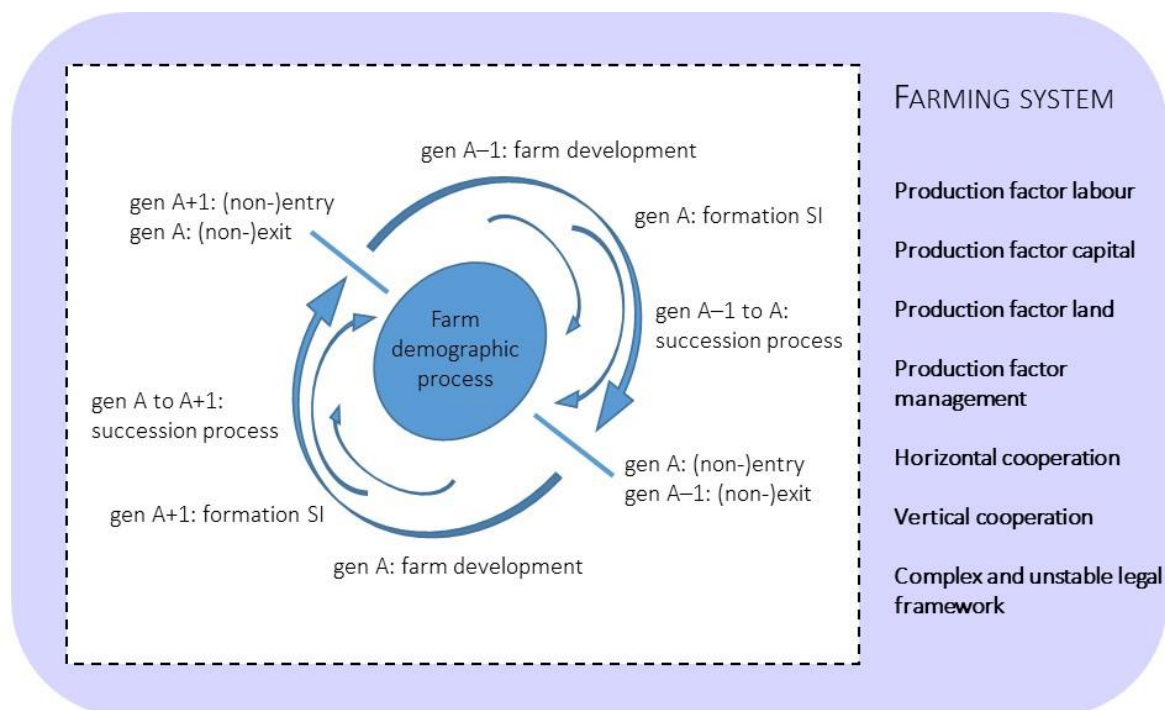


Figure 4: Visual representation of farm demographic subprocess for two subsequent generations, and impacting factors belonging to the 'farming system' sphere of influence

##### 4.4.1 Production factor labour

Rising education levels and the associated opportunity costs of being employed on or owning a farm seem to contribute to non-entry by offering a wider range of possible career choices. Respondents throughout all case-studies state that people with higher education prefer to work in other sectors rather than the agricultural sector. Except for the Italian case-study, the lack of a fair price for production and the imbalance between input and output prices were largely emphasized by respondents, and linked with demographic changes. It was striking how some



farmers were able to recall exact prices of fertilizers, wages of farm workers, pesticides and product prices, to defend their story by providing evidence on the raising cost-price squeeze. Respondents indicate that the lack of benefits compared to other sectors makes farming relatively unattractive, and they link this to the farm demographic changes occurring in the farming sector or region of interest. Moreover, from the respondents' point of view, the low profitability and unfair pricing is the key factor causing the general trends of a decreasing number of farmers together with increasing farm sizes. Only the Italian case-study was divergent concerning this topic. The general high profitability of hazelnut farms was regarded to positively influence the generational renewal process and employment dynamics in the sector. Concerning farm structure and organization, the relatively high economic return of the hazelnut production prevents diversification (of income and crop varieties).

In all case-studies, a typical strategy to overcome the problems and uncertainties relating to labour force, was automation of the production process. This also relates to the intensification trend that is occurring in most of the studied agricultural sectors (BE, NL, BG, IT, SE, UK, DE). These technical solutions were noticed to be a positive but expensive solution. Nevertheless, investing in mechanisation was viewed as less risky compared to continued dependence on the labour market. Throughout all case-studies, we found several examples of farmers switching from manual work to more automated and mechanized techniques (regarding production, processing, packaging; depending on the case-study's sector of focus). In explaining this decision, the most important argument for this mentioned by respondents is labour becoming more expensive. Also, the implementation of technology can significantly lower the workload. They realize that automation will increase the profitability of the farm and/or increase production efficiency. This mechanisation trend directly decreases the demand for labour force in the agricultural sector and could possibly be a threat to the employment facilities the agricultural sector used to offer.

UK MC1R1 (male, successor): *"I mean, the robotics will reduce labour, you're still going to need, like I said earlier on, it's going to be this technology manager, it's not going to be the farm operative that people have, you know, the image of a straw chewing country bumpkin, I'm afraid that's long gone already, but in 10 years' time, that is going to look so prehistoric."*

NL MC6R2 (male, non-entrant): *"Many things at the farm are quite technical nowadays; I don't think that I have the capacity to do all that."*

It was stated before that the imbalance between workload and financial returns is an important feature repelling potential entrants. In this sense, and although the familial farming model is highly appreciated by a lot of our respondents, respondents also tend to agree on the need to make the sector more attractive for entrepreneurs and non-obvious entrants (like non-family



members) to enrich the pool of potential future farmers with entrepreneurial profiles that might have the potential to increase profitability on farms. In the context of changes and increasingly complex challenges the agricultural sector is faced with, the inclusion of more ‘pure’ new entrants (i.e. people without a farming background) who are expected to bring in refreshing business knowledge and tactics and/or managerial skills. The fragment below is illustrating the need to attract qualified individuals that did not undergo the typical process of rolling into the sector as described by the endogenous cycles (Fischer & Burton, 2014a):

UK MC1R1 (male, successor): *“Well we’ve got to make sure that we make agriculture an industry that people want to be in and that’s not necessarily about, at the moment, we probably do expect people to be working incredibly long hours, we try and reward our staff as well as possible, but it’s certainly not a high paid sector, but it is becoming more and more skilled. I mean, the skills that you now need to be a machinery operator are very different to what you needed 15 years ago, you’ve got to be able to use GPS computer programming on the screens and, you know, it’s becoming far, far more advanced than it used to be and so getting that quality staff into the sector I think is going to be real challenge in the future, you know, so we’ve got to make sure that children coming up through school realise just how technologically advanced agriculture is, because I genuinely think if you’re a young technologist and you really understood what’s going on in the agricultural environment, you know, we’ll be having robots before long and we’ll probably have automated tractors, it could be a really exciting field to be involved in, but if they don’t know about it, they’re not going to come into it.”*

#### 4.4.2 Production factor capital

Banks and other financial institutions determine the access to credits and insurances, which was observed to impact farm management and farm structure, thereby indirectly influencing farm demographics. The possibility to make large investments is the most important during the farm succession process (to support successful entry) and during farm development (to prevent early exit and to feed future prospective entry). The indirect impact was illustrated well in the Spanish, Polish, Romanian and Bulgarian case-studies, where respondents were reluctant to obtain credit. This could influence their farm investment behaviour and consequently the attractiveness of the farm to the potential successor, as was discussed in section 4.3. Their reluctance to obtain credit originated from a distrust regarding banks, or simply because they preferred to limit their debts as much as possible. In these case-studies, respondents indicated that banks and financial institutions are cautious in supporting farmers and access to loans was not obvious. At the same time, the tradition of accounting on family members, friends or acquaintances, was observed as a typical way to finance the farm investments. In the other case-studies, the relationship with the bank is something that farmers consciously maintain because it is viewed as a common way to

finance the farm development. For example, one Swedish respondent stated that the relationship with the bank is very important, especially in times when they are looking to make larger investments. Their tactics is to always be in contact with at least two banks to be able to benchmark them against each other. In the Italian case-study, the high costs for insurances was viewed to limit the uptake.

BG MC4R1 (male, farm owner and manager): *“How we did it? Ehm, I called a friend who had more ‘opportunities’, and he asked also his father and both of them put in pledge their property in front of the bank to my favour. And I succeed to buy inputs and I was lucky to make a profit and I repaid the loan.”*

#### 4.4.3 Production factor land

Next to access to credits, access to land is impacting processes of farm demographic change. Tenure legislation, and (un)certainity about land availability influences the long-term stability of farms. In all case-studies, the importance of keeping good relations with land owners (which can be family members) was stated as a strategy to anticipate on future land availability. In the Polish and Bulgarian case-studies, it was explicitly mentioned that shortcomings or flaws in tenure legislation stimulate informal agreements or unofficial contracts between land owners and farmers. In the case-studies where the family farm model is really the key of a farm business (BE, PL, RO, FR, IT, NL, ES, SE), land was typically either kept within the farming family or sold according to established relationships with farmers from the neighbourhood. Because of the maintainance of family-owned land, there were several mini-cases where land was not at all the biggest worry of farmers/successors, whereas in the other case-studies (BG, DE, UK), farm managers reported that the future land certainty depends mostly either on the type of tenure or on the good-will of the owner to continue collaboration with the farmer. A lot of respondents indicate that the future development of their farm, especially in terms of opportunities for growth, depends on the exit of other farms in the farming system (DE, BE, SE, FR, IT, BG, UK). Similarly to access to credits, access to land is especially important for farm demographics during key turning points of the farm business cycle, e.g. for farm enlargement during a collaboration period between successee and successor.

#### 4.4.4 Production factor management

The majority of our respondents belonging to the categories ‘successors’ and ‘active farmers’ accomplished at least some agronomic education programme or training prior to becoming an official farm helper/employee/manager. It seems like farmers interpret their agricultural education as a logical and important step in their successors’ identity formation. However, not all respondents are satisfied with the quality of the education system, a theme that was raised by

some German, Belgian and Dutch respondents. They either don't feel well equipped when they start farming or they feel like they were not prepared well when looking back after several years of farming. Some of them announce that a lack of diversity in agricultural education programmes might threaten future farm demographics. This lack of diversity is twofold. In the first place, there were some quotes that indicate that there is a bias towards focussing on strict theoretical aspects of farming, while other skills needed to successfully run a farm - such as financial, legal and accountancy management - are ignored during the training. As a consequence, some respondents think that agricultural schools do not prepare students to become farm managers. Second, it was stated that course contents tend to be restricted to teach conventional knowledge and farming strategies; not bringing the student in contact with alternative ways of farming.

NL MC2R1 (male, farm head): *"There is a lot of knowledge about organic farming, but we lack knowledge about conventional farming with organic features."*

Another issue relating to education that was mentioned in the above mentioned case-studies, but also in the Swedish, Bulgarian, Romanian, Spanish and UK case-study, is the outflow of highly educated potential entrants towards sectors with less personal risks and jobs with higher average wages compared to farming. The competition with other sectors is, according to our respondents, caused by the imbalance between input efforts and output prices characterizing the agricultural sector.

#### 4.4.5 Horizontal cooperation

It was observed that farm demographics and farm business development are highly influenced by the social network of the farmer. Relationships can significantly widen the options for the farmer or the farm to cope with challenges. For example, a close contact with family members or friends offers mental support, f.i. by mitigating the feelings of loneliness that were mentioned above. More importantly, several respondents explained how their network provided them access to land, credit, labour, or other capital that is crucial to set up or to take over a farm. For example, because of his position at the local council, a Romanian farmer (MC4R1) had access to information on the existence of financing projects through LAGs (Local Action Groups), and his son, as LAG member, was able to participate in the project and claim some funding that was used to enlarge the family farm, allowing for the entry of the son in the farm. A good relationship with neighbouring farmers can practically provide support, often in an informal way, by for instance offering extra workforce or equipment in difficult times. Especially collaboration between neighbouring farmers, e.g. by sharing resources and equipment, and helping each other with the farm work, was valued by a lot of the respondents (BE, FR, NL, RO, PL). In a few mini-cases, throughout various case-studies, the current farm demographic situation was the result of former collaboration. For example, buying manure from another farmer, letting animals graze on another

farmer's pasturelands, etc., were 'soft' forms of collaboration that were observed to precede the proposal of non-family farm transfer.

To informally maintain a social network with other farmers is also important for continued learning. Respondents report that knowledge exchange takes place between different stakeholders on the farm in an informal setting. Again, from the successor's point of view, the successee usually is their first point of contact for advice and learning about the business, as was discussed before. Their legacy in terms of network was also adjudged by some successor respondents as having been a crucial enabling factor in the farm development. For example, retiring farming friends/colleagues of the successee might have been an important source of land acquisition. From the incumbent generation's point of view, the successor is often declared as responsible for introducing new information and knowledge, maintaining social networks, building out a sales network and/or bringing in other inputs valuable for future farm development.

Sharing knowledge and experiences with different stakeholders in a formal way enables farmers to bring in new insights into their farm management, potentially leading to the implementation of novel approaches or on-farm adaptations. These can in turn convince a potential successor to consider taking over the farm. The role of forums or discussion groups in this context was mentioned a lot. A lot of the interviewed farmers emphasized how they value trainings and meetings they attend. Finally, building good relations with specific chain actors can particularly facilitate the farming business model and efficiency the farmer pursues. Many examples of different formats in which knowledge exchange took place were encountered throughout the case-studies. The fragment below shows the effect of meetings where farmers can discuss their business operations and resulting revenues in a formal and secured format and in a trusted atmosphere. Such meetings were observed in several case-studies, but variations in terms of organisers and specific scope of the meetings occurred.

UK MC1R1 (male, successor): *"I would highly recommend it to anybody, I think we gained a greater understanding of our business, because when I was talking to other people about our costs, it was incredibly important that we knew that they were really accurate. So it meant that I spent more time analysing our business, just so that I was absolutely confident that we were on top of everything and seeing the farmers that were in part of that group build a trust with each other and actually start sharing some very sensitive information, that was absolutely brilliant and something that I think is so important, but suddenly rather than seeing each other as competition, to really start sharing and benefiting from sharing that information I thought was a really powerful thing and (...) So it's delivering what farmers want and I think that farmer to farmer knowledge sharing has been really, really important."*



Additionally, social media were mentioned as a modern platform enabling farmers to exchange knowledge, increasing connections and farmers' networks globally. Dutch, UK, Belgian, Swedish, Bulgarian and French respondents provided some anecdotes about having found farmers at the other side of the globe who are facing similar problems as they do, which triggers online conversations and exchange of experiences, enabling each other to cope with specific field challenges and improving their performance.

Although the value of farmer-to-farmer cooperation was acknowledged by various respondents, a moderate to high level of perceived competition between farmers hindering both inter- and intrasector transparency was observed alongside this. The value of sharing knowledge and experiences (e.g. during discussion groups) is mentioned by several farmers, as discussed above. Still, some of them feel like only a few openly talk about their issues, while in reality, they all know that many of the producers share the same problems.

Cooperation between farmers depends in the first place on the individual's willingness to cooperate. One Dutch farmer was very explicitly stating that he wanted to be on his own and work alone and don't want to be dependent on anyone. Second, the intrinsic characteristics of the sector are impacting the likelihood of the occurrence and implicit evidence of cooperational forms. For example, in the UK, German, Swedish and Bulgarian case-studies, the large farm sizes and organizational structure allowed for different (non-)family members to run a farm together while not actively being in contact with each other on a daily base. On the contrary, most of the mini-cases in the Dutch, Belgian, French, Romanian, Italian, Polish and Spanish context are characterized by one person at the head of the farm, usually supported by a few other family members or farm workers in a rather informal way.

With regard to intersector cooperation, it was observed in the Belgian, UK, Dutch, Swedish, French and Spanish case-studies that cooperation with other livestock or crop farmers (i.e. farmers focussing on other specializations) is desired by farmers but appears to be cumbersome in practice. Respondents argue that this is due to legal restrictions, but also mutual trust of both parties plays a role. For example, Swedish respondents point out the lack of cooperation between egg producers and broiler chicken producers. Likewise, Dutch arable farmers emphasize the lack and potential added value of collaborations with livestock farmers.

#### 4.4.6 Vertical cooperation

In Belgium, France and Sweden, the case-studies where cooperatives and/or producer organisations are a significant factor in the the farming sector of interest, most farmers agreed on the value of the cooperatives and other forms of cooperation in improving the output prices and bargaining position of the primary sector and/or establishing better valorisation of their products.



For the other case-studies, the lack of cooperation initiatives (either between farmers, with the processing industry or with suppliers) was emphasized as a current shortcoming and important opportunity for improving the sector's prosperity in the future.

The main buyers and processors have a large impact on the production conditions that farmers need to apply. When farmers have a contract with retailers or processors, they are often subject to additional quality requirements, which was perceived to cause stress and indignation among respondents. In the Belgian, French and Swedish case-study, the fact that there are only a few large processing companies, buyers or cooperatives, results in less margin for manoeuvre for the individual farmers. Respondents feel that, as a producer, you are often furthest down the value chain and have little control over output prices. The latter are rather dictated instead of negotiated by processing companies. Respondents tend to worry about their position in the food chain and their low bargaining power as they observe that farmer's voice carries very little weight. Some of them are actively seeking to counterforce this process, f.e. by becoming a board member of the cooperative or the producer organization. In this context, one Swedish respondent explained that he tried to be part in making decisions about prices in these organizations, but describes the process as rather unwieldy from time to time. Similar stories, emphasizing the lack of power farmers hold and the feeling they are not being heard occurred in all other case-studies, although not always directly related to cooperative producer organization working.

SE MC3R1 (male, successor): *"It's like; it's the producer, packing company and the trade sector. And then, you are furthest down, so you get what's left over and then you need to cover your own costs with that money."*

In the Swedish case-study, the level of dictation by the processing industry was remarkably high and can have a direct impact on farm structural change. At a certain point, farmers were obliged to change specialty from turkey into broiler chicken. A respondent explains that although the relationship has become less familial throughout the years and the communication concerning the transition was very poor, the practical arrangements of the transition were smooth and moreover, the industry accounted for the costs related to the rebuilding of the stables. At the same time, he noticed that planners at the processing company intensively support new farm owners to continue production without any interruption; thus enabling the succession process between non relatives.

SE MC4R1 (female, successor): *"The conversion from turkey to chicken. There was no choice. It was an order."*

This is a very illustrative example for trends that are occurring, according to our respondents, in the other case-studies. In the Polish, Bulgarian, Romanian case-studies, the creation of producer



groups and/or cooperatives is still in its infancy, and the respondents notice the potential added value of cooperation to increase competitiveness, bargaining power and possibilities for investment and mechanisation. Also, they indicate that they would be very willing to participate in such organizations. In the Belgian, French, Italian and Spanish case-studies, the role of cooperatives was already more established and many farmers are involved. The aim of the formation of a producer community was usually to decrease mutual competition between farmer-colleagues and to increase bargaining power. This is because they find it crucial to stand united towards large companies and in this way maintain control over their situation. Many respondents here acknowledge the added value the system provides them, but at the same time they report about the perceived increasing 'black-box' effect wherein farmers are not actively involved in the decision-making of the cooperative. This is due to the organizational structure: only a couple of representatives can be spokesman and they manage all negotiations with the processing industry. As a result, farmers that are not connected to the representatives feel like they are not heard. In the Dutch, German and UK case-studies, cooperatives was not a major theme (as a result of the farming sector that was studied) but some statements were made about low bargaining positions of farmers and the frustration that farmers *"in the end have nothing to say"*.

Last, in Bulgarian and the Italian case-studies, it was mentioned that collaboration between research institutes or universities and farmers are absent or insufficient in enabling the farming sector. The lack of adequate financing was related to their dissatisfaction.

#### 4.4.7 Complexity and frequent adjustments of legal framework

This last sub-category is somewhat in between the farming system and the regional level. It refers to regulation and policy, which can be different for one production system to another, but certainly also from one region to another. In all case-studies, there are at least some respondents who report a lack of what they call long-term political vision. The instability caused by continuous changes in policy goals and national instruments and measures creates uncertainty about the future developments of the agricultural industry. This theme covers both European and national/regional governments, although the lack of a long-term vision for the development of the sector strategy at national level was emphasized more explicitly compared to CAP by Dutch, Bulgarian and Belgian respondents. The lack of a holistic approach is not only a source of frustration for respondents, some also indicate that the frequently changing policy regulations and restrictions are hard to keep up with. We observed respondents hesitating to invest in future farm development because of a decreasing trust in institutions and in the future of the farming sector. Sometimes, respondents allocate the inefficiency of the political system to the lack of empirical experience and feeling of policy makers.

Overall, regulations were perceived as restrictive to develop viable farms. Respondents often regard policies as being too strict, not considering specific situations and also favouring certain farm types. The issue of inspectors being unable to use a holistic approach while examining the farm's performance was also illustrated by many very specific examples throughout our mini-cases. To summarize, according to our respondents a holistic approach implies that inspectors assess the farm in its whole instead of sticking to an artificial list of rules that they need to literally check point by point. In practice, this would mean that they give less weight to certain rules, following the specific farm context for which some regulations are less relevant.

NL MC1R2 (female, active farmer): *"Farmers are resilient. However, for adaptation we need financial support - or less restrictions and more smooth dialogues. Currently we feel that our ideas are blocked"*.

Some respondents explained that controls are finalized with a decision that is crucial for the future development of the farm that is made by one individual officer. This puts the farm in a very exposed position. In this regard, some respondents remark that employees working at regulator offices are not familiar with nor informed well about the actual production system and that the people employed for these jobs should have some agricultural background or education. The strict conditions and controls, but more importantly, the administrative burden they bring with, were observed to discourage farmers to stay into farming or to enroll their sustainable plan they had in mind. Bureaucracy was one of the most consistent topics throughout all case-studies, negatively affecting job satisfaction. The time allocated to paperwork was one of the biggest frustrations among our respondents and it seems to decrease their motivation to work in agriculture.

NL MC3R1 (male, settled successor): *"We have to obey to many rules. It is just fine at the moment – but it should not get worse. I'll then loose the pleasure of being a farmer."*

However, in some cases respondents mentioned how policies enabled them to go into farming. Young farmer support schemes were stated to positively impact farm demographics, and we observed that these funds accelerated the family succession process in some of the mini-cases (IT, PL, BE, RO, FR). Access to financial resources through CAP was crucial in most case-studies. In Bulgaria, it raised interest in farming because being able to finance the business is crucial to continue. Although respondents from different countries acknowledge that receiving subsidies is necessary in order to survive and thus the agricultural sector strongly depends on political decisions, at the same time, respondents belief that farm subsidies are only distorting the market; resulting in unfair competition. Yet in all case-studies, there were at least some mini-cases where the survival of the farm was stated to depend on the persistence of this financial support.

Respondents stating that they wished they did not need financial support, if the prices would only be fair.

The liberalization of agricultural market was perceived to induce a tough competition and unfair level playing field at EU level, by policies that do not account for nuances and differences across agricultural and climate conditions in the different states, which was criticized by many respondents. This topic often was related to animal welfare rules or withdrawal of plant protection products. In all case-studies but the Romanian, national production circumstances and techniques, as well as minimum quality level demanded, are often under more strict regulations compared to those in the country from where they import the alternative product. Many respondents are defending the national production standards, however they are frustrated about the unfair level playing field and they view the system as hypocryt.

SE MC1R2 (male, farm head): *"I don't really want to see changes in Sweden, I want to see them in the EU."*

The sometimes apparently incompatibility between nature and agriculture, was another topic that was often mentioned as a frustration of farmers, and it was mentioned as underlying the restrictive or enabling policy theme. There was a significant amount of farmers, especially in the Dutch and Belgian case-studies, who were frustrated about environmental organizations getting subsidies, or were indignant about the emphasis on nature conservation measures in CAP, or how 'green politics' are more and more threatening 'agricultural politics'. Also in other case-studies, farmers noted that their farming practices are more and more limited by environmental policies. For example, in the Swedish case-study, there was one farm business being classified as an environmental risk, by being located in an area vulnerable to nature destruction. Such categorization of farms can, from the farmer's point of view, expose their business to unreasonably high regulatory pressure. Similar stories occurred in the other case-studies, e.g. farms being hindered by building permits, by regulations to mitigate environmental pollution, etc. However, an equal share of respondents showed a more positive attitude towards the relation between agriculture and nature, and some even state that strengthening of the second pillar of the cap is wanted and that political intervention is necessary and desirable: public goods which should be delivered by the agriculture (biodiversity, structured rural areas etc.) have to be paid independently. These farmers declare that greening and ecological requirements provide additional income while at the same time maintaining long-term viability of land, which is also seen as a key purpose of their occupation.

Another topic that recurred in multiple case-studies (BE, BG, DE, IT, PL), was the perception of respondents that subsidies do not benefit the genuine farmers in the end, but instead they are

favouring certain profiles or certain farm types, this way pushing farm demographics and farm structural changes in a certain direction. For example, respondents stated that the current CAP forces large farm sizes or only supports farmers who fulfil the conventional farming path. Other perception about cap subsidies were that they lead to cheap prices for customers, high lease rates or just compensate the bureaucracy expense.

Although not related directly to entry, exit, non-entry and non-exit decisions, the majority of our respondents raised the issue of increasing bureaucratic burden. Respondents are worried because the time and financial resources they have to allocate to administrative work increases continuously. As a consequence, paperwork was stated to hinder strategic investment decisions that are promoting future farm continuity. Some farmers even declared not to account on any public support to avoid time-consuming activity and because of distrust in or dissatisfaction with the system since payment delays could cause financial problems (IT, PL, UK) . Also, the fragmentation (that results from the independent institutional divisions, each using their own procedures) of all documents that farmers need to handle is a source of incomprehension and frustration. This was emphasised in all case-studies by both farmers and other respondent categories to be an urgent need for institutional reform. Moreover, respondents indicate that some procedures are not fitting into their daily agricultural life. In Sweden and Belgium, respondents have the impression that responsibility has increasingly been transferred from authorities to individual farmers throughout the years. In all case-studies, there were respondents who needed to outsource the administrative paper work. In Bulgaria and Germany, to hire a secretary employee was part of the business plan in some mini-cases. In Belgium, the Netherlands, Romania, France, UK and Italy, this task was mostly allocated to a family member (often female) because the main farm operator either doesn't want to spend time on paper work or is not able to do it himself for example because he cannot handle the digital requirements. In Poland, Sweden, Belgium and Romania, some respondents indicated that they needed to invoke on external expertise because the applications they need to do are too cumbersome to handle without advise from professionals.

BG MC6R1 (female, farm owner and manager): *"And this is a serious challenge, I have the capacity in my company, we manage it, but it is a very big financial burden – one person is working on documentation about land management issues, another one is about tax documentation, one is dealing with the State Agriculture Fund and a regional directorates, one with Labor Inspection, Seed Control, Environment... I did not think of them because I'm angry, 14 institutions have checked me last year... 14 institutions..."*

PL MC8 (male, successor): *"I applied twice for the CAP RDP measure 'young farmer installment', and I was rejected the first time, I did not get to this list. And in the second year I received, but*



*there is a lot of paperwork, applications, corrections.... A lot of formal things, driving to Lublin, here you have to do it, one missing paper, you have to come back. Well, in this respect, everything is not so clearly explained, what should be exactly and how it should look. It's like if I had to do it myself, I would never do it. I did it with a lady from the agricultural advisory center, who helped me a lot."*

#### 4.5 Factors at society level that influence farm demographics

Just like the third influencing sphere, the fourth influencing sphere consists of factors that are external to the farm system and are more indirect drivers of farm demographic change processes. The societal factors below should be interpreted as ambient dynamics that were found in our study to influence farm demographic change processes, but are more conceptual themes that are probably also playing a role outside the agricultural sector. While the farming system factors from section 4.4 mostly explain between case-study variation because of the differences in the agricultural sectors that were studied, the societal factors below are rather explaining between case-study variations that relate to differences between European regions and rural community contexts across Europe, i.e., the regional dimension of our case-study approach.

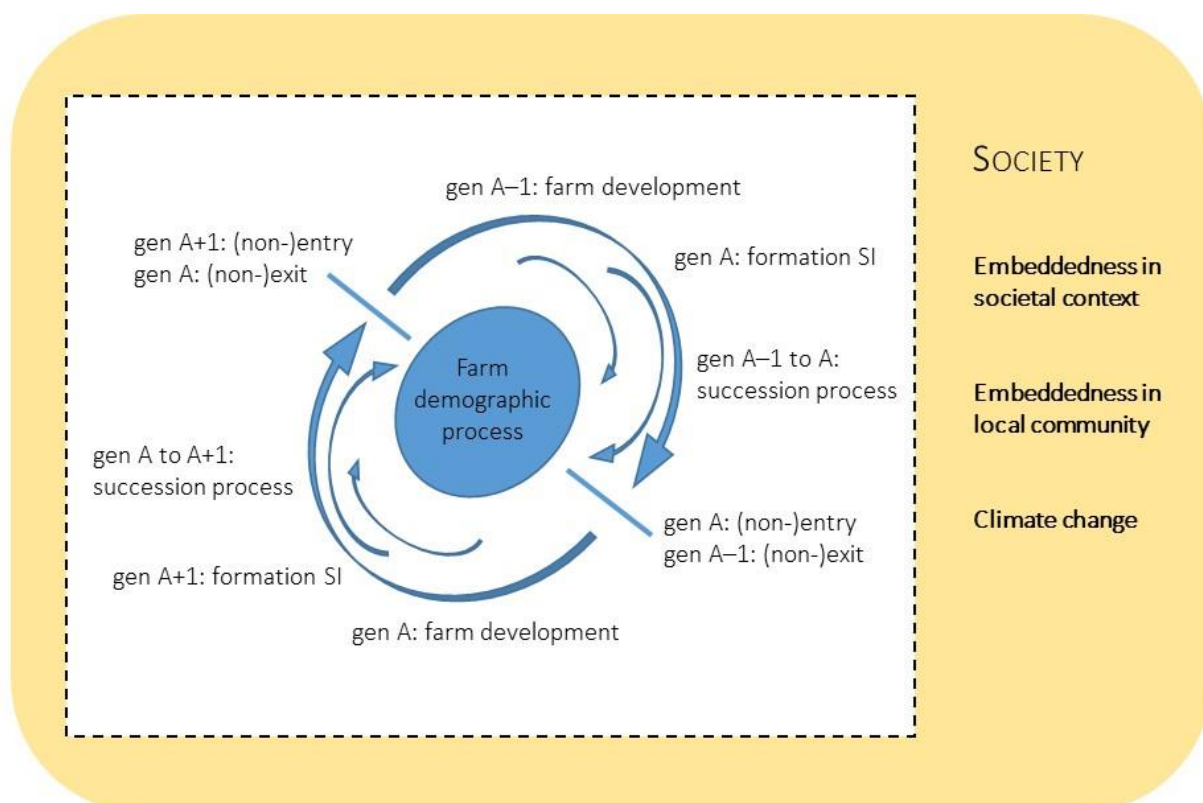


Figure 5: Visual representation of farm demographic subprocess for two subsequent generations, and impacting factors belonging to the 'society' sphere of influence

#### 4.5.1 Position of farming in a shifting societal context

A first notion here is about the decreasing compatibility with current society. The high workload typical for the farming life has already been named as a challenge, potentially affecting farmer well-being and mental health and demotivating entry decisions. When this feature is put into the wider societal perspective/context and when farmer's are reflecting on how hard they are working and how badly their work is being represented by the output prices, this feature especially is framed as a threat to the future farm demographic situation. A person's vision on life and work-leisure balance can determine whether someone is prepared to choose for this demanding farmers' life, or can impact farm structural & management choices. However, in the context of current trends in our society, with changing needs and expectations about life quality and achievements, the younger generation tends to be less interested in agriculture due to this combination of hard work, lack of leisure time and substandard wages. The traditional farming life seems to just not be compatible anymore with the shifting collective vision on life quality. It is increasingly being perceived as poor quality of life due to the intensive labor requirements. Similarly, the difficulties in finding labour force can also be the result of farming being unattractive for workers due to long hours and low pay. The lack of interest in farming also influences the possibilities and willingness for training and qualification of workers.

However, being an independent, self employed famer was experienced as positively impacting work-life balance by enhancing flexibility in working hours, making it more convenient combining e.g. parenthood with work life. Also, choosing to live on the countryside was a motivation for some farming families, but to a lesser extent occurred in the Romanian, Spanish, Bulgarian and Polish case-studies, where rural abandonment caused migration of the younger generation to countries of higher average prosperity.

#### 4.5.2 Embeddedness of farm in local community and peri-urban life

Becoming a farmer means choosing to live in the countryside, thus the attractiveness of living there affects the attractiveness of becoming a farmer. Farmers emphasize the importance of building up and maintaining a good network within the neighbourhood. The reason for this appears to be twofold. First, respondents explain that it is important to be accepted as a farmer, with the farming population becoming a smaller share in rural society. To maintain a connection with non-farming people contributes to the farmer's state of well-being and job satisfaction. The personal relationship to the neighbourhood is thus important for daily life experiences. In Sweden, Bulgaria, Romania, Germany, Spain and Poland, respondents talked about issues regarding the local community. One Romanian farmer pointed out the lack of socialization in his neighbourhood and talked about an "alienated community" where cooperation and connections between

neighbours are totally absent, impacting the sales and the future development opportunities of the farm.

A second factor is the rising occurrence of farming being negatively presented in the media. Farmers are either portrayed as polluters or misusers of crop protection agents or as not respecting animal welfare. The anxiety of bad portrayal of farming practices by e.g. animal rights activists induces stress on farmers and a bad image on farmers and pressures from society reduces occupational pride.

NL MC5R1 (male, settled successor): *“When I am abroad and I tell that I am a Dutch farmer, you feel a lot of appreciation – ‘you are the man’ – while in the Netherlands, I sometimes rather do not mention that I am a farmer at all.”*

Some respondents diversified their farm business with an education, an on-farm processing or a selling-point, or they frequently join/organize an open farm day to increase transparency for the public and for enabling the trust that society has in farmers, or to contribute on closing the gap between consumers and farmers. Some of them are actively engaging with the local community by e.g. offering open-door days; organizing fairs and public events; farm festivals for the local people and land owners to keep in touch and foster acceptance for the farming business (BE, BG, DE, UK, SE, IT, ES, FR). Second, the active maintenance (by for example participating in local initiatives or being a member of the local council) of strategic contacts with important stakeholders – like landowners, other farmers in the farming community, local decision makers – is a strategy of respondents anticipating on future opportunities. The neighbourhood relations maintain the family in the rural traditional structures. Some successors are pointing out that such connections with local community are some sort of legacy that is thanks to their successee; which is an enabling factor for farm succession and farm development (BE, NL, DE, FR, IT). In contrast, some German respondents encountered difficulties while trying to become part of the ‘local network’ when they enter farming business and moved in a certain region for the first time. Similarly, settled farmers are indicating that the presence of a successor determines the social behaviour of the farming family and rural organizational activities are more likely in settings where a successor is present.

One Swedish farmer did have a lot of acquaintances and he spend a lot of time in developing his network, bringing in renewal from time to time. He states that this network makes up the best type of advisors one can have, and that you are not helping yourself when sticking to the same advisor for too many years. Networks also seem to play an important role in recruitment processes of external labour (eg different employers recommending individuals with specific skills to each other) by German and Bulgarian farm managers as crucial to find new employees. In Bulgaria,

building image in the local community was even seen as a precondition for farm success. As the large corporate farms are dependent on local labour availability, the farmers need to attract people to their farm. It was observed that trust is a prerequisite for willingness of locals to work for and together with the farmer. Supporting the local population was a recurrent strategy.

One major factor inducing a decreasing amount of successors and regional low entry shares in some case-studies (RO, BG, PL, SE, ES, DE) was the lack of social services in certain European regions. Here, inadequate public services in rural areas makes it unattractive, especially for young families, to live in the countryside. In these case-studies, many potential successors migrated either to large cities or to other countries to search for better opportunities regarding occupational choice (often, chances of finding a well-paid job are higher there) and quality of (family) life (often, respondents perceive that living conditions are more convenient there). Sometimes, this migration was a consequence of the ‘explorative behaviour’ that has been discussed in section 4.3.2.

RO MC3R1 (male, non-exiter): *“Everything goes like the well-oiled wheels of a clock there [referring to the countries of destiny where a significant amount of the young generation migrates to]. With us, if one or two small wheels don’t go well, the whole clock will be broken.”*

BG MC12R1 (male, farm owner and manager): *“This process started very, very early when the industry required labour in the cities, and then the people from the small villages moved in the towns. ... now we want to return the young people, honestly to tell you this is a losing project. The young man or woman, with her/his modern needs, can never make it to come back because our villages are not the pretty German and Austrian villages...”*

#### 4.5.3 Changing climate and extreme weather events

The last external factor was never mentioned individually by respondents, but always explained to be related to economic concerns and uncertainties of future profitability. It seemed relatively more important in the case-studies with less temperate climate or where extreme weather events are more likely to occur (FR, IT, ES, DE, RO, BG, PL). Also, it is not climate change in se that is threatening farmers, but the increase in frequency of diseases and extreme events it causes, or the decrease in availability and increase in feed prices (for livestock farming). In short, respondents describe environmental challenges as an additional factor that can enforce processes of farm demographic change. For example, more frequent occurrence of heat waves may induce the need to invest in better irrigation/cooling management, but when the successor is not willing to implement respective management solutions on the farm, the potential successor might be discouraged to take over the farm, that is not attractive from his point of view.

## 5 DISCUSSION AND IMPLICATIONS

### 5.1 Intergenerational renewal: a process affected by an interplay of factors at many levels

The analysis revealed that a combination of the individual situation, and conditions at farm, family, sector and society level, lead to the farm demographic decisions by farm stakeholders (Figure 6). It was observed that personal, farm and family level factors shape farm demographics in a very direct way. The majority of factors that were mentioned in very direct relation to farm transfer/succession events were from these 2 levels, rather than from the farming system/sector or regional/national level. First, someone's personality (including the extent to which farming complies with the person's self-identity and feelings of pride) on the one hand and someone's ability to cope with many challenges that are typically occurring within the farm system on the other, has a very direct impact on demographic decisions. Such personal factors appeared to be especially important (1) during the phase of the successor's identity (SI) formation to germinate the seed of an entry decision; (2) when the farm system is facing a major challenge and the (non)-exit decision and/or farm survival is largely depending on the ability of the farm head to cope; and (3) during generational change. Second, at the farm level, aspects related to the production factors land, labour, capital and management (that are different from farm to farm according to characteristics such as farm size, family characteristics, farm scope, farm specialization, farm adaptability, legal form, access to land, access to labour) and aspects related to interrelationships between the most important farm stakeholders influence farm demographics. These farm and family level factors play a role during the subprocess of the SI formation. More importantly, farm level factors impact the smoothness of the farm succession process, when the successee and the successor find a consensus on how to manage the farm transfer.

The personal, farm and family level factors can be categorized as internal factors of influence, because they encompass all characteristics that are inherently bound to a farm specific situation, but also the social dynamics occurring between all key stakeholders on the farm. They thus impact farm demographic decisions 'from within' the farm system. These drivers are usually components on which an individual has some feeling of control, as they are close to one's direct daily life. Our comparison revealed that these internal drivers are impacting entry, exit, non-entry and non-exit decisions in a very similarly way throughout the different case-studies of interest.

Additional to the factors that are bound to the particular individual, family and farm situation, external factors can play a role in farm demographics. At the sectoral (farming system) level, we see a mirror of factors that play a role at the farm level as well: on the one hand aspects related to the production factors land, labour, capital and management, and on the other hand aspects





related to the networking, interrelationship and interpersonal skills of actors at this level. Whereas at the farm-level, these aspects were characteristics that could change from one farm to another, at the farming system level these are factors that are more specific for a typology. They are external to the specific individual, farm business and family situation. It are mainly dynamics occurring at sector and society level that affect farm demographics in a more indirect way, by influencing the intertwined processes taking place at the individual, family and farm level. These external factors were stated by the respondents to play a role in their decision, by complicating or by mitigating the specific farm demographic challenges in addition to the internal factors. It was observed that most of the ambient circumstances are similar for different farm businesses in the same farming system, but can differ largely between the case-studies.

Some of the factors that are discussed in this report have already been studied in detail by other researchers (Ahearn, Yee, & Korb, 2005; Boehlje, 1992; Calus, 2009; Chiswell & Lobley, 2018; Dessein & Nevens, 2007; Fischer & Burton, 2014b; Grubbström & Eriksson, 2018; Hilken, Reid, Klerkx, & Gray, 2018; Joosse & Grubbström, 2017; Leonard, Kinsella, O'Donoghue, Farrell, & Mahon, 2017; Mcmillan Lequieu, 2015). The added value of this research is that the combination of all those influencing factors is more genuinely representing the real world's complexity. The complexity takes the form of interrelatedness, mediation and moderation, where, for instance, a certain characteristic of a farm is only important because a policy level characteristic, or the impact of certain characteristic related to the typical capital-intensiveness of a certain typology may have only a weak importance for certain farm with particular characteristics.

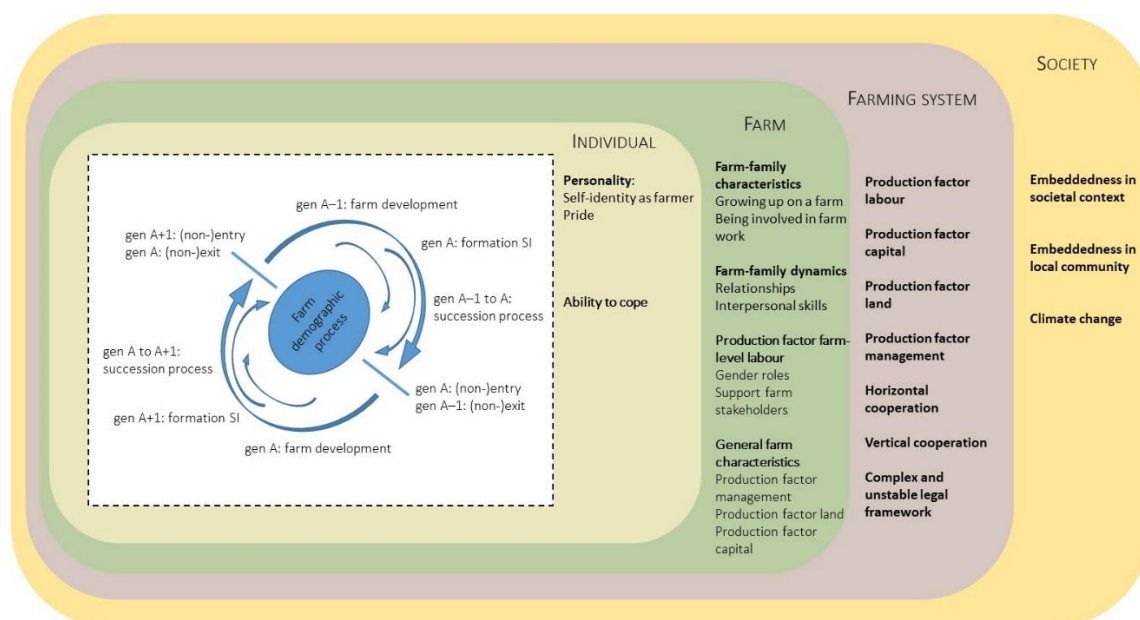


Figure 6: Factors affecting farm demographic change

## 5.2 Intergenerational renewal: a process conceptualized in three stages

Based on our data, intergenerational renewal through transfer or succession is conceptualized in three stages, that are more conceptual than distinct chronological periods in time because the chronology depends on whether the point of view of the old or new generation taken, and some stages can overlap, or certain events might cause the farm to move unanticipatedly into a new stage. First, in the stage ‘formation of a successor’s identity’, the new generation gradually sees themselves as a potential successor or not. This is a mostly a personal characteristic that is, however, the result of a combination of intrinsic characteristics (personality, vocation, pride, interest) factors external to the person. In short, it is a balance between the extent to which a self-identity as a farmer is formed and the extent to which the potential hardship of being a farmer is perceived as being manageable. Even though many farmers talked about feelings of satisfaction, pride, happiness, a majority did mention many aspects that makes farming not attractive as an occupation, which means that the self-identity as a farmer must be very strong for a successor identity to become formed. Aspects that make farming not attractive relate to the physically and mentally challenging work, potential low remuneration, changing regulation, increasing administrative work and increasing political and societal pressure to change production practices. If a successor identity is not formed, the farm likely does not enter the next stage, exit and non-entry happen and the farm discontinues.

The second stage is the farm transfer/succession process, which is the whole process of transferring the farm to the next generation. Here, several factors play a role, and it is probably this stage that receives most attention through policy, education and advisory. First, interpersonal skills and the quality of the interrelationships, most importantly at farm level between family members and or farm stakeholders and to a lesser extent at farming system level between farmers, other farmers and supply chain actors, are extremely important at this stage. Good relationships and good interpersonal skills clearly act as an enabler, whereas bad relationships and low interpersonal skills may cause the transfer/succession process to fail, to take lots (too much) of time, or to be completed in an insatisfactory way, and they increase the need for specific advice and support. This is especially the case where the other characteristics that play a role at this stage provide challenges to the transfer/succession process. These other factors can be summarized as aspects related to the production factors land, labour, capital and management, and interplay between farm specific characteristics related to these production factors and characteristics that are more common the whole sector. Last, specific policy instruments for young farmers support and retirement schemes also affect intergenerational renewal, albeit only at this stage, after the successor identity has been formed and not earlier.

The last stage that was defined is the farm development stage, which is a stage that can largely overlap with both other stages. However, this stage was also defined as a means to describe the influence of many factors that were mentioned by many interviewed respondents as being related with farm demographic change, transfer/succession and intergenerational renewal without having a clear mechanistic direct relationship with it. This refers to many aspects that are commonly mentioned as aspects that make farming less attractive and more challenging. These have to do with living on the countryside, low profitability which is according to many farmers partly caused by many cost-increasing restrictions not just by the inherent costs associated to production, the bureaucratic burden, and severe and unstable policies and regulations. The extent to which the farmer is able to deal with these challenges partly determines the attractiveness of farming and through this, partly affects whether a successor identity is being formed in the new generation that is experiencing this. Aspects that positively contribute to this are – again – good relationships and interpersonal skills, financial buffer capacities, good education, advice and extension.

Further, risk management and resilience appears to be very important at this stage especially and at all stages in general. Certain events such as extreme losses, personal physical or mental health issues, very bad interfamily relationships, changing regulations that invoke a need for adaptation or transformation and trends such as technological development and supply chain organisational changes can cause a farm to enter the farm transfer/succession stage in an unanticipated way and at an unforeseen moment. This puts farm continuity at risk because often the outcome of this process is non-entry and exit rather than succession and entry. Even when the outcome is farm transfer and entry, this is often under less than ideal situations which still puts the future of the farm at risk. Nonetheless, unexpected events can, very occasionally, have a positive impact on farm transfer/succession. This can be the case for instance, in situations where the generation wants to enter the farm transfer/succession stage whereas the old generation is not ready for this.

### 5.3 Farming as a lifestyle choice

Throughout the majority of interviewed cases, the decision whether or not to become a farmer (entry into it and non-exit from it on the one hand, and non-entry into it or exit from it on the other hand) is seen as a lifestyle choice as much as, or even more than an occupational choice; in other words it is not perceived by our respondents as *'just another ordinary job'*.

The combination of high workload and low profitability is probably one of the most important explanations why entering farming is not attractive for many people, or when farmers feel discouraged or down-hearted. Although it was argued before that farmers find it hard to find a work-life balance due to the high workload, the time-consuming and intensive labour

requirements that tend to influence the quality of life in a negative way, and sometimes implied making sacrifices on the personal level or even on the family level (e.g. farmers regretting that they have neglected quality time with their family); there were also attributes that are intrinsically bound to the farming life that positively influenced entry/non-exit decisions. Interestingly, the overlap between private/family life and work, often stated as a cause of challenges, is also perceived by some farmers as an advantage. For example, to be a self-employed farmer may offer flexibility in the organisation of work and private life, while being an employee in any other firm might imply more rigidity in terms of time allocation and freedom of individual decision-making. Also, some typical features of the farming occupation, like the diverse activities the job comprises, or the seasonality of the work, were named as positive challenges that motivate the farmer and to job satisfaction. For example, although the costs of seasonal labour production intensive periods was stated as a challenge, at the same time farmers seem to appreciate the yearly recurring patterns in the daily work coming with the job. Although such personal motivations for entry are difficult to manipulate by policies, there are other factors that impact the workload that can be mitigated. For example, it seems that the lengthy procedures that farmers need to undergo before receiving their support or compensation, such as extensive form filling, generates feelings of distrust and frustration towards government institutions. Such bureaucratic procedures can discourage farmers from remaining in farming and may result in them encouraging their children to work outside of farming.

At the same time, for some European regions, as illustrated by the Romanian, Polish, Swedish, German, Spanish, Bulgarian and French case-studies, the lack of young people entering the farming sector is related to the unattractiveness of the countryside. Rural abandonment, lack of social services, remoteness from urban life (and thus the lack of a nearby market), are characteristics associated with a life in the countryside that are withholding the new generation to entry into farming. For example, several farmers from the Romanian, Polish and Bulgarian case-studies talked about their (children's) frustrations of not being able to implement their knowledge that they achieved after going abroad for work. In these regions, there is a need for institutional factors that enable the future entrance of young farmers.

The imbalance between what farmers invest into their farm development (input prices & labour efforts) and what they get out of it (job satisfaction, farm profitability) was largely indicated by respondents to put pressure on the overall well-being of farmers. It was observed that the negative aspects of farming can be overcome by one's personality or compensated by one's ambition to be a farmer. The weight of this them was high across all case-studies, implying that a shifting focus from supporting farmers in terms of income stability towards safeguarding farmer's well-being and mental health, as the occurrence of depression, burn-out and suicide in the agricultural sector can jeopardize future farm demographic resilience.

Some of the respondents were settled farmers with a true entrepreneurial profile. They continuously keep looking for new projects and opportunities to implement innovative activities on their farm business. Their motivation to enter or to stay in the farming sector is strongly driven by their eagerness to learn and the value they assess to increasing their knowledge spectrum. These respondents are perfect examples to illustrate that lack of farming background doesn't necessarily need to be a barrier to entry, as is often assumed by other respondents. More generally, being able to create a social network that one can invoke on during difficult times, and continuous learning, were characteristics of farmers whose farm development process was positively preparing for the future farm succession. Policy can respond to this observation by handing opportunities to farmers in terms of spreading knowledge and organize trainings in knowledge-building skills.

UK MC2R1 (male, successor):: *"I think farmers, and I'm beginning to realize, farmers sometimes forget that they run businesses, they're actually businessmen and women."*

The observation of many formats wherein farmers exchange knowledge with their colleagues is already occurring in certain farming systems (UK, SE, BE, NL, FR, IT), and the positive attitude of farmers towards these sessions, underscore that the potential impact of independent stakeholders organising such platforms on farm demographic dynamics – in terms of creating new forms of cooperation between farmers – should be explored in further research.

#### 5.4 Family farming in Europe: a normative model that will sustain?

The majority of the mini-cases follow a family farm model design, with exceptions in the German and Bulgarian case-studies. Indeed, the family farming model is the dominant organizational mode of farming in the EU and it is also a normative tradition put forward by many policy makers, farmers and farmers' organisations because of its supposed – and sometimes proven – advantages. Yet, our data shows there is enough evidence to at least question whether the family farming model is a blessing and/or a curse for farm continuity, farm demographic change and resilience.

The traditional family succession cycle that has been studied before (Calus, 2009), was the predominant subprocess underlying farm demographic changes on most case-studies. Typically, all family members are involved with the daily farm routine in one way or another; the allocation of different roles within the family farm life being biased by their interests, gender and age. The practical overlap between the farm and the private life implies an inevitable cooperational spirit. It is maybe because of this shared dedication towards the farm, and the emotional load that comes with it, that changes in family circumstances are often a driver for entry. At the same time, the overlap can be the source of conflicts and lead to farm exit. In this way, the emotionally driven



family farm clearly distinguishes itself from a corporate farm, where the interference with private life is lower. This, for instance, reduces the chance of someone choosing to continue the farm out of emotions, regardless of the current farm profitability and future opportunities.

A lot of respondents perceived being raised on a farm or in the countryside as a unique and peculiar gift they enjoyed during childhood; potentially leading to feelings of place attachment; which in turn can be a reason for entry or non-exit. Being raised on a farm was likely to be a first trigger in creating feelings with and intrinsic knowledge about the farming sector. In some cases, the awareness that was built up while growing up on a farm feed into to non-entry decisions, in other cases, it enabled the successor to overcome specific entry challenges. The role of being born on a farm or, more generally, the role of early involvement in the farm work was already explained by Fischer & Burton (2014) to have major implications on the development of the successor's identity. Their described concept of socially constructed endogenous cycles as a key dynamic relating to the farm succession process was very applicable to our findings.

The overlap between the farm business development, the succession process and the family life cycle is reflected by multiple examples throughout our case-studies. In general, farm heads are more likely to prepare the farm when they have the perception that a prospective successor exists for their farm. We saw that when children show interest in farming, this can trigger certain farm developments from an early stage. Farmers who do not have a foreseen successor tend to search for an alternative strategy on farm continuity; e.g. they consider selling the farm or transferring it to a stranger. The degree of mutual understanding and communication between family members shapes who gets involved in the farm work and how, triggering the initialization of the successor's identity formation in a particular way. Strategic decisions of the current farmer concerning the farm structure and farm management approach can impact the development of the successor's identity but are crucial during the succession process. The vision that the successor and successee share or not, and more importantly, how they communicate about their vision about the farm future, influences the finalization of the successor's identity formation, and the smoothness of the succession process.

The most important feature of the family farm succession model is the ability to overcome typical entry barriers, like the need for a considerable starting capital in order to start farming. Inheritance of farm land and farm infrastructure, and temporarily shared ownership between different family members, facilitate entry into the sector. Likewise, the (often unpaid) family labour can enable the successor to overcome the financial pressures, especially shortly after take-over; when debts are usually high due to investments that are typically made during the farm transfer process. Evidence for financial intermingling between household and farm has been provided in literature (Wauters & de Mey, 2019). Similarly, the role of social relationships between

farmers, acquaintances, land owners, etc. in non-family farm transfer on the one hand and in land availability on the other hand, has also proved its importance in our case-studies. A maintaining reluctance of farmers to collaborate might thus result in missed opportunities concerning farm continuation, thus potentially impacting farm demographics. If farm demographics in the future move away from the traditional family farming model, f.e., as a result of more frequent occurrence of non-family farm transfer, policy-makers should think of other solutions to offer new entrants similar opportunities as those that have made it possible for family successors to continue the farm.

Also during the farm development process, support from family members by, often in the form of unpaid long and uneven working hours, can be necessary for farm survival. When a major on-farm change takes place, the decision-making process preceding this key turning point in the farm business cycle is often chronologically intertwined with the farm transfer process. Empirical evidence about the young generation bringing in innovation into the farm business has been presented before by other researchers (Milone & Ventura, 2019). Their findings are confirmed by our study; we observed several examples where innovations or alternative farm activities were brought in by the incoming generation. It seems like the new generation is able to integrate their knowledge about farming with other info coming from other sources (e.g., technical studies, foreign markets, outmigration, environmental awareness, ethics concerning labour conditions). Interestingly, barriers to innovate were also stated by potential successors as reasons not to continue the farm.

Attitudes towards managerial approaches and farm structural decisions are indirectly impacting farm demography. Farm structure characteristics are often the result of the farm manager striving to make the production system more efficient by optimizing the production approach. An important trend currently occurring in the European agricultural sector, and affecting its associated farm demographics, is increasing mechanisation. In a context where farmers feel threatened by changing circumstances, such as the rising cost-prize squeeze, the general uncertainty about (future) labour availability and affordability, lacking political vision and increasingly complex legal framework, and the pressure from other stakeholders in the farming system towards intensification and the uptake of technological solutions; it is not surprising that frequently implemented strategies to anticipate for future economic risks were intensification, scale enlargement and automation of farming practices. It seemed to be a very deeply imprinted assumption for assuring long-term farm survival, even in farming sectors where average profitability of farms is rather high as illustrated by the Italian case-study. As illustrated by the Swedish case-study, a rather homogeneous population of farmers regarding such attitudes and advice organs (e.g. same age structure, small farming community attending the same educational events) can reduce the need for manual labour at farming system level dramatically.



An interesting theme that appeared in all our case-studies was the phenomenon of potential entrants going abroad to study, for an internship, gain experience, or trying out another occupation before entering the farming sector or before taking the decisive step of the premeditated succession. This ‘exploratory’ behaviour of potential entrants could be considered as a threat to the traditional family farm succession process, as for some of our mini-cases this resulted in the outflow of the potential entrant, and “the risk of kapening away the best employees by non-agricultural firms” was raised as a concern by some respondents. This negative interpretation of the observed trend was dominant in the Bulgarian, Romanian and Polish case-studies, where the exploratory behaviour was correlated with migration out of the case-study region of interest. For the Swedish, Spanish and German case-studies, migration from urban to rural regions was mentioned as a trend that is negatively influencing entry into farming. However, other respondents associated this trend with the input of new knowledge and skills into the farm system, thereby having a positive impact on the further development of the farm. We therefore argue that the exploratory behaviour of potential entrants should rather be seen as a shifting demographic trend wherein the traditional immediate succession is now interrupted by an enriching experience of the new entrant. From our data it was evident that experience-building is of high value to many new/potential entrants. We therefore suggest that this trend should be institutionally supported, on the condition that the support is accompanied by fostering the return towards the farming career.

In the Bulgarian, German, UK and Swedish case-studies, there is also a culture of large family farms having a more corporate character in the spectrum of farm business identities. Still, the ways in which family relations define possibilities on the farm, as discussed above, seems to be likewise applicable in these contexts. The intermingling between farm characteristics on the one hand, and relationships between farm stakeholders on the other hand, are influencing the farm transfer process in a similar way. In the German and Bulgarian case-studies, there were some mini-cases where the farm organization was not build on family relationships, but the farm owner(s), farm manager and farm workers are organized in a business structure that does not rely on the typical family hierarchy that is common in agriculture. Still, there are a lot of dynamics at farm level that are also applicable to these exceptions, the only difference is the lack of a setting based on family relationships. For example, the supportive role of a farm manager can make entrance easier in a similar way that the family succession process is enabled by the father. To conclude, our findings about how interpersonal interactions affect farm demographics are mostly based on the abundant family context mini-cases in our sample, but could be extended to interpersonal relationships on corporate farm businesses in general, albeit for the latter more empirical evidence should be collected in future research for confirmation.



Although our data largely show that being born on a farm, early involvement, and a gradual succession process are major enabling factors for entry, some counter examples in our sample prove that previous experience and gradual enrolment into farming is not always a precondition for taking up a leading position on the farm. For example, a Swedish female non-family employee was, when hired, immediately given the position as main operator on one of the farm enterprise units, despite not having any previous experience related to poultry. She had been recommended by a colleague of the farm holder because of her achieved competences in the pig farming sector. This is a good example where the theme *social network of stakeholder* was more important in the demographic change process compared to the *step-by-step involvement of the next generation* as described in section 4.3. Similarly, an old farming couple from the Polish case-study had no connection with farming, growing up in the city, yet still deciding to buy a strange farm and showing a passionate eager to stay in agriculture. Very similar examples were encountered in the German, Italian, UK, Swedish, Dutch and Bulgarian case-studies.

Similarly to intra-family successions, co-operation, communication and involvement were key characteristics mentioned for allowing non-family or non-obvious entrances. This idea is not new, as Joosse & Grubbström (2017) already provided empirical evidence that a smooth farm transfer is not necessarily the result of strong family relationships. Our findings suggest that such features of the succession approach that are not exclusively crucial within the context of family farming are: the ability of the successee and successor to communicate effectively; to rely on mutual respect and understanding; to timely plan for the succession (both the practical, legal and financial aspects); the importance of a period of cooperation (whereby the new entrant can work alongside the incumbent farmer, being gradually involved to the decision making processes and farm management, being given more responsibility step by step); and the importance of the retired farmer's watching eye after formal succession.

Because of the above determinations, we suggest that the family character that typifies farm demographics is actively acknowledged by policy makers. Cush & Macken-Walsh (2016) already pointed out that *'it is crucial that policy-makers approach the problem of agricultural land mobility in a way that reflects the dynamics and recognizes the advantages of family farming'*. We think there is a need to overthink this statement and how extend it in order to cover more policy themes instead of exclusively the land mobility issue, for example to also harmonize farm legal forms with this family-based contexts. On the other hand, it was already stated that is potentially crucial for future farm demographics to be more resilient, that entry from non-agricultural profiles is stimulated. As a result, alternative partnership forms might be needed, or increase knowledge about legal forms and organizational structures that can suit different business situations, or raising awareness about certain partnership forms that already exist, but are not implemented yet, or stimulate cooperation between farmers to apply such partnerships. Therefore, in general,

we argue that legal forms should be adapted to the diverse labour situations occurring in the farming sector.

## 5.5 Implications

Farm demographic change is often a very person- and farm-specific process. This implies that any attempt at intervening into the level and nature of intergenerational transfer will need to take this specificity into account. Sectoral, regional and national policy instruments are unlikely to tackle all the factors – let alone the most important factors – affecting farm demographic change. Personal advice and guidance at all stages of the intergenerational renewal process are recommended in order to overcome barriers and exploit enables at the personal and farm level. This is especially important in the stage of the farm transfer/succession process, where advice and guidance, besides being about legal, administrative and financial issues, will often have to take the form of counselling and negotiation, given the importance of interpersonal skills and relationships.

Policy instruments are typically, although mostly unconsciously, targeted towards the stage of the farm transfer/succession process. Yet, if enabling more intergenerational renewal is the goal, policy makers should be aware that a great deal of exit and non-entry decisions have been made before that stage. When the formation of a successor's identity hasn't happened is is not strong enough, measures to enable the farm transfer/succession process are obsolete. This formation of a successor's identity is the result of a combination of personal factors (self-identity as a farmer, pride) and many external factors that in sum determine the attractiveness of farming as an occupational activity. In that case, policy measures that increase the attractiveness of farming are likely to resort a bigger influence compared to measures that enable the transfer/succession process itself.

Policies regarding the continuation, exit and structure of farming should be based on territorial – spatial – considerations. It is not clear what a good level of intergenerational transfer is; a good starting point could be the resilient delivery of system functions (public and private goods) in a particular region. Such consideration can inform on the level of intergenerational renewal and structural change that could provide a sufficient level of public and private goods. Further, land and territory based regulations, such as permit policy, lease policy, land market and mobility and rural planning policy are shown to have a substantial impact on farming. Together with issues such as administrative requirements, fiscal policy and inheritance policy, regional and national governments have powerful possibilities to drive the level and direction of intergenerational renewal and structural change, regardless of European regulations and policies.

If the goal is to stimulate intergenerational renewal, risk and resilience management are very important. More specifically, the management of extreme events with often low probability but



a high impact is crucial for farm continuity. Extreme loss events, the need to make large unforeseen investments, physical and mental health issues are all risks that cause the farm to enter the stage of farm transfer/succession in an unanticipated way, which jeopardizes the continuation of the farm and often leads to exit and non-entry, or to entry in sub-optimal circumstances.

European policies have a mostly indirect influence on intergenerational renewal because they partly shape the conditions in which farms operate, and through that they have an impact on the attractiveness of farming, which is a simple but major determinant of entry, transfer and succession. Some exceptions where European regulations are mentioned as having a more direct influence on farming are the young farmers support, which enables the farm transfer/succession process and the land-based direct payments, which often cause non-exit of farmers beyond retirement age and as such decrease land mobility. National and regional governments should be aware that they have the possibility to implement policies with a potentially profound impact on the local direction and extension of farm demographic and structural change. How these policies should look like depends very much on the normative assumptions about what is an acceptable kind of farming and production activities and a desired level of intergenerational renewal.

## 6 CONCLUSION

The farm demographic change within a farming system is the result of individual farm-level demographic change processes, i.e., the result of entry, non-entry, exit and non-exit decisions. This study, based on a qualitative approach using in-depth interviews, conceptualized farm demographic change processes as consisting of three conceptual stages. These stages are conceptual rather than distinct chronological stages in time because some of these stages might overlap in time and the chronology depends on whether the point of view of the old versus the new generation is taken. The first stage is the formation of a successor's identity, a crucial stage since if its outcome is non-succession, measures intended to ease the transfer process are obsolete. The formation of a successor's identity is the end result of the combination of personal interests i.e., the self-identity as a farmer on the one hand versus the perceived ability to cope with the often hard life as a farmer and its challenges. The second stage is the farm transfer/succession process itself, a process which can become increasingly lengthy. Also in this stage, the combination of enablers and disablers can lead to either non-entry or entry. The third stage we defined is the farm development stage, a stage in which the farm is being developed and during which, after some time, the formation of a successor's identity stage can start to develop.

We have identified 4 levels of factors influencing intergeneration renewal and farm demographic change: (1) personal/individual factors; (2) farm (family) level factors; (3) farming system level factors; and (4) regional/societal factors. The first two relate to factors for which we find as much (or even more) within case study differences compared to between case study differences, whereas the latter two are more equal within case studies.

In the first stage, a combination of personality factors and the ability to cope with the challenges associated with farming determines whether a successor identity is being formed. In the second stage, interpersonal skills and relationships are very important, next to both farm level and sector/region level characteristics related to the factors of production labour, land, capital and management. Some specific policy measures, both regional/national and European affect the mobility of land, labour and capital. Examples include permit policy, land-based payments, land lease policies and fiscal regulations. In the third stage, many factors are mentioned as having an influence on or playing role in transfer/succession decisions. However, the way this influence is described suggests that this influence is rather indirect, by shaping the conditions in which farmers operate and thus affecting the attractiveness of farming as occupational choice. Further, the findings heavily suggest that farming as occupational choice quickly become a lifestyle choice, and that the dominant family farm model can be both a blessing and a curse for intergenerational renewal.

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## 8 ANNEXES

### 8.1 Annex A: Interview protocol and outline

#### 8.1.1 Problem definition and research questions

The main aim of task 3.1.2 is:

- To identify drivers that are responsible for farm demographic changes
- To create a deeper understanding of the underlying processes (e.g. farm adaptive cycles) that create/change the demographic structure of the agricultural sector
- To create insight into entry and exit processes of farms and farm labour

#### 8.1.2 General description of the interviews

The interviews that will be performed for task 3.1.2, can be termed either as ‘in-depth interviews’, ‘key-informant interviews’ or ‘open interviews’; as we explain below.

‘In-depth interviewing’ is a qualitative research technique that involves conducting intensive interviews to explore an individual’s perspective on a particular idea, phenomenon or situation (Boyce and Neale 2006). Since this technique results in a lot of detailed and comprehensive data, it is a suitable method for exploring new issues in depth. It is also widely used to provide context to complementary (quantitative) data ; offering a more complete picture of the problem (Baarda et al., 2009; Denzin & Lincoln, 2000; Mortelmans, 2007; Seidman, 2013). In our case, we want to qualitatively identify drivers of farm demographics and farm structural change by listening to key-informants’ perspectives on several phenomena that (may) influence their farming activity or their involvement in a farm business.

According to qualitative research terminology, we can categorize the interviews we have in mind as ‘open’ interviews because they will resemble a conversation rather than a list of questions the interviewer chronologically asks the respondent. The main part of the interview is ‘semi-structured’, since a list of themes is provided and examples of questions are proposed (see following sections). Despite these guiding topics and probing questions that are provided by ILVO as instructions for the case-study partners, we prefer to define interviews as ‘open’ rather than ‘semi-structured’. In this respect, we want to emphasize the importance of the interviewer being alert to emerging themes that the respondent might bring up. These emerging themes may not be mentioned in the topic list because they were originally not expected to play an important role in the understanding of farm demographic dynamics, or maybe they were simply not thought of. However, it is the important mission of the interviewer to judge whether an emerging theme is relevant to the research interest; and if so, to go with the respondent in his story and try to unravel how and why this theme relates to processes of farm demographic change.

### 8.1.3 Conducting the interviews

#### General behaviour during the interview

Start the interview with an introduction, for which you take your time in order to make the respondent comfortable. The introduction should include:

- The opportunity to have a brief « pre-talk » : if the respondent wishes to know more about the researcher, the latter can briefly introduce himself (focus on your career and your role in this research).
- Explain the role of this interview in the broader context of the research conducted for task 3.1.2.
- You can choose to send an information sheet in advance to provide respondents information about the research and what their participation implies.
- A short presentation from the interviewer to sketch the context of the research to the interviewee. We recommend to give information about the SURE-Farm project, about the specific research purposes of task 3.1.2, and about the institute of the researcher. If this part is already been recorded, transcription of this section is evidently not required.
- Ask whether the respondent has any further questions.
- During the interview, there are some (non-)verbal factors that influence the fluency and the atmosphere. We provide some tips and tricks (adapted from Evers, 2007) that enable the interviewer to guide the interview :
- It is crucial to actively listen to your respondent. This means not just to hear what (s)he is talking about, but to actively think with your respondent. While listening, you should analyse the information and identify which emerging topics are relevant to further explore. This also implies that you need to create and formulate specific follow-up questions on the spot. Therefore, the example questions, the interview outline and the prototype provided below, are only an indication of how an interview could look like. In practice, a good interview is the result of a spontaneous interaction between the interviewer and the interviewee.
- Be careful with yes/no-questions. They are not wrong per se, but some respondents tend to simply answer such questions with yes or no. You can either trigger these respondents with a follow-up question like 'Why (not) [...]' or you can avoid this type of question and instead formulate questions that start with how/why/when/who/can you tell me about [...] etc.
- Screen / be aware of / try to analyse the physical and emotional state of your respondent : e.g. if you detect disinterest in the interview, indicate this gently to the respondent, try to understand why (it is possible the respondent is just having a bad day) and try to negotiate about how you can overcome the problem together. E.g. if you detect fatigue or concentration problems, introduce a pause or end the interview.

### The interview outline

The interview outline is presented in table A1. It can be used as a guideline, but it is a hypothetical skeleton of how the interviewer might strategically lead the interviewee through the interview.

As elucidated by the interview outline structure, each interview consists of a more open part followed by a semi-structured part. During the **open part** of the interview, the interviewee first has the flexibility to bring up themes from which we expect they are of major importance for the particular respondent. Don't ask specific questions about these topics during the open part, but be alert and if necessary, take a quick reminder note to come back to some topics in the second part of the interview (the semi-structured part). Towards the end of this open part, it is very likely that you will spontaneously have collected information about several sections of the topic list, but you should try to focus this part of the interview on the following subsection of the topic list (since we consider these themes as key explanatory factors that should definitely be discussed during the interview):

- FARMING SYSTEM
  - Farm structure characteristics
    - Family/corporate farm?
    - Location of the farm
    - Farming activities?  
(crop/livestock/mixed...)
    - Specialisation
    - Diversification
    - Legal form
    - Farm performance, profitability
    - Farm size (output/land area)
    - Financial constraints? Investments?  
Growth/decrease?
    - Orientation/organisation
  - Farm demographic characteristics
    - Main farm operator: age, sex,  
children, spouse, career experience,  
life story, personality, managerial  
ability
    - Tenure
    - Household assets
    - Farm business lifecycle
    - Generational renewal
    - Succession, entry, exit, non-entry, non-  
exit
    - How many family members versus  
how many non-family members are  
working on the farm?
      - Hired labour
      - Part-time/full time?
    - Pluriactivity
      - Diversification
      - Off-farm/non-farm  
employment
- a) Social roles, relations
  - Risk behaviour/perceptions/attitudes/management
  - Emotions of the actors

The **semi-structured part** guarantees more consistency throughout different mini-cases, case-study regions/contexts and different interviewers. During the semi-structured part, the interviewer will consider the topic list more actively and this will enable him/her to perform a guiding role and prevents him/her forgetting to incorporate major themes that should be dealt with during the conversation. On the one hand, this part of the interview will mainly focus on the internal and external factors that are influencing the farm business situation (and the demographic aspects related to it). On the other hand, during this part you will come back to topics that were previously addressed by the respondent. It doesn't matter whether these themes are on the topic list or not, it is only important that the interviewer is expecting to gain additional valuable information if he asks further questions about them.

It is likely that this part of the interview will mostly focus on topics of the following subsection of the topic list. However, this is only what we expect from most respondents. We cannot stress enough that every respondent and every mini-case is different and it is absolutely no problem if the proposed chronological order of topics is neglected during an interview because a respondent spontaneously talks about certain themes.

- Farming community (different households) and other actors directly related to the farm business
  - Relation with other farmers
  - Social learning
  - competition
  - Social environment
  - Rural communities
  - Culture
  - Consultants
- Environment
  - Climate change
  - Soil depletion
  - Weather
- Government & policy
  - Support/subsidies
  - Policies / farming agency (subsidies, funds...)
  - Fiscal, inheritance and other regulations
- Micro-economic conditions
  - Resources of the farm
  - Capacities



- Economic and financial performance
  - Risk
- Macro-economic conditions
  - Industry structure & institutions (eg. vertical / horizontal cooperation)
  - Technology & innovation
  - Other sectors' influences
  - Output & input prices
- Social and other influences
  - Relationship with suppliers and buyers
  - Banks
  - Neighbours
  - Family

A list of potential probing questions is attached to the proposed interview outline. According to the chronological structure of the interview, the first questions of the list specifically aims to start the interview and get the interviewee talking. When approaching the more semi-structured part, the questions become somewhat more specific because they are meant to stimulate the respondent to further explore topics that were already in the interview or new themes that the respondent brought up. To put it differently, these questions also help the researcher to play a leading role during the interview. Obviously, the proposed questions are only examples of how one can bring up a topic. We must stress that the interviewer should formulate their questions in the moment, depending on the specific respondent, situation, interview course and phase.

Adapt your interviews according to the respondent that is in front of you. Examples are

1. With a farm owner of a corporate business farm (= not a family farm) you would not talk about succession within the family but rather about the decision to own a farmer, to potential decision to sell the farm
2. With a farm worker you would talk about the decision to take-over a farm, but rather about the decision to enter the agricultural sector as a worker
3. With the third interviewee around a farm business, you probably don't need to talk anymore about the details of the farm such as production, activities, cropping plan, ..., since you probably already know this.



TABLE A1: INTERVIEW OUTLINE

Interview section	General behavior and examples of questions
<b>INTRODUCTION</b>	
<p>Ask permission for recording the interview + Read through the informed consent together with the interviewee</p> <p>Give information and context about the research + explain the purposes of the research + sketch the position of this interview</p>	<p>Give the respondent the chance to ask questions</p> <p>Trust can be created by a comforting atmosphere.</p> <p>Take your time to start up the interview and make the interviewee comfortable.</p>
<b>PART 1: OPEN INTERVIEW</b>	
<p>In this part, the researcher aims to deconstruct the farm demographic situation of the case. To be able to unravel the underlying nuances that are needed to create a profound insight in the dynamics of farm demographics, it is important for the researcher to establish a good relationship with the interviewee.</p>	<p>It is very plausible that themes further down the topic list are already touched upon here by the interviewee. Depending on the situation, the researcher needs to decide what is the most appropriate: either take a quick note and come back to it later, or immediately ask further questions and further explore this topic.</p>
<b>Invite the interviewee to talk openly about the case</b>	
<p>During part 1.1, the researcher remains quiet and doesn't interrupt the respondent, so he can freely bring up topics that are (probably) important for him. This may include some silences too (this is not a problem)</p>	<p>Start with an open question e.g. <i>Could you tell me about the farm business you own/manage/work in?</i></p> <p>If the respondent deviates too much from the themes of interest, you should interrupt him by reformulating the question</p>
(i) Activities of the farm business	<i>What are the current main activities of the business?</i>
(ii) His/her role	<i>Could you explain your role within the farm business?</i>
(iii) Historical trajectory	<i>Could you tell me about the history of the farm?</i>
<p>i) What</p> <p>ii) Why</p> <p>iii) Since when</p> <p>iv) Process so far?</p> <p>v) Which considerations/challenges</p>	<p><i>When did major changes take place?</i></p> <p><i>Why was this decision made?</i></p> <p><i>What were the motivations behind these changes?</i></p> <p><i>Were there any other options? Why was this option chosen? Who took this decision? What different actions have been taken recently in this respect?</i></p> <p><i>Why?</i></p>
<b>Invite the interviewee to talk openly about the specific farm demographic (change) situation</b>	
<p>During the shift towards part 1.2, the researcher can take more chances to guide the subject of the conversation. He tries to gently shift the focus (more guiding role of the interviewer compared to part 1.1) to specific aspects regarding/explaining the farm demographic (change) situation of the mini-case.</p> <p>It is of major importance that the interviewer adjusts the questions and the focus of the conversation according to the identity of the</p>	<p>Leading questions can be</p> <p><i>Can you elaborate on the situation of the farm now?</i></p> <p><i>Which major changes are taking place/are about to take place, can you elaborate on them?</i></p> <p><i>When did you know you would become a farmer? When did you take over a farm? How easy was this take-over? Why? How is the farm organized legally.</i></p> <p>Probing questions can be</p> <p><i>Since when is the farm business in this situation?</i></p> <p><i>What was the motivation behind this?</i></p> <p><i>Which other possibilities have been considered?</i></p>

interviewee and what role (s)he plays within the farm business.	<p><i>Why didn't one of the other options make it?</i></p> <p><i>Who had something to say in this decision?</i></p> <p><i>Would you describe the farm you own/manage/work in as a family farm? Why, or why not? What makes it a family farm?</i></p> <p><i>How will this change be implemented? What obstacles do you expect?</i></p>
(iv) Organisational structure, what are the roles of different actors and this is based on what reasons?	<p><i>Who is the main farm operator?</i></p> <p><i>Who takes decisions regarding risk management? Can you give a specific example?</i></p> <p><i>Who takes responsibility for farm production assets?</i></p> <p><i>Who brings in new knowledge and innovative ideas?</i></p> <p><i>Who is the final decision maker regarding financial (investment) choices? Can you give a specific example?</i></p> <p><i>Are you satisfied with this operational structure?</i></p> <p><i>Is there another way in which these roles could be or should be regulated?</i></p>
(v) Ownership	<p><i>Can you tell me something about ownership structure?</i></p> <p><i>Who owns fixed assets (land)? Who owns the land?</i></p> <p><i>Who owns the infrastructure, the equipment, farm production factors?</i></p> <p><i>Why is this organised in this way?</i></p> <p><i>Has this settlement been discussed? How have these decisions been made? Why did [...] have something/hasn't anything to say in this discussion?</i></p> <p><i>Do you think this is the appropriate way to organise the ownership?</i></p> <p><i>Do you feel comfortable with this ownership structure? Why (not)?</i></p> <p><i>Would you like to change this ownership structure? Why (not)? How would you do this?</i></p>
PART 2: SEMI-STRUCTURED INTERVIEW	
During the second part of the interview, the researcher takes a more dominant role within the conversation. He leads the conversation to subjects (whether or not on the topic list) from which he expects to gain important additional information that can be crucial to create insight in underlying factors that shape the farm demographic situation and/or farm demographic change.	<p>First, introduce elements on the topic list &amp; how they affect the farm trajectory &amp; farm demographic change. Based on the notes you made during part 1: reconsider if these themes are relevant to come back to. A formulation can be like: <i>"Earlier you mentioned [...], could you elaborate on this?"</i></p> <p>If you wish to make suggestions to change/expand the topic list (e.g. if you think case-study specific topics are important, please contact <a href="mailto:isabeau.coopmans@ilvo.vlaanderen.be">isabeau.coopmans@ilvo.vlaanderen.be</a>)</p>
Internal/endogenous factors	

### D3.2 Report on farm demographics

Main focus: try to unravel how certain characteristics of the farm business make (particular) farm demographic changes more/less likely. More specifically, ask about HOW these factors have affected the development of the farm business and farm demographic situation (at a certain moment in time) and WHY this led the process in a particular direction (of farm structural/demographic change) or why and how they had an impact.

- Social environment	
vi) Relations (with family members / employees / main farm operator / farm owner / other farmers / consultant / neighbours)	<i>Who are the three key persons? Can you describe your relation with them?</i>
vii) Emotions	<i>Did your relation with X have a significant impact on (the development of) the farm business situation?</i>
viii) Participation in local initiatives	
- Farm environment	
ix) Goal of the farm business	<i>How do you imagine the future of the farm business?</i>
x) Current size of the farm and prospected growth	<i>Do the three key persons share this imagined future?</i> <i>Do you have dreams/expectations of what the farm should be like in the future?</i>
xi) Profitability of the farm	<i>How do you aim to achieve these expectations?</i>
xii) Farm growth limitations	<i>What obstacles do you expect to face during this development?</i>
xiii) Farm viability limitations	
xiv) Farm location	

#### External/exogenous factors

Main focus: try to unravel how factors that are not directly derived from/related to the farm business make (particular) farm demographical changes more/less likely

Start with an open question, e.g. *What external factors influence the changes in the farm? Can you give some examples from the past, and from the future?*

- Policy xv) CAP xvi) Specific support interventions	<i>Can you tell me something about agricultural policies? Are there specific policies influencing the farm development?</i>
- Economic framework conditions xvii) Labour market xviii) Land market	<i>Do you think policy should be adjusted to [...]? Are there any economic conditions influencing the farm development? How do you deal with it?</i>
- Technology & innovation - Other sectors/firms/institutions/industries - Consumers - Retailers	<i>How did technology play a role in the development of the farm business? What about other farmers in the region? Do they have an impact on your farm in any way?</i>
- Ecological environment xix) Climate change xx) Soil conditions	<i>Can you give an example of an event where environmental conditions influenced your farm? Do you think natural conditions/climate change will have an impact on the farm business in the future?</i>

## 8.2 Annex B: case-study coding lists

### 8.2.1 Dairy farming in Flanders, Belgium

AXIAL CODE L1	AXIAL CODE L2	DESCRIPTION	OPEN CODES	COMMENTS
ENDOGENEOUS FACTORS		Factors that are intrinsically bound to the (situation on) the farm business and/or the stakeholders on the farm. These factors influence farm demographics "from within".		
Strategy and evolution of the farm business		The evolution/development of a farm business, especially major changes on a farm that are accompanied with big investments, is shaped by the vision of the main farm operator, the phase of the business life cycle the farm is currently in, the family situation, the current infrastructure of the farm.		
	Degree of independency	Farmers are actively and consciously trying to apply strategies in order to become less dependent of other chain actors	<ul style="list-style-type: none"> <li>- Diversifying to on-farm processing to gain a price surplus</li> <li>- Adding on-farm shop to increase rendability</li> <li>- buying additional land, in order to be more self-sufficient in terms of feed and manure</li> </ul>	
	Labour is a / the limiting factor	A lot of farms are at a certain point faced with a "labour dilemma": a certain choice about the evolution of the farm business would benefit the rendability of the farm but this implies practically that more labour force is needed, which is exactly the counterforce of the promising evolution. Some farms therefore invest in automatisisation in order to increase labour-efficiency	<ul style="list-style-type: none"> <li>- option of expanding the farm activities with a tearoom was set aside</li> <li>- option of increasing the farm size (speaking in terms of number of producing animals)</li> <li>- Suspicion about external/non-family labour; lack of trust relations with potential employees</li> </ul>	<p>Important factor that explains the decrease of farmers/farm labour!</p> <p>Especially the case in Flanders/Western Europe?</p> <p>Link with innovation and financial feasibility</p>

### D3.2 Report on farm demographics

Specialisation to increase business efficiency	<p>Some farmers choose to optimize the labour-technology balance of their farm business by specializing it.</p> <p>For some farms, specialisation is typically accompanied by automatisisation and expansion. To increase the labour efficiency, they invest in technologies and innovation.</p> <p>For other farms, specialisation is typically represented by increasing the efficiency of the production process (i.e. increasing the farm income without changing the farm size)</p>	<ul style="list-style-type: none"> <li>- increase labour efficiency by automatisisation</li> <li>- innovation and feasibility</li> <li>- working more efficient with less labour force</li> <li>- working more efficient in terms of production per unit</li> </ul>	<p>has implications for the demographic situation on the farm: less labour force is needed (in terms of number of people on the farm) due to different types of farm-development decisions</p> <p>Link with 'why'-codes for this choice: copycat, prestige of growing, agricultural advisors, socially accepted evolution (you're not a real farmer if you're not open to technical innovation and/or expanding/modernizing your farm)</p>
Diversification to increase rendability	<p>By expanding the farm activities, the farm income is increased.</p>	<ul style="list-style-type: none"> <li>- farm shop to increase rendability (without expanding number of cows)</li> <li>- care farms: farmers get a compensation for including a person with a disability on their farm work</li> <li>- "research farms": farmers get a compensation for providing their infrastructure for research purposes and/or on-farm demonstrations</li> <li>- to gain also an income from outside the farm activities (mostly by another family member, sometimes secondary occupation by the main farm operator)</li> </ul>	<p>has implications for the demographic situation on the farm: <u>more labour force is needed</u> (in terms of number of people on the farm) and/or farm labour is intensified due to different types of farm-development decisions</p>



### D3.2 Report on farm demographics

Increasing rendability of farm business is important driver for major change on farm	A major change on the farm (in terms of size, intensification, organisation, orientation) arises from the need to improve the rendability of the farm. This is not only about financial rendability, but also about quality of farming family life, making the work on the farm easier, etc. If there are more factors leading to a major change on a farm, then this is in most of the cases the most important driver.	<ul style="list-style-type: none"> <li>- increase labour efficiency by automatisation because workload was too high. This is often accompanied by a big investment.</li> <li>- increase in farm size is necessary to make the farm more profitable</li> <li>- Conflict between profitability/workability and interests/preferences of farmer</li> </ul>	<p>! overlap and links with previous two codes</p> <p>Structural changes arise from the need to increase rendability (in other words: from financial stress of the farm manager)</p>
Need to have the courage to decide/invest	To be able to proceed with the farm business, sometimes it is about being open to change and innovation, being motivated to do research and analyse what would be the best for your farm/what would be a promising path (sometimes this implies: to get over your habits and how it used to be), thinking out of the box.	- feasibility, interests & preferences and rendability solutions are not matching	! link with capability of main farm operator
Key turning points	Specific event has strong influence on the evolution of the farm business. A lot of respondents spontaneously identified such key moments in time; whereafter a decision was made that shaped the further development/of the farm. Sometimes a sudden shock puts a lot of pressure on the farm business, often the event is the main factor of a series of other factors that were already leading the farm towards a certain direction. Sooner or later, every farm is confronted with such a key turning moment.	- coincidences led to current farm situation	Key turning points are often illustrating a “break” in the farm business evolution. They alter both the demographic and structural situation on the farm. The implications the key turning points bring are conform the nature of the key turning event(s).
Nature of farming	Features, facts and implications that are inevitably specific to working in the agricultural sector and contrasts with other sectores. This code contains the implications of running a dairy farm (i.e. working with animals): you cannot abandon your farm; “the	<ul style="list-style-type: none"> <li>- Not an option to skip the work on the farm for one day</li> <li>- Strict working scheme leads to high work load.</li> <li>- working with living animals</li> </ul>	<p>Link with implications of family farming</p> <p>One needs to be open for these specific demands when</p>

### D3.2 Report on farm demographics

	<p>carroussel never stops turning”. You contineously have to follow up the health, fertility, production of your animals. The producing cows need to be milked regularly on fixed times, which has implications for your private life. Also, very specific to the dairy sector, is the fysiology and biological cycle of cows: the life cycle of the animals is relatively long, which influences the business development inevitably: long term decisions need to be made. The latter is difficult to combine with the natural riskiness and uncertainties in the agricultural sector.</p>	<ul style="list-style-type: none"> <li>- vision on life and work-leisure balance</li> <li>- work ethics differs strongly from other sectors</li> <li>- prestige as important driver for farming life</li> <li>- seasonality</li> <li>- social isolation</li> </ul>	<p>choosing the farming life. It means making sacrifices in your private life. This “nature of farming”, combined with someone’s personality, influences entry/exit decisions</p>
Capable farm manager needed for a profitable farm with promising long-term perspective	<p>The vision, opinions and perspectives of the farm manager are determinative for the evolution and development of the farm. The education, history, background, experience, entrepreneurship, (networking/management) skills, etc. of the farm manager are crucial for the functioning of the farm business.</p> <p>One special aspect is the affection and feeling with agriculture. To be born and raised on a farm is not a condition to be a good farmer, but it is an enourmous advantage. “This is hard to understand for an outsider.”</p>	<ul style="list-style-type: none"> <li>- importance of history, feeling/affection with agriculture</li> <li>- broad range of farm activities</li> <li>- a lot of work, always, also during the weekend</li> <li>- Potency to adapt and to work on own resilience</li> <li>- network of farm manager</li> <li>- staying up to date (by attending discussion groups)</li> <li>- money is not a good incentive</li> <li>- contrast concervative vs. innovative farmers</li> </ul>	<p>In the first place, a resilient farmer needs to love his job. <i>“You don’t do it for the money.”</i></p> <p>In the second place, he needs to have good logical reasoning ability to decide what’s best for his farm + being resistant to the dominant flow and social opinions. Management skills are crucial (being flexibel to be able to anticipate on environmental factors and be a strategic thinker) for the economic health of the farm</p>
Evidence of farming is the main driver for entry	<p>Entry “just happens”. It is an automatic result of a series of earlier decisions. It is an unspoken rule or knowledge. “I never really thought about it. It’s just always been this way. I would help my father and eventually take over the farm. That’s the way it was.”</p>	<ul style="list-style-type: none"> <li>- coincidences lead to final farm structural decision</li> <li>- to enjoy the farm work</li> <li>- “it’s in your blood”</li> </ul>	

### D3.2 Report on farm demographics

		Farming has lots of disadvantages that can only be outweighed by having a passion for the farm work.	<ul style="list-style-type: none"> <li>- emotional attachment to farm/farm work</li> <li>- pride</li> <li>- as the partner, you role into it</li> </ul>	
	Career switch is difficult, which leads to non-exit decisions	After making an investment, you need to pay your debts and it is hard to exit the sector. Also emotional attachment to farm, proud on what you build up.		Link with key turning points
	Role of the partner	Main farm operators state the importance of the support of their partner/spouse.	<ul style="list-style-type: none"> <li>- to cope with volatility of income</li> <li>- gender</li> <li>- interests of partner/spouse</li> <li>- partner swore not to marry a farmer</li> </ul>	
	Features & implication of family farming			
	Financial coherence farm and private life	No strict separation between household income and business income, mutual influence incomes and expenses of/from the farm and of/from the household	<ul style="list-style-type: none"> <li>- fair share for all family members</li> <li>- implications of price volatility on well-being</li> <li>- overlap of investments between family cycle and farm business cycle</li> </ul>	
	practical coherence farm and private life	The whole family is confronted with the need to make sacrifices in the private life (especially young people when they are confronted with the life of other friends). The farm work always needs to be done and gets priority.	<ul style="list-style-type: none"> <li>- flexibility in organisation of work and private life</li> <li>- farm work always gets priority</li> <li>- growing up on a farm has many implications</li> <li>- working with family members</li> <li>- family cannot skip farm work</li> <li>- frustrations, fights</li> </ul>	Interactions between farm and family have impact on overlapping farm and family life cycle; structural change on the farm goes paralell with natural evolution of a family

### D3.2 Report on farm demographics

	Fysical coherence farm and private life	The fact that the farm (farm infrastructure) and the house (home infrastructure) are not separated in space, can be perceived as either advantage or disadvantage	<ul style="list-style-type: none"> <li>- To agree about wages</li> <li>- flexibility household work and farm work</li> <li>- if you need to, you can give the kids priority</li> </ul>
EXOGENEOUS FACTORS			
POLICY			
	(changes in) legislation influence farm and interactions between farms	Legislation framework influences the business evolution. It can act as a barrier and prevent the farm of developping towards a certain purpose.	- quatum system increases competitive behaviour
	Thoughts about supports	First of all, there shouldn't be a need for these supports if farmers would get a fair price for their work. Second; the way in which subsidies are arranged and divided is hard to understand the logics of it. Third; the number of controls and the way in which they occur give a lot of farmers a discouraging feeling	
	Lack of perspective	Uncertainties about the future of farming. Worrying about political future visions, and what will be the global role of the flemish farming sector, influences the future perspective farmers have in mind for their farm.	Important link with price volatility, as a lack of perspective as a farmer is often related to price volatility by respondents
	Tenancy legislation	Land owners are not very willing to conduct "lange termijn pachten". Contrast between the authority of the land owner that should be respected and protected vs. the need for farmers to have a minimum amount of land available.	The uncertainties about land ownership and land use possibilities prevent certain evolutionary paths of the farm

### D3.2 Report on farm demographics

and/or discourage long term perspective of farmers

ECONOMIC				
Consumers influence farm (indirectly)	As a farmer, you are dependent of the people who buy your product. Therefore, when determining the purposes, orientation and organisation of your farm business, you need to take into account the wishes and perceptions of consumers. In other words, consumers can (in)directly shape/steer the structural decisions made on a farm business	Upscale to other chain actors	This is also social environment  The availability of land is really crucial for farm development and succession.	
Influence of Global/europe an economic frame on local business economy		- Problem of overproduction		
To cope with price volatility	Farmers do not know what price they will get for their product. Recurring bad prices and can lead to disillusionment, lack of perspective or can even hinder the farm evolution.	- fair price for farming output - implications of price volatility on well-being in farming sector	- Price volatility causes stress in the household, family from time to time	
Difficult position of farmers in the food chain	Due to their position in the food chain, it is very hard for the farmers be profitable.	- farmers feel treated unfairly - no fair price for delivered work - no appreciation for farming	high investment pressures in the farming sector reinforce this	
Farmers influence each other + compare their farm with other farms	Recurring phenomenon among farmers: they copycat each others behaviour. When one farmer in the village buys a new tractor, the others do the same, or buy a more expensive one. Some farmers distance themselves from this "battle of the biggest".	- technological innovations and development makes it hard for small farms to keep up with the majority		





### D3.2 Report on farm demographics

Also, the fact that certain chain actors give preference to certain farm typologies, leads to a disunity among farmers.

NATURAL			
	Mutual impact of environment and farming activities	The planning of farm activities depends on weather conditions. Concerns about climate make farmers sincerely willing to engage themselves.	Link with legislation: 'milieumaatregelen' are legally complicated
	Location/region of farm influences farm evolution		<ul style="list-style-type: none"> <li>- Land prices differ from region to region</li> <li>- A farm store is not a good idea in every region</li> </ul>
SOCIAL			
	Importance of networking	<p>To attend discussion groups, info sessions can provide the farmer with important information that can be used for the farm evolution.</p> <p>To have the right connections can be crucial for achieving the right information/opportunities for the farm</p>	<ul style="list-style-type: none"> <li>- important to keep good relations with neighbours as they might make a future opportunity possible</li> <li>- opportunity for farm transfer from social environment</li> </ul>
	Farmers influence each other + compare their farm with other farms		
	To be socially accepted is important for well-being and		<ul style="list-style-type: none"> <li>- conflict between what is socially accepted and what is economically efficient</li> </ul>

### D3.2 Report on farm demographics

farm continuity		
SUCCESSION		
Specificities of family farm succession enable the process		- trust relations between family members make succession a more likeable option compared to farm transfer to a non-family member
Incumbent generation	Whether or not the incumbent generation let the younger generation free (pushing/steering), and how they behave during co-operation, influences the final decision of the new entrant	<ul style="list-style-type: none"> <li>- important that the transferor engages before and after succession</li> <li>- to take into account the next generation in an early stage</li> </ul>
Factors concerning both parties	Who is involved in the decisions concerning farm transfer, is important for the final arrangements (and thus the demographic change)	<ul style="list-style-type: none"> <li>- important for further development to make agreements</li> <li>- succession is a slow automatic process shaped by coincidences</li> <li>- period of co-operation</li> <li>- incumbent must give responsibility to younger generation</li> <li>- implications of finity of co-operation period: labour dilemma</li> <li>- having different interests or visions about the farm business can be positive or negative for the farm development</li> <li>- difference in generational spirit + age</li> </ul>
successor	Whether or not there is a prospective successor on a farm shapes the evolution of that farm/has a big influence on the farm development. Farmers tend to	<ul style="list-style-type: none"> <li>- financial support needed</li> <li>- financial opportunities needed</li> </ul>

### D3.2 Report on farm demographics

	<p>be more motivated to improve the profitability of their farm if their child is the prospective successor.</p> <p>Farmers tend to be more focused on 'surviving until retiring' (mostly trying strategies/organizing their farm activities in a way to get financial supports because the farm cannot survive from production assets only)</p>	<ul style="list-style-type: none"> <li>- first trying another job is important (to gain experience and maturity)</li> <li>- typical enthusiasm of younger generation</li> <li>- to be interested in farming is not enough for successful succession</li> </ul>	
Practical strategy of succession	Labour dilemma: what after the period of co-operation? How to adapt succession arrangements to future perspective?	<ul style="list-style-type: none"> <li>- advice and help from consultants</li> <li>- fair division of inheritance</li> <li>- step by step transfer</li> <li>- preference for automatisisation because labour is expensive</li> </ul>	Possibility to share an employee

### 8.2.2 Large-scale corporate arable farming in North-East and North-Central Bulgaria

Axial Coding	Description	Open Coding	Description	Citation
Circumstances (reasons) enabling entering farming business	Due to the historical developments in Bulgaria the traditions of family farming was broken. Thus, each one of the current farmers/entrepreneurs started their business in last 20-25 years for different reasons. It is important because the family tradition and commitments to the farming are different compared to the countries were the natural development of the	Engagement in the state cooperative farms	The preliminary part of respondents before 1989 were employees in the state structures in agriculture as young specialist having education in agriculture and usually on leading position. It is important because after the changes many of them should start own business as making living. And their experience in those farms is crucial as well as their entrepreneurial skills since we talked only with those which farms sustain in last 20-25 years.	<i>I worked in this farm, which had 2,000 dairy cows, I was a zoo-technician, together with my wife, she was a lab worker in the dairy... After the liquidation of the farm, we were discharged from our positions because the activity stopped for 4 months, the animals were sold out and liquidated. And the farm remained empty. Then, the dilemma for us was what we will do – a young family with 2 children? Of course, the area is suitable for agriculture, and without thinking much, we started vegetable production, limited size, concentrated but we can manage all the operations. Later, after 1997, we started renting land and expand and change specialisation.</i>

### D3.2 Report on farm demographics

farms was not broken.	Impact (Influence) of specialisation (education) abroad	Farmers which graduated in the beginning of 1990s had different opportunities to travel on exchange visits and some of them were motivated to implement these best practices in their region and seeing different opportunities for better farming. During that times West European countries offered many programs/possibilities for post-communist countries as part of the policy of unification, cohesion etc.	<p><i>One of the main driving factor to start farming is that just after a few months I graduated, I had the opportunity to apply and to go for a specialization in Germany. And when I came back from Germany, I had known what was the situation in Bulgaria, and that difference between Germany and here which I realised push me to I try and to apply what I saw there.</i></p> <p><i>I have graduated school for mechanics in agriculture and things just happened.</i></p>
	Historical developments in Bulgarian agriculture and raised opportunities	The restructuring and liquidation of state structures built during the communist time let up to the fact that everyone became an owner of piece of land/machinery/animal. Thus, production factors were left free and many times unused in a proper way. Therefore, there were many opportunities to buy/rent/lease machineries/land etc. But also the level of agricultural production dropped off and the scarcity of raw materials for processing industry was a limitation.	<p><i>I started this business in 1997, a company offering mechanized services, but afterwards everyone started to buy machineries... and then we switched to agricultural land renting and cultivation.</i></p> <p><i>We started to experience difficulties to ensure quality flours, even the quantity was under question. And we decided to construct a mill. However,</i></p>



*once we had the mill, we realized that the problem is not the mill, but the problem is in grain production. Thus, we started to buy and rent land to produce raw materials we needed.*

		National policy support	Even before pre-accession and accession policies in Bulgaria was set up State Agricultural Fund offering different support to the farmers, usually as interest-free credits – either for long-term investments or short-term supply of inputs. In this time it was crucial due to the economic crisis in 1996-1997 and bankruptcy of financial institutions.	
		Market opportunities as reasons to enter farming	Except the mentioned reasons for most of the farmers the choice to enter farming and to start cultivate specific crops.	<i>We even started to cultivate a non-traditional culture - white thorn, about 70-80 ha, due to the market reasons. We know, the market dictates (demands) what crops we will grow.</i>
Financial challenges	The lack of tradition both in agricultural entrepreneurship	Access to credits	Currently, for large crop producers it is not an issue to ensure financial resources and to take credits. But at the beginning of their	<i>Well, until 2003 bank institutions did not have interest and did not</i>

### D3.2 Report on farm demographics

faced by farmers	and financial services is one of the main challenges for farmers to expand their activities because at the beginning the possibilities to take credits were limited. It took years for both sides (farmers and bankers) to build relationships which will be important when the generational change takes place		business activities it was. The credit institutions (during the communist time there was only one bank and the credit risk almost did not exist since state granted) had no experience and knowledge to manage proper credit products for this business. Moreover, lack of relationships and credit story of the enterprise was another constrain.	<i>trust so much in farmers and farming sector as a whole.</i>
	Credit burdens acceptance		One important issues is credit risk acceptance and the relationships farmers and bankers built during the years. 20-25 years ago it was not in our (almost every Bulgarian) mentality to have credits. There was a turning point in the behaviour of farmers in this regard which is related very much to their risk perception and speed of their development, expansion investments etc.	<p><i>How we did it? Ehm, I called a friend who had more "opportunities" (the word is used to explain that this friend had better sources of income), and he asked also his father and both of them put in pledge their property in front of the bank to my favour. And I succeed to buy inputs and I was lucky to make a profit and I repaid the loan. So, the things started...</i></p> <p><i>... if I tell you about our first loan of 46 000 BGN... Oh, my God these people (the partners – remark is mine) did not want to put in pledge this building, it was difficult to convince them, we needed the money... if we do not have that money, we cannot make the added value of producing, etc... and with "300 efforts" (an expression for very very hard), women are crying, but we took the credit... and we are</i></p>

*talking about 46 000 BGN, funny amount at this point of time. Then we got credit of 76 000 BGN, then 500 000 BGN, and last year I renewed the one for 1 100 000 BGN. But no one argued, because we own approx. 600 ha of land, have company assets, so it is peace and love.*

*And the banks have accumulated tremendous money, huge resources, huge resources, which they have nothing to do, and banks have started offering them to the farmers... because of the increased public interest in the sector, subsidies, etc. agriculture became of their interest also.*

Financial support for developing of the farm	Long-term and sustainable development of the farms is related with their possibilities to ensure machineries, storage facilities	Machinery and equipment provision (completeness) of the production process	It is important for the farmers' independence (to decide and plan cultivation schedule according to the weather conditions and varieties requirements; not to relate to the other farmers from the region or any owner of storehouse for grain etc.).	<i>And the question is what to do in the future - with better machines, more modern and less expensive, and moreover, that there are no workers, it is the main way to work more land with fewer people.</i>
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### D3.2 Report on farm demographics

	and proper equipment to manage the overall process of production – from inputs to marketing	Investment in land acquisition	It is again important for farmers' independence but it is also part of their risk strategies to ensure enough by quality and quantity land for their long-term vision of the farm.	<i>The own land – mine and of the partners, gives us absolute security and peace, we do not even control half because we have entered into ideal parts of the ownership, which gives us even more than 50% control on each parcel, without any effort.</i>
Diversification of and increase in number of financial sources options for farmers	After the year of 2000 – the start of pre-accession support by EU and adaptation and implementation of CAP rules – farmers have better access to financial support, at better conditions and opportunities to diversify the sources of investments	Investments under SAPARD	The very first experience of the farmers with EU funding opportunities and rules – it was difficult and very limited in regard to the access but SAPARD implementation was important for them to realise and even if their projects were not approved to get experience and to be prepared for the next periods (after 2007 and accession to the EU)	<i>... under SAPARD, I bought a modern Massey Ferguson tractor, along with two plows etc. that I bought as a technique.</i>
		Investments under RDP (2007/2013-2014/2020) including support through CLLD and LAG strategies implementation	The financing is crucial for farmers and their possibilities to renew and buy adequate machinery – the last possible innovation to implement, GPS tracking, precision farming etc. And those investments are key point in their competitiveness not only on the European but also on the World market (grain is a World trade commodity)	<i>We have two projects under Measure 121 Modernization, with which we managed to modernize the machinery park, to buy new machines and farm equipment.</i>
		Investments from own resources accumulated through payments	It is part of the capital accumulation and happens only after certain level of own land. Usually, farmers do not speak directly to that	

### D3.2 Report on farm demographics

		received under the SAPS	option but it is obvious that for some of them, it is a capital ensuring freedom in decision-making.	
Natural conditions, climate changes and pest and diseases control	Farmers always try to maximise their outputs and all of them undertake different actions to adopt technology/variety to the local conditions and continuously changing weather conditions as well as risks of pest and diseases.	Proper technology implementation	Farmers realise their dependence on natural and climate conditions and force their selves to update and modernize the overall production process – machineries, varieties, inputs. Moreover, they are forced to strictly follow good production practices including crop rotation to ensure long-term preservation of production capacity of the land. Also, in order to be able to manage properly their farm, strict combination of factors is applied, e.g. ensuring machineries in proportion to the land.	<i>1000 ha is enough, I have machines for 2000 ha, but I want to keep the schedule and to ensure timely operations. With these abnormalities of nature/climate, it is better to do a good farming instead of cultivating 2000 ha and getting half of the produce.</i>
		Territorial allocation of the farmed plots	Due to the described relationships usually farmers have their plots in different territories – different municipalities, even districts. Farmers realise and explain that there are pros and cons in this regard. From one side, it is question of costs – costs necessary to transport machineries from plot to plot, to transport production, to prepare and communicate with administration in different administrative regions etc. But from other side is a way of risk reduce in case of bad weather conditions.	<i>So we have, the land/plots are scattered and that's fine. At first we commented on this, we thought it was bad, but this year we will not talk about the past, there was rain in this part and everything went good. But on the other place there was no rain and the lower yields were compensated by the other plots, that's good. It is not good for the machines and long distances to</i>

drive them, it is costly, but as a whole it makes sense ...  
... and it is the same with the hailstorms, here this block, for example is destroyed by the hail, but the other one, on 500 m, will not.

Insurance is not recognized as a way to minimize negative consequences of them	Despite of the mentioned challenges current situation on the insurance market (insurance for produce) do not stimulate farmers to participate in. They have had a negative experience and do not consider it as an option to compensate their losses.	Yes, many promises are given by the insurance companies. But when the event (e.g. hail etc. – the remark is mine) happens, if you paid and insurance of 1000 BGN for that area/produce, the compensation is always calculated for the same amount... Then why I should do that efforts? I can just cover the losses by myself.
Greening and ecological requirements	It is seen as part of the proper farming and socially responsible farmer. But also it is important for soil preservation and farmers do appreciate it and additional income is generated through the green payments schemes	I am a person with biological culture and education and I am well aware of the need for these small living creatures, not just as a man who produces sunflower and rape, right. This is an element in the whole chain that nature has created and requires it to be preserved. The farmer cannot, with his irresponsible attitude and



*ignorance, do things that lead to the extinction of this species, it is a crime. So in many cases I have compromised my production when we had to enter and treat a certain pest just in order not to hurt the bees.*

*Now this is a part of new soil conservation technologies and I am very pleased with the next Agricultural Policy because in the Grain Producers Association I am doing so as part of the Green Requirements, for soil conservation, such as low level of or no-till, cover crops, etc.*

Open-minded to new ideas, new technologies, innovation	<p>Innovations are seen as part of the decision. Farmers are keen and look for new possibilities but usually in the same specialization which means new machines, varieties and inputs.</p> <p>Most of them showed up a great interest in technologies which preserve and even increase land productivity (soil fertility)</p>	<p><i>Innovations are mainly related to new plant protection, also new machines, because new machines with more computers, more opportunities, more information... even you have better online and on time connection with service-stations...</i></p>
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*... although I did the precise sowing, the precision farming, so*

*I had a dream to introduce it, we now have invested a lot of in machineries, autopilot sowing equipment, Farm Track monitoring, GPS, database development, automatic generation of work cards etc. Now we start the precision fertilization, which includes soil analysis, chlorophyll of plants, and so on. ... every year in the company there are usually between 10-15 different experiments, this year we have a little less - 12. This includes a Bulgarian-foreign selection, before registration, after registration testing, we have experiments with new chemistry, new genetics, new fertilizers and new technologies for sowing and fertilizing.*

Land ownership and relationships between land owners and	Historical development put one of the biggest challenge currently farmers face,	Short-term contracts for land rent/lease	It is an option given by the law and land owners prefer short-term contract due to the changeable situation on land market. For the last 10 years there is an enormous increase of land prices/rents and it continuous and	<i>The movement/flow on the land, I cannot predict the owners' decision, and the owners of agricultural land in Bulgaria are extremely unqualified and</i>
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### D3.2 Report on farm demographics

farmers and between farmers to buy/rent/lease farm land	namely ensuring farm land at quality and quantity allowing smooth continuation of their business. Increased level of competitiveness for land and level of transaction costs	owners are led only by the reasons to capitalize their ownership.	<i>irresponsible to their property, no quality property management. I had many cases when of the reason for 5 BGN more, despite s/he promised, they leased their land to another farmer. Because s/he heard farmers getting subsidies and are rich, etc. But the balance of the land is destroyed and it is not possible to plan for longer period. And also, because when you take a new piece of land, you must invest at least 3 years to have it in a proper use and you wait for income from that land. We're talking about inputs and crop rotation, yet responsible land use.</i>
Disadvantage to work new land (field)	It is important of knowing-having experience with the production factor, land, as well as its specific conditions to cultivate concrete varieties	<i>It is difficult, if we have to speak purely from agronomic point of view, it is difficult to farm new land (field if you do not have idea about soil quality and characteristics and what to expect from concrete variety).</i>	
Lack of opportunities to increase the arable land	Due to the complex land relationships and increased interest in farming it is not possible to enlarge the farm size at the speed as		

before. There are very few opportunities, mainly if some of the farmers' bankrupt.

On- and off-farm diversification - Diversification as strategy to sustain	Most of the farmers are looking for different options to diversify their activities but usually diversifications is related to the grain production	Diversification in trade and services	Usually farmers use the opportunity to became a distributor of inputs (fertilisers, pesticides, etc.). Thus, they secure first their farm with inputs at lower prices and second realise benefits selling them to the other farmers, usually smaller in size. The same is situation with grain marketing – farmers start to operate as middlemen to sell their produce and at the same time to ensure large shipment, they start to buy and resell grain from other, usually smaller in size farmers.	<i>I deal in the distribution of fertilizers, seeds, preparations, fuels and buy grains, and I export agricultural produce.</i>
		Diversification in on-farm enterprises to process waste and to keep workers engaged all the year (yearly employment for permanent workers)	It is related to activities utilizing waste, e.g. straw to produce pellets; or alfalfa to prepare granules for mixed fodder; or investments in a repair shop	
		Diversification in seed production in order to lower dependences on corporations	It is strategic decision for larger farmers because the proportion of seed costs in overall production expenses is not small but also because in this way they ensure the quality – it determines yields and future profit. It helps also to adapt hybrids to the	

			local conditions and experiment for better resistance to diseases and pests.	
	Diversification in animal breeding		It is a strategy that very few farms continue to apply despite all of them declare that it is the best way of added value production. Even many of them has started with mixed farms. But the situation in animal breeding sector is not in favour of the farmers – very low level of on-farm prices (expansion of the hyper market chains and no regulation on the proportion of the commodities offered by them and their origin etc.), lost connections with third countries markets (e.g. in the past such existed with Russia, Iran, Iraq, etc.) as well as higher level of labour force needed.	<i>The other activity we have developed is livestock breeding and currently, every year we calculate loss of about 20 000 BGN per year. We breed 250 sheep, but it is difficult to find and keep workers, it is difficult to sell the milk or the price is very low or no one wants to buy it and if you find someone, s/he does not take it every day, what should we do? To give up?...</i>
Farmers' cooperation	In Bulgaria farmers' cooperation is rather an exception instead a common action used to cope with different risks.	Farmers' inability to work in cooperation with their colleagues	Farmers indicate this like disadvantage to achieve better business environment and work conditions	<i>For example, they are not willing to cooperate because everyone here is a competitor to the other ones, everyone wants to take land, ..., so such a fight for this land happens...</i>  <i>The other problem that we inherited (by communist times), is the lack of a habit to work in a group, so long we have been</i>

*grouped that now everyone wants to do whatever they want but on their own... I know that only a large group of people can take on a big task, but we are not ready to work in that direction.*

*But the Bulgarian became doubting Thomas, not to himself, not to others, simply because there are no clear rules.*

Social relationships between farmers	It is important in the process of negotiation of land consolidation. Due to the very fragmented land ownership, each year farmers in one and the same region (usually at district level, NUTS 3) should negotiate and distribute different parcels in order to ensure land consolidation and possibilities for proper cultivation.	<i>Again depends on the people and in what relationship they are, there are also friends, they help each other, so maybe it's right depending on what relationships they are... but it is not under official organization</i>
Organization and participation in NGO – association and unions	It happens more often and farmers realise their better positions to defend their interests when they are organized. But it is valid only for NGOs which have ideal aims to defend farmers' interests and represent them in front of institutions, looking for dialog in regard to legislation etc. or/and exchange of experience and information	<i>The topic to set up it (grain producers' organization), in fact, was the problem we had to solve - precisely the fuel excise (it is govern by Ministry through different orders every year).</i>



### D3.2 Report on farm demographics

Lack of long-term strategy at national level for the development of the sector	It is related to the overall vision about the future of agriculture taking into consideration the future developments of CAP and national interests	Instability caused by continuous changes in policy goals as well as national legislation	Lack of policy stimulating farmers long-term planning	<i>At present, things are going on in Bulgaria day by day, that's the worst thing that hinders a lot.</i>
		Better link between education-research and practice is needed	Farmers experience lot of challenges with technology adaptation, varieties examination etc. and explained that very rarely there is good collaboration with educational and research institutions. Each one of them explain that the lack of national policy in this regard broke the relationship that exist before during the communist time. Now each one of them – education, researcher and farmer – act on their own. In this way farmers are forced and relate on the expertise and consultations given by the experts from multinational companies offering seeds, chemicals etc. Education and specialisation in agricultural schools and universities slight correspond to the realities.	<i>... we should place certain areas and efforts, enough to be representative and to be able to deduce a particular experience either with a variety, either with a preparation, with a fertilizer or with some other element of the technology. I would say that this is what everybody is looking for as a know-how, to fit elements ... to increase yield, to increase profits.</i>
		Institutions attitudes and policy implementation	Requirements and duties imposed by the legal form under which farm operates. It also relates to the feeling that farmers are not treated in the same way like the rest of businessmen.	<i>All departments work differently, including with different documents, despite the procedures are the same. Working differently, with</i>

Taxation – subsidies are subject of taxation, so the farmers do not receive the full having in mind that it is very small part of the level achieved by the rest EU countries.

*different requirements, it is very difficult to handle.*

*And this is a serious challenge, I have the capacity in my company, we manage it, but I it is a very big financial burden – one person is working on documentation about land management issues, another one is about tax documentation, one is dealing with the State Agriculture Fund and a regional directorates, one with Labor Inspection, Seed Control, Environment... I did not think of them because I'm angry, 14 institutions have checked me last year... 14 institutions ...*

Labour force issues	There are many challenges related to the labour force that farmers mentioned. Each one of them is serious and could be obstacle in	Labour force as a key factor for size/specialisation of the farm	It is seen as main challenge for the future, even more crucial than the weather. Therefore, farmers do not consider any possibilities for diversification to more manual intensive production. Moreover, the mechanization and ICT implementation is seen as a factor to overcome to some extend that shortage. So, only those who succeed to equip their farm and to adapt the technology	<i>One of the other major issues is demographic. The demographic problem is so serious that if we do not do something in the next 7-8 years, I do not know if there will be option to hire people to work.</i>
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### D3.2 Report on farm demographics

future resilience of the sector.

in order to need less workers, will be successful.

Local conditions - infrastructure, services etc. as a factor to attract workers	It is stressed as one of the major reasons by the farmers. No one of them is satisfied by the level of services. And it is a vicious circlep e.g. the school is closed because there are not enough children but the families of the few children that left in the village are forced to move in order to ensure proper education and better opportunities for additional activities for their children.	<i>Why I say this, because we are often attacked that we are the reason of depopulated the villages. Yes, I would definitely say so, but this process has not begun in the 1990s. This process started very, very early when the industry required labour in the cities, and then the people from the small villages moved in the towns. ... now we want to return the young people, honestly to tell you this is a losing project. The young wo/man, with her/his modern needs, can never make it to come back because our villages are not the pretty German and Austrian villages ...</i>
Young generation is not interested in agriculture	Lack of interest in agricultural activities and in general in life in village – it is a misunderstood image of good life in the town. It influences the possibilities and willingness for training and qualification of workers and further improvements undertaken by the farmers	<i>The question is still a wish. Here in Pavlikeni there is a School of Mechanization in Agriculture. And I try to accept students' internships to motivate them but it is clear they are not interested, it is not about the machinery... it is about the wish to work.</i>

Different (hard) working conditions are another explanation – related to the time balance between work-family-free time				
Opportunities and circumstances enabling farm success	There are many factors mentioned by the farmers but in Bulgaria still first generation succession will happen. There is no historical evidences if and how much each one of those factors will influence future generations' decisions.	CAP implementation and raised interest in farming because financing the business is crucial to continue	It is one of the main reasons for farmers to expand and to sustain having in mind the support offered through different programs and measures. In this regard the interest in farming raised.	<i>There must be a tradition, we do not have it. 20 and a few years of farming are very few, it's only one generation, it is now beginning the generation change, so serious tendencies to change the generation are coming. We, in National Association of Grain Producers we have done study on change of generations and grain production is one of the few branches that do not generate high skilled unemployment or highly qualified emigration. Because the motive is extremely serious in our sector and we invest in changing generations, highly skilled successors.</i>
		Farmer is proud of his/her realisation as well as their children	It is about personal satisfaction and perception of the success which is related also to the perceptions of the capacity to continue and be successful. Satisfaction of achieved personal life (wellbeing of the farm family) is part of this also.	<i>... but we are a technological leader in agriculture. We make agricultural production, which is rare for Bulgaria, for Germany even, no such.</i>

*From everything I do, I am satisfied, I am satisfied, I like it, the most important thing is that I produce a high quality products and I like it, I am satisfied.*

*It is like that, if someone does something it must be worthy and s/he should take the risk and to be responsible in everything in life - in family life, and in business... there should be clear vision on risk coverage and knowing for what you take the risk.*

*Well, they (the two sons) started and my sons are doing so much and very seriously, and they have that qualification and education and training to do it...*

Importance of education and training of the next generation	It is part of the sense of duty imposed to the farmers' children and it is seen as skills and knowledge are an obligation for inheritor identification	<i>While here, it turned out that our children are very involved with families and parents life...</i>
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*We are five partners, my son, my younger son is an agronomist, one of the partner's son studied plant protection, to the other*

*one's daughter is an accountant in the company, etc. So, next generation is coming, to other partner's son, is a student for the first year in specialization of agricultural mechanisation, ... the children come and there is security for them, for us also.*

Social activities and relationships	It is related to the perceptions and communication in and with the local community	Activities in local community	It includes everything: common actions and participation in local life, acceptance by locals, support given to/by local community in reward	<p><i>But here, in the small settlements/villages, the strong personal connections are still existing, strong generations, people who are not so damaged by the careerism and accountancy, everybody depends on the other, everybody knows it, no one can ever answer in the negative way,...</i></p> <p><i>We give away the rye (part of the social program of the farmer) to clinics, hospitals, social homes or social partners to treat people with gluten resistance, unable to process gluten or diabetic ill children etc.</i></p>
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*As an obligation we will provide them (local school) the necessary machines, tractor, inventories, etc. And, respectively, internship programs ensuring scholarships and better opportunities for children from poor families.*

*... then the peasants, seeing what I do, came to me on their own wish ... so the people who rent/lease their land to me, to be calm that they have a reliable partner.*

		Achievements being part of the local community and attachment to the place	Building image and became a leader in local community is a precondition for success – related to the trust and willingness of locals to work for and together with the farmer	
World trends and competition	Grain is World trade commodity and despite those farmers are large in size for Bulgaria, the capacity as country's production is very small compared to the international players outside EU, e.g. Russia, Ukraine	Competitors development	Countries price-makers in grain and oilseeds market are important in two dimensions: first, the way of organization in grain production and national support given to the farmers in these third countries; second, weather conditions which can compromise even the best economic situation in each competitor	<i>... but if you are not competitive on this, what a chance you have and they are the main producers, well, that Ukraine is going up a bit now, there is an imbalance and even Russia has not done it, build a few grain loading points when they do that, things will change even more, so I say that if not investing in technology it will be very difficult, there is land as much as you want and it is a nice land...</i>

*So, the harvest in Russia, Ukraine and Kazakhstan began and the prices are usually collapsing, and they sell cheaply because they produce cheaply, their cost is perhaps 2 times lower than ours given the natural resources and the state policy. They actively started investing in new technologies Russia, Ukraine, Kazakhstan, Moldova and started to aggressively subsidize agriculture.*

Changing needs and expectations of society	It is related to the overall expectations to the farmers to produce ecologically friendly products as well as the image of agriculture in the society as the main polluter of nature
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### 8.2.3 Extensive beef cattle systems in Bourbonnais, France

Axial Codes	Open Codes	Exemplary Quotes
<p><b>The search of profitability leads to structural and administrative changes</b></p> <p>Like every firm, profitability is necessary for the farm to exist. Farmers are submitted to lots of financial and economical pressures, among them the prices fluctuations which can modify deeply the farm system. Incoming farmers are dependant on farm profitability, because of the investments they have to make to take over a farm.</p>	<p><b>Diversification of the productions as a way of securing and stabilizing farm revenues</b></p> <p>Market price instability leads farmers to have a back-up solution in order to secure the farm income. In fact, the diversification of animal productions triggers off a diversity of outlets and consequently a more regular income. In that sense lots of the farms develop a side-activity next to the historical main one (beef cattle in our case-study), for instance poultry, porks or another business related to sales.</p> <p><b>The search for profitability influences the period of sale</b></p> <p>Animal product prices change during the year, according to availability and demand. Some farmers choose to spread the sales over the year or to deliver their animals in staggered order in order to obtain a better price and a better financial security.</p>	<p>"on a 4 ateliers : l'entreprise, les cultures, les vaches et les poulets, donc on va dire que c'est un peu complémentaire dans tout, ou généralement quand il y a quelque chose qui va pas, on arrive à passer le cap."</p> <p>"on cherche à produire de la viande de qualité sur les trois cheptels. Car on est fiers de produire de la Qualité, parce qu'on considère qu'on s'occupe mieux des animaux, on leur donne moins de produits que dans d'autres pays (hormones, etc.). Et c'est également le moyen d'être mieux rémunéré. En effet, plus la viande est de bonne qualité, plus on est rémunéré"</p> <p>"Toute l'année on vend des bêtes, ce qui permet quand même une autonomie qui est intéressante... [...] on a toujours fait un petit peu de tout"</p> <p>"Ce n'est pas comme la personne qui ne fait que de l'élevage ou du broutard, il vend ses broutard au mois de septembre, c'est son seul revenu de l'année. L'année où ça se vend mal, il fait pas de chiffre. Tandis que nous, tout combiné, on a des rentrées d'argent toute l'année "</p>

### Changes in technical practices help to reduce costs

Most of the farmers seek self-sufficiency on feed, to avoid dependancy on forrage or concentrate purchase. Change of technical practices (type of crops, operating mode, feed nature and quantity etc.) leads some farmers to be more self sustaining (autosuffisant) and to have less costs. Also the way of managing the herd health has consequences on costs.

“dans le reste des cultures, on essaye de mélanger les variétés, pour améliorer la rusticité. On essaye de mettre une variété productive avec une variété résistante, pour essayer de minimiser les achats d'intrants, aussi bien pour raisons économiques que pour raisons écologiques" "Initialement par manque de surface par rapport au nombre de vaches présentes, on est passé il y a 2 /3 ans à la technique du pâturage tournant. cela permettait de garder leurs prés en état plus longtemps. Mais cela améliorerait également leur gestion du foin, et permettrait une diminution des problèmes sanitaires chez les animaux (notamment les parasites) : Tout cela conduit à une économie sur l'achat de médicaments." « Le but visé c'est d'être le plus autonome possible c'est une des clefs de l'élevage. Un éleveur qui achète tout il ne peut pas pérenniser ça ferme ça c'est sûr »

### Animal welfare as a way to guarantee better economical results

Farmers, as breeders, are naturally conscious and careful about animal welfare. Not only it is a natural behaviour to take care of the animals, but it also has positive economical consequences: animals that feel well produce more and cost less (death, sickness).

"aujourd'hui, si on perdait 15 vaches, on n'[aurait] pas l'impression d'avoir fait notre travail, c'est par satisfaction personnelle dans un premier temps, et puis après il y a les résultats économiques derrière."

“Les animaux sont incroyablement sensibles ! Une bête qui souffre, elle ne va pas bien et elle ne va rien faire de bon, donc autant qu'elle ne souffre pas et qu'elle soit bien."

### Market price influences choice of production or sale

When the financial risks about a production type become too big or too fluctuating, farmers have to decrease the expenses about this production and are eager to modify their productions. On the contrary, when a production type meets good economical

“on faisait des taurillons, on a choisi d'arrêter l'engraissement de mâles pour finir les femelles [...]. La rentabilité n'était pas là... On change d'orientation suivant les besoins, suivant les envies, suivant le temps disponible, suivant les idées”

« Justement la vente directe, elle permet de fixer notre prix cela rémunère notre travail [...] Avant d'être agriculteur, moi j'ai

balance, it may influence farmers to switch to this production type. It can also have an impact on the choice of how products are sold (direct sales for instance).

**Changes in legal form have financial consequences**  
Changes in legal form happen when there is a demographic movement on the farm in order to benefit from financial shares or financial advantages

**Debt as a way to improve (or not) sustainability of the farm**

For beef farmers, the entry in farming is complicated because the purchase price could be very high and profitability could be very low. Debt is a way for farmers to access to available money to increase the farm size, to buy more efficient machinery or to develop new activities. But it could be also a source of bankruptcy for over-indebtedness farms.

**The search of profitability can lead to a less productive agriculture**

Producing less is a way of saving money because of a reduced use of inputs but the challenge is to maintain the productive value to avoid a decreased revenue. Organic farming is a good illustration of it: inputs are expensive but organic food are usually paid better. Label products are also well developed in the region.

énormement voyagé. Ainsi J'ai plein d'amis partout : Lyon, Bordeaux, Clermont... Et donc cela m'a permis d'avoir un réseau et a facilité la mise en place de la vente directe »

"Le GAEC, travail en société, c'est une facilité de transmission d'un capital, pour que ça se fasse en douceur et pour que le jeune installé puisse commencer à nous racheter les parts, pour que la transmission soit plus facile..."

" j'ai quand même envie de reprendre, après faut bien passer le cap, parce qu'on investit de fortes sommes en étant très jeune, ça fait peur au début quand on a 22 ans et qu'on s'endette de 400 000 euros... on se voit pas faire autre chose, donc y a bien un moment faut se lancer"

"S'il faut se contenter de ce que la nature va nous offrir il faudra se contenter d'avoir la moitié des vaches [...] qu'on a aujourd'hui. [...] Et donc on est beaucoup moins productifs derrière y'a quand même des charges, qui restent identiques comme les charges de fermage, nos charges de carburant, toutes ces charges-là sont à payer aussi bien qu'on soit en bio ou qu'on soit en conventionnel "

**Meat sector actors influence farm's practices**

**Diversification of buyers and products as a way to gain economic stability**

"Oui 90% - 95% est vendu à une seule organisation et puis on fait travailler quelques autres opérateurs pour le reste des animaux.

Farmers are surrounded by many different actors of the food chain, each of them having a more or less important impact on the farm. They mainly influence economically the farm but also provide some technical or material support. This technical and organisational environment is very important for the incoming farmer, as it may motivate him (or not) to take over a farm.

Most of farmers chose have a main buyer but some farmers sell their animals to different buyers, putting them in concurrence.

#### **Collective farming organisations as a way of saving (or not) some money**

Farmers collectives like CUMA (cooperative use of common equipment) enable farmers to avoid investing for all the materiel they need on the farm, offering them a lower debt ratio. But some farmers prefer staying on their own because of the complications it implies (materiel availability, care and maintenance, price). The collective "spirit" is usually familial.

"On est en CUMA pour le gros matériel, j'ai toujours connu cela, ce qui nous permet de réduire les charges au maximum. Cela a un impact économique mais également humain, car cela influence notre manière de faire (tenir compte des autres avant toute décision de fauche par exemple, car la botteleuse risque d'être déjà très demandée)"

#### **Cooperative enrolment to have a better valorisation of products (or not)**

Cooperatives are widely developed in French agricultural landscape and are generally dedicated to the products sale. They are important in the sales process: they allow to link seller and buyer and provide financial guarantees. The main advantage is a better negociation power (thanks to the higher number of producers and products) with retailers. But some farmers, especially those equiped to sell in direct sales, prefer taking care of the sale of their products to avoid intermediaries. The collective "spirit" is usually familial.

" on vendait à la coopérative [...], on a arrêté parce que on a eu des petits soucis. [...] avant on vendait tout, quand on vendait tout à eux, on avait une prime de 4€ de plus sur la tonne mais, enfin quand on voyait des voisins qui vendaient à des « privés », des « courtiers », plus cher, et bien cette année on a pas re-signé le papier "



### Slaughterers have an impact on the farm's technical choices

Their impact is linked to the classification of meat, which decides the price that is paid to the farmer. Farmers adapt their practices so that the carcasses are better conformed and thus more paid.

« C'est par rapport à la demande des abatteurs quoi. Donc nous après pour rentrer dans la filière Label rouge on a quand même des contraintes alimentaires [...] il faut des aliments tracés, ce qu'on fait »

« On recherche la génétique, on veut du lait, de la croissance, de la viande aussi, et avec une certaine finesse d'os pour se placer sur les marchés. Parce que si vous avez des bêtes avec de l'os important, c'est trop! On est déclassé, y' a trop de pertes! ».

### Presence or absence of operators may prevent the development of an activity

Concurrence with other actors may prevent the farmer to develop a activity. On the contrary, the absence of structures in the farm environment may also prevent an activity to exist (slaughterhouse for example).

“moi, je suis tout à fait marché local. Seulement on a l’abattoir de Villefranche qui est à 7 km. Donc on ne peut pas créer quelque chose, c'est pas possible.”

### Supply orientations lead to structural consequences on farm

CAP supplies are part of the

### CAP supplies and legislation influence farm productions and practices

Change in orientation of CAP supplies may force farmers to change their system because farmers are economically dependent on them. But regulations are not always easy to follow for farmers.

“la PAC dirige beaucoup aussi”

“je peux la reproduire mais à mes frais quoi ! [...] à l'époque on nous donnait 200€ pendant 3 ans ! Aujourd'hui je continue à replanter des prairies à 200€ par contre j'ai plus rien ! Je gagne les bénéfices de l'herbe !”

revenues of the farm and are necessary for it to exist. With price fluctuations, these supplies are even more vital and therefore influence change on farm systems in order to better comply with the requirements. However administrative procedures are usually complicated and dissuade sometimes farmers.

#### **Administrative procedures have a tendency to discourage farmers**

Administrative burden in farms is one of the weaknesses of the farming job. The high level of complication to comply with all the procedures may discourage farmers to take over a farm or to go on with the activity.

“tous les ans, on en touche un peu moins, cette année, les aides ont diminué de 3000 euros”

« on a 7 jours pour faire notre déclaration de naissance, de sortie ou rentrée de bovins, c’est 7 jours autrement on a des pénalités après. Si c’est au dessus (...) ils nous suppriment un peu sur les subventions qu’ils nous donnent »

« Ouais le travail administratif est pesant. C’est quasiment la moitié [du temps] pour les deux. Des dossiers de subvention à réaliser, ce sont des recherches. Encore plus de temps si on veut faire un projet qui se complexifie... C’est aussi pour ça que l’agriculture va vers la simplicité... »

#### **Mercosur is likely to lead to change of types of productions and sales in farming systems**

Opening markets with Mercosur will lead to different balances of production and prices. Farmers are afraid of it and do not believe to be able to face this competition. It may influence new incoming farmers to decide to give up livestock farming or produce high quality of meat.

"en France les règles sont assez strictes, cela donne une très bonne qualité de la viande mais cela entraîne des inégalités en terme de concurrence avec les éleveurs d’autres pays (comme ceux du MERCOSUR). Les exigences en matière d’élevage y seraient moins strictes et font baisser le prix de vente du produit, entraînant ainsi une concurrence déloyale"

« C'est triste à dire, aujourd'hui en France on est obligé de suivre à la lettre les normes, on a une réglementation qui est supérieure à la réglementation de l'Europe mais aujourd'hui on est capable, en France, d'aller acheter de la viande en dehors de l'Europe! C'est là qu'on est fort quand même! On impose des choses au producteur français, mais derrière on va acheter ailleurs! »

« Ce qu’on perçoit en risque c’est que le viande va diminuer à cause de la viande canadienne, américaine, Sud-américaine. Là,

		de toute façon on ne pourra jamais faire face étant donné nos coûts de production largement supérieurs. Sinon il faut produire en haute qualité, c'est ce qui me permettra d'avoir une ferme pérenne sur le long terme. »
	<b>Farm legal form is adapted to farm human resources structures and needs</b> Changes of legal form enable to access to different status and economic advantages. Changes of legal form during a demographic change is usual	“C'était les départs à la retraite [qui motivaient les transitions]. Une fois mon beau-père parti en retraite, ma belle-mère pour gagner quelques années de cotisations s'est installée en GAEC avec nous. [...] Mais une fois ma belle-mère partie en GAEC y avait pas 36 solutions donc c'était une EARL.”
<b>Environmental influences on farm structure and cropping decisions</b>  In a region where grass is the main feed for the animals, climatic change and especially drought has a strong impact on farmers practices but also on farmers' well-being (stress and unknown fear). Some farmers are better prepared to climatic change regarding their attitude or the farm land	<b>Climate change as a driver of structural change</b> Climate change may affect the availability of resources for farming: the most visible factor are the droughts and floods, which require additional purchases of feed (short term) or a change of crop/forage strategy (middle/long term) for a better feed self-sufficiency.	“on essaye d'adapter au terrain, parce que sinon ça sert à rien de faire un super truc dont on nous vante les mérites mais si ça n'a pas de rendu chez nous... Il vaut mieux faire des choses qui s'adaptent [...] On essaye de voir comment ça réagit sur nos sols aussi. Donc on n'en sème pas des quantités phénoménales à la fois. Si ça a bien réussi l'automne dernier, malgré la sécheresse, ça a été piétiné, et que ça a bien réussi, on le recommence.”  "ça fait la 3ème année de sécheresse qu'on subit, je me suis dit que ça au moins ça subira pas les aléas climatiques donc pourquoi pas ne pas tenter une diversification de production (poulailler)"
	<b>Climate change as an opportunity for economic diversification</b> Opportunities for producing green energies is rising up and may help to improve the profitability of the farm (solar panels).	"le nouveau bâtiment aura une couverture en panneaux photovoltaïques, ça nous permet de réduire de 20 000 € l'investissement pour l'exploitation"

**Climate change implies changes on herd management**

Specific diseases related to heat and humidity arise. Farmers have to adapt their techniques to limit health risks for the herd.

"faire des retenues d'eau; je pense qu'au jour d'aujourd'hui, tout ce qui est organisme agricole, FNSEA, l'Etat, ils disent qu' il faut faire des retenues d'eau pour pouvoir sans servir soit pour l'alimentation des bêtes soit pour les cultures. "

**Farmer's environmental attitudes influence on farm decisions**

Farmers who show interest on environmental issues (not only climatic) are more likely to adapt to contextual evolution about environment (more restrictive law about ecology, environmental friendly atmosphere etc.). On the contrary, farmers that are mostly against ecological approach of farming are less likely to accept these regulations.

**Succession implies a change in practices and approaches**

Incoming farmers usually express views sometimes slightly different, sometimes radically different, from the retiring farmer. This may lead to big changes on the farm structure or practices.

**Structural change often occurs when the successor takes over the farm**

Succession time is a good opportunity to instaure strategical changes on the farm (change of breed, new activity, different way of sale etc.). Indeed the incoming farmer may have new ideas to test and implement. If the farm is welcoming a new member (and not a replacement), these changes are necessary to enable the new member to install, otherwise the project may not be economically sustainable.

"Je me suis installé avec un contrat de 15 ans avec un intégrateur pour les volailles et on a construit 3 poulaillers supplémentaires"  
"Au moment de mon installation, j'ai démarré la vente directe, l'objectif étant de rémunérer notre travail au prix juste"

**New farmers are no longer in a logic of expansion (or not)**

On the contrary with the previous generations, new farmers do not necessarily seek to produce more, but in a different way (different way of sale for instance).

" Je sais que dans 10-15 ans, des exploitations seront disponibles , il y aura donc des opportunités de s'agrandir mais pour le moment c'est pas mon raisonnement et je pense que ça le sera pas »  
"Je dis pas qu'on peut peut-être pas avoir 4/5 vaches de plus,

But some other incoming farmers still express the need to expand the land, mainly for economic reasons.

aujourd'hui [...] mais je suis pas parti dans une évolution de cheptel."

#### **The choice of recovery is more and more assumed**

The fact of taking over the farm is less and less constrained by the family, so those who take it over do it because they want it

"sa mère voulait pas que notre fils monte sur le tracteur, il avait le temps. Elle ne voulait pas qu'il soit trop bercé dedans pour par l'inciter... Parce que nous on a galéré et on voulait qu'il fasse autre chose. Et puis en fait il a pris sa décision! Est-ce que c'est la bonne je ne sais pas... »

#### **Succession may lead to a change in farming orientation and tools**

Some young farmers seek to reduce the time spent caring for the herd and want to devote it to crops, when possible. This phenomenon echoes the research of food autonomy and adaptation to climate change. It implies reducing the livestock activity or investing in new technologies to improve the herd management.

"[l'agriculture de précision], ça vient un peu, c'est vrai que c'est un peu complexe et bon, ça je pense que je laisse le soin aux jeunes qui seront plus tranquilles là-dedans »

« X a mis en place la caméra [sur l'exploitation], on ne l'avait pas ça fait depuis 30 ans qu'on est installé, mais on ne l'avait pas parce que niveau financier on ne pouvait pas. »  
"Donc mon fils c'est plus le logiciel, donc faut marcher avec le logiciel. Ca va pas, je m'amuse à lui refaire des tableaux à côté parce que ça lui va pas!"

#### **Technical approach differs between generations**

Retiring and incoming farmers may have a different approach on the herd: incoming farmers have a more technical approach, based on calculations and references, whereas retiring farmers adopt a more sensitive approach.

« L'organisation du travail est beaucoup plus pointue dans tout ce qu'ils font la génération de mon fils. Ils calculent les rations, le temps de ceci, le temps de cela. C'est beaucoup plus pointu que ce qu'on faisait nous »

#### **Family succession of the farm helps to ensure a smooth succession**

Most of the installations take

#### **Family succession reduces costs**

It helps to limit investments for equipment and to buy back financial shares, but the succession between siblings (inheritance) has to be taken care of as well if

"Et là cette génération, comme mon fils est venu s'installer un petit peu en vitesse, c'était prévu avec mon époux, on avait dit nous on ne fera pas comme ça, on fera des donations. Quand il est parti, j'ai pris rendez-vous chez le notaire et j'ai fait des

place in a family context, because it brings many advantages: the knowledge about farming, the lower price of the succession, land accessibility etc.

only one child is taking over the farming activity (the child taking over the farm has to pay back his siblings).

donations de ce que je pouvais pour que [X] puisse s'installer sans être chargé en rien."

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#### **Family succession makes it easier to obtain land**

It is easier and cheaper to rent land when it belongs to family, especially in regions where land is very expensive. Again, inheritance may have important consequences on land use, as it may divide family land in a lot of small parcels for which the incoming farmer has to pay a rent (even if usually he has access to these parcels).

"Par exemple, le champs dont je vous parlais, ça appartient à des filles de la 2ème génération et la fille n'a pas voulu vendre parce que c'était de la terre du grand-père. Donc ce bout de terrain et un autre à côté, c'est des terrains que nous avons en fermage mais ça reste dans la famille."

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#### **Family succession favors the perseverance of the incomer**

The incomer will try harder to continue the activity if he is a member of the family attached to the farm.

"Quand son père est parti on a pas eu de grandes discussions et on s'est dit « on se remet dedans ». "Mon mari avait beaucoup trop travaillé dans cette exploitation pour tout vendre d'un seul coup et partir."

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#### **Family succession makes it easier to install the successor**

The family transmits a functional tool and knowledge. Moreover, children often play an important role in helping the parents during weekends or working peaks, hence their wide knowledge of the farm even before working on it properly. The parents have generally indirectly trained their children since the childhood, teaching him technical and practical skills. Some changes can be anticipated to facilitate the

"C'est vrai que j'ai la chance. mon grand-père avait des bêtes, mon père a continué."

« J'avais déjà anticipé son installation en rachetant des Aubrac"



child's installation (change in breed, new building, investments etc.

#### Good relationships between family members helps to ensure smooth farm succession

Having good relationship within the family is a good start to work together. Incoming farmers are more eager to take over the farm if they are used to work with their parents in good conditions. Sometimes changes are easier if the successor has no connection with the retiring farmer: the more the successor knows the farm and the farmer, the more the practices of the retiring farmer will have an influence on his practices

“...on va dire on l’aidait comme on pouvait, les week ends et tout, en période de gros travaux, style moisson ou foin, tout ce qui est un peu les travaux de fin d’hiver, style l’engrais, sortir les bêtes et les choses comme ça, on était tout le temps deux, principalement l’été, à deux ..”

**Family relationships important for smooth running of the farm**  
Farming associate an economic activity and a family experience, as both are usually strongly interlocked. In that sense, family is present in the

**Incoming farmer involvement in decision making**  
Decisions are usually made with people involved in the farm, but some incoming farmers suffer from the father authority, when they do not share the same ideas, especially about how the farm should evolve. Usually the incoming farmer is the one that make more concessions, because the father is seen as the one having the experience. Getting over the "father and son" family model is not easy in the business.

“Ça remet beaucoup, beaucoup de choses en cause, je veux dire qu'on a appris... que ça fait trois, quatre générations que c'est mené de cette façon-là, et qu'il faut remettre tout ça en cause, je dirais que c'est vraiment dans la tête que... si on avait dit à nos grands-pères ou arrière-grands-pères d'arrêter de labourer pour implanter des blés euh... je pense qu'ils se retourneraient dans leurs tombes.”

farming activity and the usual familial relationships can be transposed to the farming activity. Managing to leave the "father and son" relationship and giving a real place to incoming farmer is a challenge.

#### Roles of different family members

Activity on the farm is often divided between members, each one having its own speciality (herd, crops, administrative work), which makes it easier to delegate a part of responsibility to everyone. Retired parents usually help on the farm when possible (supervision, hay...). Partners (more often the spouse) working outside the farm is also very important because it gives financial security to the household.

"c'est elle qui s'occupe de toute la partie administrative, donc de ce côté-là je touche à rien du tout [...] en général elle travaille un petit peu le matin puis elle rentre à la maison. elle est souvent à la maison jusqu'à 17heures puis elle s'occupe des animaux. Elle gère la partie administrative et je m'occupe du reste." "C'est une manière de répartir les risques et de ne pas tous dépendre d'un seul revenu. C'est rassurant, parce que ça permet d'avoir un salaire à côté, s'il y a quoi que ce soit. De plus la vie est cher, donc si tout le monde vivait sur un seul salaire, ça serait compliqué."

#### Sharing ideas between generations

Predecessor's experience is important for the choice of practices. The type of production is related to the memory associated with it: if the predecessor's experience is good, the successor will tend to conceal the production and vice versa. On the contrary, the incoming farmer may bring some new ideas, gathered during his education and experience outside the farm.

"La charolaise je n'ai pas un bon rapport avec, par rapport à notre vécu de famille et à l'élevage. Alors que vous allez voir des passionnés de charolaise, et ça paraît logique ! » « Je n'ai pas vu souvent mon père pleurer, par contre quand les deux camions ont débarqués prendre les 100 vaches dans la cour quand il a pris sa retraite, pour lui c'était un gros déchirement et lui clairement aurait aimé qu'il y ait une continuité à avec son cheptel parce que c'était vraiment la base de son métier, pour lui. »

#### Human resources management are a key-element in farm success

As the farm sizes are increasing, more and more people are working on a farm. This implies developing abilities to work

#### Working with other people implies strong communication skills

Farmers are often used to work alone and to be their own boss. When enlarging the farm to new incoming farmer, the business becomes collective and human resources management is necessary to come to an agreement on decision making and everyone well-being. Good relationships between workers (incoming, incumbent or other) are crucial to ensure

"Oui à l'entente aussi, avec mon père ça ira, avec mon frère on verra comment... comment ça se passe.. je pense que ça ira, après y aura des choses à faire des deux côtés, mais non ça se passe bien, pourvu que ça dure. "

### D3.2 Report on farm demographics

in group or to manage employees. These new skills can be learned through different ways (experience outside the farm, effort made on communication etc.)

good working conditions and smooth running on the farm.

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#### **Farming suffers from a lack of attractivity among young people**

Farming has to cope with a decreasing rate of transmissions, due to labour issues (amount and hardness of work, isolation) but also economic issues (not well paid, debt, price of the land...).

"Je dirais qu'aujourd'hui y'a de moins en moins d'enfants d'agriculteurs ou même de jeunes qui veulent s'installer, ça c'est sûr."

« En élevage les gens arrêtent, y'a de moins en moins de repreneurs, [tandis] qu'en culture automatiquement y'a toujours des repreneurs »

« Faut en vouloir, parce que là on ne sort pas de salaire... sa femme travaille, ils vivent sur le salaire de sa femme, il sort un peu mais bon.

"les animaux c'est tous les jours, c'est 365 jours de l'année et ça reste du vivant, on a beaucoup de surprises. Alors que les céréales, on a des grosses périodes de travail mais derrière c'est beaucoup plus tranquille. Donc ramené à la rentabilité annuelle / au nombre d'heures de travail, vaut mieux devenir céréalier. On sera sûr de faire un SMIC, alors qu'en élevage on est très loin du SMIC"

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#### **Successor working elsewhere (or not) before coming back to farm**

Having an experience before installation is a benefit. Apart from learning other techniques or production systems, it reduces risks and sometimes costs, as the

"J'ai baigné dedans donc quand on connaît ça, on sait ce qu'il faut éviter."

experience makes it possible to be more responsive to problems.

	<p><b>Being alone on the farm implies hiring employees</b></p> <p>Farm' sizes have been increasing a lot lately, consequently a farmer alone may not be able to manage the farm alone. He may have to hire an employee to help him with some specific activities.</p>	<p>“étant donné que je suis plus que le seul homme sur l'exploitation, j'ai plus ni père ni grand père ni oncle ni rien, j'ai pas de frère non plus, j'ai que 2 sœurs, régulièrement on est amené à être coincés parce qu'il faut être deux hommes.”</p>
<p><b>Personal attachments and influences on farmer health and well-being</b></p> <p>Personal point of view of the farmer is also a strong driver to change (or not), according to personal requirements or philosophy</p>	<p><b>Health problems can drive changes</b></p> <p>Illnesses, accident, contamination etc. have influence on practices, productions or human resources</p>	<p>« Le dos... [mon mari] a... quelques soucis de santé puisque là on est parti sur certainement la maladie de lyme. Donc ça freine. Ça freine, parce que le matin quand on ne peut pas se lever parce qu'on a mal partout, et que faut attendre 3h avant de pouvoir faire la moindre première tâche »</p> <p>“[Les produits phytosanitaires c'est le] moins possible, le moins, le moins possible. Mon mari est décédé d'un lymphome, donc c'est un cancer du sang, vous écoutez parler de l'affaire du glyphosate...”</p>
	<p><b>The search for working comfort leads to changes in the management of the herd</b></p> <p>Farmers try to limit their working time by limiting monitoring periods of the herd</p>	<p>“les bêtes à cette période elles sont à l'abri donc elles sont faciles à surveiller. ”</p> <p>"C'est une facilité de vêlage, les bêtes on les met à la reproduction. le petit 9 mois après il est censé arriver. La vache est dans le pré, elle fait on veau et puis voilà... On dort bien sur ses deux oreilles"</p> <p>“Le gros de son boulot c'est la partie hivernale, justement, au niveau des animaux, des bêtes à l'attache où il faut nourrir et soigner, être matin et soir. Donc quand y'aura plus ça, ce sera un peu plus souple pour elle.”</p>

	<p><b>New technologies and material as a way to simplify the working conditions</b></p> <p>Farmers have less and less time to dedicate to each task, so assistance to physical works is very welcome on farms and facilitate the installation of women on farms.</p>	<p>"jusqu'à maintenant c'était à la fourche et puis on déplaçait la botte [de paille] (...) et puis on la faisait rouler sur une longueur et on leur donnait [aux vaches] comme ça. Et puis depuis l'année dernière c'est une dérouleuse qu'il y a devant le tracteur, et puis qui distribue le foin »</p>
	<p><b>Farmers neighbours are important for the farmers well being</b></p> <p>The support between neighbours farmer has an influence on the maintenance of the agricultural activity. Indeed, neighbours can help technically and / or support each other's.</p>	<p>"j'ai eu tous les coups de main que je voulais sans aucun problème, [...] On peut vraiment demander ce qu'on veut... J'ai des voisins en bas qui sont sensationnels, au-dessus, c'est un copain à W [son mari], il est super... En face c'est pareil... Non, il n'y a aucun problème. »</p>
<p><b>Insight into entry (or not) processes</b></p> <p>Many reasons can explain why a farmer wants to take over (or not) a farm. It can be because of the interest for farming (passion about farming), for familial reasons (obligation or deep historical motivation), to change or keep a lifestyle style etc. Some farmers try</p>	<p><b>Economic situation of the production is not in favour of succession</b></p> <p>Beef farming suffers from very low prices and most of farmers are no more able to live decently from their activity. It discourages people to become livestock farmer.</p>	<p>« Nous ne choisissons pas le prix d'achat (des céréales pour l'alimentation animale) et nous ne choisissons pas le prix de vente »</p> <p>"On a perdu 50 centimes du kilo sur les animaux... [...] On perd 200 à 250 € par bête, c'est énorme, c'est énorme."</p>
	<p><b>Change in family circumstances as a driver for entry</b></p> <p>Even if the children hadn't planned to take over the farm, a sudden death may precipitate them into farming anyway, because there is work to be done and not taking care of it could be seen as an abandonment. Incomers have usually no time to think about it and take over the farm as a child obligation.</p>	<p>"C'était en projet mais après sa retraite quoi, il aurait eu 60 ans cette année, donc c'était prévu qu'il emmène ma mère au moins jusqu'à la retraite et puis après on aurait avisé. Donc sa mort a précipité les choses évidemment"</p>

another experience outside the farm but may come back because either it was planned or they realized they really wanted to keep on with the familial activity.

### **Enjoyment and attachment to farming as a family tradition**

The attachment to animals, land or more generally farming is one of the most frequent reason to take over the family farm. Some incoming farmers are happy to follow the familial tradition as taking over the farm. It means a lot to them and could not imagine doing something else.

« C'est une exploitation qui a grandi au fur et à mesure des générations. Par exemple, l'arrière-grand-père de mon époux il a fait faire un puit. Nous avons des puits, nous avons des sources donc chaque génération a amené son petit grain d'amélioration. »

### **Entry as a lifestyle choice**

People who have experimented another way of life earlier want to become a farmer because of the way of life it implies: being his own boss, working in and with the nature, giving more sense to a living etc.

"... pour toucher 1500 [euros] avec les heures que je faisais en tant que salarié, je préfère bosser chez moi et rien toucher par exemple. Là je me lève le matin, je sais pourquoi je me lève . Parce que je sais que si je gagne rien ça sera pour plus tard et que plus tard je vais bien gagner ma vie "

### **Difficulties of working with family**

Working with family members implies dealing with everyone characters

"...et des fois mon père a son caractère, souvent il est tout le temps en train de râler et au moindre problème il va râler, c'est pas tout les jours tout rose"

### **Interest in working outside the family farm as reason for non entry or delayed entry**

Some of the incoming farmers clearly identify the need of working outside the family farm before taking over it, for different reasons: learning more about techniques, making some money, inability of the farm to support father and son, conflictual relationship with the parents etc.

"je ne voulais pas initialement reprendre l'exploitation, mais je voulais rester dans le secteur agricole et m'orienter vers le machinisme agricole et faire du commerce. Je me suis rendu compte en m'éloignant de l'exploitation familiale que je voulais succéder à mon père"



### Pressure to enter (or not)

Some parents push their children to take over the family farm, other don't. It is not easy to deduce if it has an impact on the farm sustainability later, but family pressure can be very strong on the countryside. Some incoming farmers feel as if they did not have the choice to enter or not.

“...je me suis jamais posé la question de ce que deviendra la ferme, j'avais deux fils . Je pensais qu'il y aurait au moins l'un d'entre eux qui reprendrait la suite Mais honnêtement, la ferme n'aurait pas été reprise j'aurais compris vue la complexité du métier actuelle ”

### Society influences farming choices

Social expectations about livestock farming have evolved a lot lately and are more and more present in the social debate. Farmers have to cope with these new ways of expectations but are not always able to change as fast as society is demanding it. Farmers also regret a gap between what consumers want and what they are ready to pay for.

### Farming suffers from a decreasing agriculture perception

Many farmers are sad to see that their activity is less and less supported by the society. Social reconsiderations of farming are becoming stronger and stronger, especially for meat production. It triggers off a negative perception of their everyday job. Some farmers adopt new practices because of it (more pasture, label production, etc.).

“ Ce qui influence déjà l’agriculture en général, c’est la médiatisation, c’est le gros problème, je pense qu’on en est tous conscient de ça quand on est agriculteurs soi-même.. c’est une minorité mais ça fait du tort à une majorité »  
 “le gros problème c’est qu’aujourd’hui tout est trop médiatisé et donc, on fait du tort à la production. Et à tort. Du coup, parce que dire qu’il faut plus manger de viande c’est de la bêtise, pour moi. Alors un coup c’est ça, un coup c’est les légumes, parce qu’il y a des pesticides, faut pas manger de viande parce que on peut se passer de viande. Pour moi c’est complètement faux.”

### Confrontations on the different uses of the countryside

Farming takes place in the countryside, which may create conflicts with other residents. These are in particular activities that can cause discomfort to residents (crop treatment) or certain aspects related to livestock (odours, noise, dust). This discontent is perceived as abusive by farmers.

«La moindre odeur de toute façon elle n’est plus supportée, après automatiquement si on sort pour faire des traitements sur les céréales, je veux dire, n’importe quelle personne voit un appareil pour traiter, ça y est c’est la catastrophe»  
 "Et puis les gens ils veulent venir acheter à la campagne pour la tranquillité. Mais il ne faut pas qu’ils oublient qu’il faut qu’ils acceptent de supporter les odeurs, les contraintes... Mais non! Ils viennent, ils sont installés pour avoir une maison tranquille et y’a quelque chose qui dérange.»

« Nous il y a eu des pleurs. Quand on a annoncé au départ ce qu'on voulait faire de la ferme la première chose c'est : qu'est-ce que les gens vont penser de nous, quoi ? »

#### Consumption patterns affect practices

Food is an adjustment value for consumers but has to answer more and more standards. Consumers always want to pay less but also want to have more guarantees and requirements for the food they eat. Farmers are forced to adapt in order to be able to go on selling their products.

“Oui forcément il va falloir s'adapter [...] ça va pas être l'inverse [...] Ca va être aux agriculteurs de s'adapter aux changements d'alimentation.”

« Mais alors dès qu'on commence à vouloir vendre en volume... faut que ce soit nettoyé, faut que ce soit propre... les magasins ils veulent des trucs tip-top. Moi, mes carottes, elles ne sont pas droites ! C'est invendable en magasin, personne n'en veut. Ah c'est compliqué... c'est compliqué... »

#### Search for animal well-being leads to changes in livestock practices and/or structure

Animal welfare is one of the most expected issue for civilians. To improve the quality of animals' life, farmers pay attention to the quality of food, transport conditions and / or prefer to prevent than cure. They can also build or change building to improve animal health and average welfare (more space, better installation).

“On essaie de faire nos propres aliments parce qu'on trouve que c'est mieux pour nous, c'est pas pour donner n'importe quoi à nos bêtes. On achète des aliments avec du lin, de la pulpe de betterave ” ; "Y a des années ils en ont fait partir en Russie j'ai dit .non car cela correspondait 8 jours de camion quand même hein. Chacun fait ce qu'il veut mais moi c'est non. Ça fait partie du bien-être animal aussi ”

“ Elles (les vaches) sont sur de la paille qu'on cure deux à trois fois dans l'hiver et donc qu'elles sont pleinement libres sauf lors des repas en général on les attache pour éviter qu'il y ait trop de concurrence les une entre les autres parce que les plus faibles se

font embêter par les autres, en général, on les laisse comme ça une petite heure le soir et puis après elles sont tranquilles, on les libère”

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#### 8.2.4 Large scale corporate crop farms in Altmark, Germany

Axial code	description
versatile activities make work in agriculture attractive	
Bad image of agri. makes entrance unattractive	
clarified succession is important motivation for farm manager	
buying machines to be less dependent on labour market	
work in agriculture requires high personal efforts	Work in agriculture requires high personal efforts, which can lead to overload.
cooperation with other farmers important for farm success	To have regional networks and cooperate with neighbouring farmers (particularly in young generation) is important for farm success and development.
support of former manager make entrance easier	The support of a former farm manager who is well experienced, can give practical advice and is able to help in difficult situations can make it easier for successors to enter the farming business.
private investors could be a chance for farm development	The presence of private investors can be a chance for farms, for example private investors could buy land and lease it out to the farm, which is sometimes more attractive than buying the land.

### D3.2 Report on farm demographics

Bureaucracy is a burden	The increase of bureaucratic requirements is perceived as burden. The Management need to invest much time in these tasks and have less time for other important tasks, like personnel management or the daily business outside the office. This reduces the motivation to work in agricultural production.
successor implement change	Successors often bringing innovative ideas on the farm, have a critical view on entrenched structures, cause changes in many areas and thus adapt a farm to present time.
strong dependency of agriculture on political decisions	Strong dependency of agriculture on political decisions, subsidies and legal requirements are perceived as negative an onerous.
living conditions in the countryside motivate to entrance agriculture	Some aspects of living on the countryside, e.g. living in a private house, natural environment or good childhood conditions are perceived as very positive.
current CAP forces big farm sizes	Small and medium size farms have to weigh, whether they can exist under this framework conditions or have the possibility to grow. If both is not realistic, some of them will have to exit.

## 8.2.5 Hazelnut farming in Viterbo, Italy

SELECTIVE	AXIAL	AXIAL	SUBNODES
<b>Demographic and structural changes</b>			
			<i>Demographic changes occurred and occurring to the hazelnut sector</i>
			Being a farmer is hard, not all people have the strength and the willingness to do it
			Demographic change due to lacking legacy
			Demographic change of labour due to expansion
			Demographic change due to the death of the oldest generation
			Generational Renewal
			Mechanisation crucial for (past) demographic change
			Multiple heirs fragment the land regarding surface and production choices
			<i>Structural Changes occurred in the hazelnut farms</i>
			<i>Converting to more sustainable production practices</i>
			Lack of trust and spreading of more sustainable practices hobbles the process of change and generates
			More sustainable production process prevent health issues
			Organic to receive higher prices
			<i>Mechanisation is an on-going structural change</i>
			Mechanisation influence the farm structure
			Mechanisation still represents a structural change for many farms
			The mechanisation sector is a result of the win-win approach between suppliers and farms
			Structural Change by purchasing land
			<i>Structural change, Farm diversification (both horizontal&amp;vertical)</i>
			Horizontal diversification
			Vertical diversification
<b>Drivers</b>			
			<i>Possible extreme weather events</i>
			Weather and Extreme events as risks
			Health risks



*The fundamental role of innovation for the hazelnut sector*

- Mechanisation crucial for (past) demographic change
- Mechanisation still represents a structural change for many farms
- The mechanisation sector is a result of the win-win approach between suppliers and farms
- Vertical diversification may boost the labour demand locally

*New farmers' generation already involved to the heart of the farm business, being determinant for the changing process*

- The new generation brings ethics (environmental awareness&Labor conditions)
- New generation involvement in farm business (mgmt, bureaucracy, innovation)

*New generation willing to continue the farming activity*

- Early involvement of new generation in the farm business
- The future entrants already thought how they would enter the agricultural sector
- The good performance of the farm and the sector pushes young to continue
- Tradition and culture about hazelnuts

*Non-Monetary drivers*

- Emotive bond to their land&territory

*Ethics (environment, health, labour conditions) drives new farming and business choices*

- Awareness about chemicals-related health issues
- Environmental Sustainability for going to the less chemical-intensive production process
- More general ethics motivations driving some productive choices
- More sustainable production process prevent health issues

*The high economic return of the hazelnut prevents diversification (jobs and crops) and encourages demographic*

- The high hazelnuts' profitability determined a demographic change making people dedicate fully to
- The high hazelnuts' profitability prevents agricultural diversification
- The low profitability of the previous (agricultural) sector determined the entry in the hazelnut

*The market (demand, prices, preferences) prompts changes*

- Diversification to reach more stable market conditions
- Land expansion to buffer future price plunge
- Land purchase for cost cushioning
- Organic to receive higher prices

The downstream industry suggests what to (not) change  
 The market demands locally processed products  
 The market dictates what to (not) change

## Process

### *How agricultural land is passed over*

Demographic change due to lacking legacy  
 The land is inherited within the family  
 Multiple heirs determine the uncertainty in the succession  
 Past exit from the agricultural sector prompts the selling of agricultural land for hazelnut production  
 the second potential farmer generation did not continue the farming activity

### *Legal forms for new entrants in the farm business*

Constituting a new society for managing the land purchase  
 Founding a new agricultural society for managing the farm officially  
 The future entrants already involved in farm management without being legally in  
 The future entrants already thought how they would enter the agricultural sector

### *Not adhering to CAP measures does not interfere with the process of changing*

Structural change (i.e., machinery purchase and renewal) is not determined by CAP subsidies  
 The take-over process took place avoiding adhering to Pillar II measures

### *Part-Time Farming determines a slower, more limited, but less risky structural changing process*

Being involved in another job limits the full mgmt of the farm and the changes  
 Having another (principal) income reduces risks and risk perception  
 Support of a trusted contractor as a fundamental to continue in this sector

### *Personal experiences and early involvement, past farm choices. agricultural culture and economic performances*

Agricultural tradition and culture smooth the generational renewal process  
 Bad experience (do not) prompted structural changes  
 Generational renewal process smoothed by early involvement in the farm business  
 New generation integrates farming with other info coming from other sources (e.g., technical  
 Past (positive) experience prompts structural changes

The good performance of the farm and the sector ease the generational renewal process  
 The passing-over process is long and not easy  
*Traditional knowledge humbling the changing process*  
 The attitude of the oldest generation friction changes  
 Structural change is a long&hard process

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## Constraints to Change

*Environmental&Climate change as a risk*  
 Asian bug as a potential enviromental risk  
 Health risks  
 Weather and Extreme events as risks  
 Wild animals as a risk  
*The high cost of change limits the change*  
 High cost for further on-farm process limits its development  
 High cost for insurance limits its use  
 The price differential between conventional and organic does not compensate production losses  
*Lack of proper and significant support from Public institutions regarding innovation transfer, public subsidies, and further*  
 Lack of bridging between academics and farm-gate level  
 Lack of proper technical assistance (PO's, Gov's)  
*Negative aspects of CAP Measures*  
 CAP aspects that need to be improved according to the respondents  
 the sluggishness of CAP payments  
 Part-time farming limits the full mgmt of the farm and the changes  
*Perceived Economic and Institutional Risks*  
 Diversification means more investments, more work to do, and lower net profit than raw hazelnut  
 Downstream market power negative impacts on prices  
 General economic uncertainty hampers new investments  
 Hardship entering the market  
 Institutional&Societal Risk

International Turkish price fluctuations affect local prices

Price Volatility as a risk

The claimed expansion will entail negative price effects

*Traditional knowledge rooted in oldest farmers often represents a cultural blockage for innovation and, thus,*

Conversion to the more sustainable production process is not well seen by the old farmers'

Converting to more sustainable production approaches brings some frictions with neighbour

Overcoming cultural blockage by changing

Structural change is a long&hard process

the traditional belief is not always well-based

### Enabling factors for change

*Environment-related challenges and strategies to control them*

*Environmental&Climate change as a risk*

Asian bug as a potential environmental risk

Health risks

Weather and Extreme events as risks

Wild animals as a risk

*Strategies coping with environmental&climate change risks*

Agronomic strategies for fighting extreme climate events

cabin tractor preventing health risks

Insurance as a risk mgmt tool for climate risk

Irrigation in response to drought

Structural change due to pests

*Farm structural characteristics, namely inner decisional process and external participation to*

Academic and farmers initiatives have a positive impact on changes

Cooperation with other SC agents

Decision-making process shared among farm members

Early involvement of new generation in the farm business

PO's good for networking and updates

Support of a trusted contractor as a fundamental to continue in this sector

*Good administrative&bureaucratic support provided by local structures*

Local (private) centres for agri-services provides good administrative assistance to  
Local machinery suppliers provide technical support in designing and adjusting the  
PO's provide good services related to the CAP

*Market&Institutional Uncertainty*

*Perceived Economic and Istitutional Risks*

Downstream market power negative impacts on prices  
General economic uncertainty hampers new investments  
Institutional&Societal Risk  
International Turkish price fluctuations affect local prices  
Price Volatility as a risk  
small farms will disappear due to the future price plunge  
The claimed expansion will entail negative price effects  
Thefts

*Strategies coping with economic uncertainty*

Activity diversification reduces risk  
Believing in the enhancement of the local PDO for adding value  
CAP subsidies mitigate price drops, and, hence, monetary losses  
Further on-farm processing to gain economic stability and bargaining power  
Having another (principal) income reduces risks and risk perception  
High liquidity for sudden shocks  
Land expansion to buffer future price plunge and cost cushioning  
Organic to receive higher prices  
storage facility for temporal arbitrage  
Surveillance System against the risk of thefts

*Personal&On-Farm experiences prompt changes*

Bad experience prompted risk management strategies  
Past (positive) experience prompts changes

*Strategies to fight potential risks*

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Ideas for the incoming Asian bug  
 Insurance as a risk management tool (potential yet)  
*The (non) significant role of CAP measures in supporting both demographic and structural changes*  
*Motivations for not adhering to CAP measures*  
 Ethics for not adhering to CAP measures  
 Having much money prevents the use of CAP for structural and demo-changes  
*The significant role of CAP measures for demo&structural changes*  
 CAP encompasses a significant impact for demographic changes  
 CAP entails a positive role for structural changes  
*The old generation's attitude towards young farmers facilitates both the demographic and structural*  
 Decision-making process shared among farm members  
 The future vision of the old generation of farmers concerning their farm  
 Old generation attitude towards young people is positive  
 Roles of the oldest generation of farmers

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## 8.2.6 Arable family farming in the North-East of The Netherlands

Codes	Overall codes
Appreciation due to joint activities	Enjoys being a farmer (farm family), incl side activities
Being a farmer also means being an entrepreneur	
Enjoys side activities (farm-related)	
Enjoys side activities (off-farm)	
Being a farmer also means being an entrepreneur	
Having had the possibility to take over the farm feels like being blessed	
self-evident to become farmer	
Proud to be efficient and to be a family farm	
Side earnings/other incomes	
Taking over the farm has always been self-evident	
Taking over the farm was self-evident due to strong appreciation for the profession (and no interest in other professions)	
Extreme weather: key to deal with it.	Able/need to deal with uncertainty
Laws and Legislations: don't fight the system, work with it	
Not feeling social pressure	
Regulations: Laid back for what the future will bring	
The food industry is resilient	
Change mainly for society	Drivers for change
Feels societal pressure because of subsidies	
lack of societal appreciation	
Pressure from animal protection organizations etc	
soil improvement is very important; the soil is our source of income for the coming 20 y (so we should not focus on maximising yields in the current year)	
societal demands are not always realistic but we need to adapt (event though we think ourselves that we do a great job)	
Societal pressure due to spraying	
Lack of social appreciation	

Societal pressure due to lack of proper communication about agriculture	
Societal pressure (spraying, quality of water)	
Soil structure is not optimal so more sensitive to droughts etc	
soils: need to take care of them	
We need to change (herbicides)	
Current practices lead to soil depletion, diseases	Change due to personal motivation
farmers understand that practices can change	
future: our children will likely farm in a different way. We already need to look how we can adapt	
take opportunities	
future plans: look to markets etc in try to adapt if possible	
Change: difficult because of existing legislation	Change comes with bottlenecks, time, costs, ....
Changing according to regulations require subsidies	
change mainly for society (only a 'bit for ourselves')	
changing costs time	
Changing requires investments	
changing to another crop also requires adaptation from customers (need to trust that quality is good)	
changing to another crop is not always possible; infrastructure and industry need to change as well	
farmers are resilient BUT we need financial support for adaptations, or broader possibilities (there are currently too many restrictions)	
we have several new ideas but without financial support we can only continue as we do currently	
Nature conservation project are not very succesful due to differences in ideas and projects are too small	
Obstacles: Rules and Regulations	
Subsidies are used for the wrong things; better to use for environmental innovations	
Farmers stop thinking themselves	
keep on going in the current way (with some growth)	Keep status quo -- because I like it
no growth, take it easy (but still profitable)	
Future plans: Optimization and Expansion	
stay a family farm but continue to grow	
Optimization of the soil and decrease in size	

### D3.2 Report on farm demographics

Future plans: not sure yet; as I do not know yet if I have a successor	Keep status quo -- because I do not have a successor
Future plans: reduce size of farm, manage all by myself	
Why to invest if I do not have a successor	
Farm ran by family	Decision making abt fully by farmer/family
Decisions are taken together	
Running the farm solely	
Consultation (farmer clubs, chain); only with a few	Decision making involves others
Consulting experts	
Consulting about future etc is with accountant	
Succession: not my piece of cake	Succession: NO, or ?
Succession; no successor and family does not care	
Succession? possibly -- if I can do it together with my partner	
Cooperation with other farmers (arable/livestock) must be 'love from two sides'	Other
Synergy between different disciplines within the company	
Having employees implies that you give up some freedom	
Not dependening on others	
Not fan of big cooperations	
Not sure about climate change	
Not very enthusiastic about the environmental benefits of precision agriculture	
Prefers Brussel over Dutch government	
Profitable farm	
Supply chain Avebe works well due to niche	
Supply to world market (grains) is very hard	
Too many different opinions among policy makers	
Happy with initiatives of ANOG (soil, biodiversity, .)	

### 8.2.7 Family fruit and vegetable farms in Mazovian, Poland

Selective codes (themes)	Axial codes	Open codes (exemplary quotes)
Personal (family specific factors affecting demographics)	Raised in the countryside, on farm	<p><i>"And till now he was saying- "Mama, when I come here to Tyszowiec (bigger town before reaching Kryszyn) I feel that I'm alive, I'm strangling in the city" (MC 2 PL);</i></p> <p><i>"For 2 years I have been formally the owner of the farm, but I actually helped my parents since I was a small child, 7 years old .... If a man is already brought up in this village, then much of the knowledge remains. That's how you spend your time every day, so even if I would not get this 100.000 as a young farmer, I would continue to run the farm. Because I like it anyway, because I prefer this rural landscape rather than urban" (MC 8 PL);</i></p> <p><i>"My parents previously cultivated typical crops for this region: tobacco, beets, cereals. I helped them by working since childhood, so agricultural production is not unfamiliar to me" (MC 9 PL)</i></p>
	Passion	<p><i>"Son, a great enthusiast of agriculture" (MC 2 PL);</i></p> <p><i>"I see myself in this field very much ... I like the raspberries that I started to grow in the first stage, I have added strawberry later, and now I want to introduce American blueberry ... it's just good to work in what you feel comfortable with.... Because I think that if I treat it as a hobby, then everything goes well" (MC 9 PL)</i></p>
	Interest in agriculture	<p><i>"It was the first enterprise which declared bankruptcy ... we received dismissal ... we were interested and liked gardening .... so we bought the farm" (MC 6 PL);</i></p> <p><i>"I graduated in law, but I did not want to go in this direction .... Do I regret this decision? Well, it is different. If there is demand and something is left, I do not regret it. But like today, I do not know, maybe. As we say, everywhere is good where we are not "(MC 7 PL)</i></p>

Family traditions	<p><i>"This is a family farm taken over from my parents. The husband also comes from the village, near - from Stara Wieś. We took care of it together. We took over the farm in 2004. We were helping our parents before. We helped, we did not have land on ourselves. We took over the farm with EU subsidies, a "young farmer", etc. We started to develop it" (MC 2 PL);</i></p> <p><i>"Grandfather had orchards here, as first in Polubicze. In the area, there was only one more orchard in Horodyszcze... Since 2003, my dad has given me 5 ha, and a bit later 1 ha. And here the orchard was planted, 2 ha of pear, 0.7 ha of plum and 3 ha of apple orchard .... In 2003, it was 5 hectares, because the second 5 hectares he gave me in 2010 ha" (MC 7 PL)</i></p>
Difficulties in finding work outside agriculture	<p><i>"We don't have industries in our area, you couldn't find a job, because there are no companies, you had to look for income yourself... "Our decisions were mostly influenced by the general economic situation... Life forced us to it... That you need to do something to have money and to survive" (MC 4 PL)</i></p>
Help from parents	<p><i>"My parents help me there, they support me in terms of knowledge and practice, because I do not have enough knowledge or skills. It's very helpful"(MC 8 PL);</i></p>
Satisfying income from the farm	<p><i>"We got married in 1985... Well, what are we going to do? At that time, the times for growing fruits were better. Good times. Very good times... And the previous years were also very good we decided that we would stay" (MC 5 PL)</i></p>
Access to financial resources	<p><i>"We took over the farm and using EU subsidies - among others from the young farmer program - we started to develop the farm ... We bought the tractor, we used 6 EU Funds. So that we benefitted a lot, really"(MC 2 PL);</i></p> <p><i>"From modernization I took a young farmer in 2007, it was then 50 thousand PLN, and in 2015 I took a tractor and sprayer, and in 2017, a trailer and plow (MC 7 PL);</i></p>

### D3.2 Report on farm demographics

Interest (care) of children	<p><i>We will be slowly resigning. We have that one son. He just does not want to be here. He will do something in the field. He will be coming from Zamość, I suspect. Because he likes it, this is his passion" (MC 2 PL);</i></p> <p><i>We still hope that he will take over the farm. However we are wonder if there is a sense in it. How the economic situation will change? We are not sure if it makes sense to put him in this struggle" (MC 3 PL)</i></p>
Too small farm, insufficient income	<p><i>"Two have a car repair shop, and the third one works as a driver... They were never interested in the farm, didn't gather strawberries. All they could do is take them to fruit collection centre. This farm is too small. It is too small to draw them here" (MC 4 PL)</i></p>
Partners of potential successors	<p><i>He has a girlfriend from the city and said - the end, I will only come on weekends" (MC 2 PL);</i></p> <p><i>"My wife has nothing against to moving to the countryside, although she would still like to work in Radio" (MC 3 PL)</i></p>
Old age, health and discouragement	<p><i>"Because I am 72 years old. I don't have the strength. I am too old" (MC 1 PL);</i></p> <p><i>I have enough all of it, all those problems. I have been a farmer for 32 years and I am burned out. Man is discouraged by this" (MC 3 PL);</i></p> <p><i>"The age does its job, disease, arms are hurting, everything hurts, need to end it all" (MC 4 PL)</i></p>
Considering passing down the farm	<p><i>"Son is definitely not coming back, but God, nothing is certain. They have an apartment in Warsaw, have jobs... One daughter... definitely doesn't want it, she has a job... in her profession, she doesn't see herself in agriculture. Son in law doesn't as well. And that's it. One more daughter, as wife mentioned, she is single and keep away from agriculture... she ran away to Wroclaw" (MC 5 PL);</i></p>



*"I do not know. It will be difficult for me to tell today what will happen in a dozen or so years, will one of the sons want to take over the farm? What do you, wife, think? .... (Wife). They are still too young to think about it. The older one is more interested in a big city. He would prefer to be in the city"(MC 7 PL);*

*"An agreement within a family ... a wife, but also children, I think in these terms, that is, offspring that could continue to run this farm in the future, because I promote it to them, it is my hobby"(MC 9 PL);*

Higher income from work outside the farm

*"Two daughters are pharmacists (have their own pharmacies), third daughter is a psychologist, lives in Warsaw, none of them is interested in taking over the farm "No one to come here, maybe the daughter from Warsaw would take care of the farm, but only through the internet... But it is just wishful thinking. Grand-children, the grand-daughter is into science on Wroclaw Polytechnic University, think in the field of mechanooptics? It is some combination of mechanics and optics, there is something like that. This year she writes her masters paper. The oldest of the grandchildren is studying medicine. So there's no one to transfer the farm to. I would teach someone, but who? The similar situation is in many families... There is nothing you can do about it "(MC 1 PL);*

*"Son is definitely not coming back, but God, nothing is certain. They have an apartment in Warsaw, have jobs... One daughter... definitely doesn't want it, she has a job... in her profession, she doesn't see herself in agriculture. Son in law doesn't as well. And that's it. One more daughter, as wife mentioned, she is single and keep away from agriculture... she ran away to Wroclaw" (MC 5 PL);*

Economic factors, decrease in income  
Fall of the profitability of production

*"We still hope that he (son) will take over the farm. However we are wonder if there is a sense in it. How the economic situation will change? We are not sure if it makes sense to put him in this struggle" (MC 3 PL);*

from agricultural activities

*“Big drop in profitability.... At the time we had only 5 ha of apple orchard, the profitability was much bigger. During first five years we have built the storage room, a house, we bought a car – everything from those 5 hectares. And today? We have 22 ha....?” (MC 3 PL);*

*“The thing is that the costs of production of 1 kg kept increasing, the price was not changing and in recent years it even dropped. And the profitability fell down... You can add to the business one year, but on the second on third you have nowhere to take the money from... Where can you get it? Just let it be a fallow land” (MC 5PL)*

Fluctuations in yields and market uncertainty

*“An unstable market - at the very beginning, my approach to cultivation in agriculture was aimed at running three crops. Bearing in mind historical price drops, I have the impression that this is the safest trend. As one crop is at a lower level, usually one of the next two is at the appropriate level”(MC 9 PL);*

*“This is the first thing and if you can manage these fluctuations then you have apples every year. In those years when there are less apples they are more expensive and it’s a profit. Those years when there are too many apples and I wasn’t able to thin them out. Because there are years, when you just can’t manage” (MC 1 PL);*

*“Back to the prices, it is important that they are stable, that I can predict, for example, while I plan in the winter, what I will grow. Parsley was for 1,6 PLN/kg, and later it turns out that it is for 0.6 PLN/kg. Is it the same with beans. The beans have such huge price fluctuations” (MC 1 PL);*

*“Berry sector is struggling with price uncertainty ... the farmer is not sure what the price will be on the purchase ... He comes to purchase center and then he is learning what the price is. This is not a comfortable situation” (MC 9 PL)*

Fruit and vegetable prices have remained at a similar level for many years	<p><i>"As the parents started in 2005, cauliflower was, the price was about PLN 1, and at the moment it is the same. I do not know if there is a profession in Poland, which has not risen for 20 years, the salary has not risen?" (MC 2 PL);</i></p> <p><i>"The same prices for thirty years" (MC 6 PL)</i></p>
Prices of pesticides, fertilizers, fuels and other production resources are constantly growing	<p><i>"The prices for pesticides, fertilizers, and fuels increase, same with wages for seasonal workers.... Costs go up, but what about the apple?" (MC 1 PL);</i></p> <p><i>"In general, production costs increased, fertilizers, spraying, at that time went up by about 500%"(MC 5 PL)</i></p>
Lack of seasonal workers	<p><i>„Now a part of that orchard, those 3.5 ha from highway to the valley, is not cultivated, so that there would be less hand work" (MC 1 PL);</i></p> <p><i>"And there are no people to work. There are no people, there are no people to work around here. People are sitting in houses, they have nothing to do and do not want to come to work. We pay 100 PLN a day for cauliflower fragmentation, and they do not want to come because they have care, 500+. They are happy. There are no people to work at all"(MC 2 PL);</i></p> <p><i>There is a problem with the labour in the villages. Unfortunately, the times in this aspect have changed. Before they came to you and asked if there's work. Even the local Poles. Asked if there's anything to do, maybe on the field, maybe with construction. If today you would need anyone for work, you will not find anyone in the village(MC 5 PL);</i></p> <p><i>Employees. It varies .... Because there is unemployment, but to find someone.... I have insured a lot of people in KRUS, and they will come once, once not. There are no permanent ones, who will come to work 5-6 days a week. They come when it suits them. They will work one day and they will not be</i></p>

*there the next day, it differs. We will start to pick four rows with several people, they will not come the next day and it is not clear what to do, and now it is a big problem” (MC 7 PL)*

Changes in  
consumer behavior

*Due to change in consumers’ tastes the farm changes the varieties of fruit trees. “there is ongoing rotation, we constantly change the trees. When a new variety of fruit is popular among customers – it is popular for 5-6 year. A tree needs 3 years from time of planting to fruiting” (MC 2 PL);*

*“They go to the supermarkets, buy a bag of sauerkraut and don’t have to do anything more... it’s convenient, today the young people don’t eat cabbage as much as before, the bigos (Polish stew of cabbage and meat)... young people want something else, kebab, pizza, gyros or something else, and not bigos. Also different eating habits” (MC 3 PL);*

*"These are long-time plantings, trees are getting sick, smaller and lower-quality crops and varieties are no longer so, they do not sell much" (MC 7 PL)*

Environmental  
factors, mainly  
draughts and  
ground frosts, hail,  
intensification of  
pest appearance,  
fluctuations in  
yield,

Draughts

*“Because the larger lack of water the more they fell down and did not grow”(MC 1 PL);*

*"Mostly drought. Definitely a drought. For three years here. Yes, here, for example, Kryszyn has drought, that really. And we have also these vegetables. We have parsley 5 ha ... It was irrigated and did not sell at all. This is a cost of 20,000 zł, this whole plantation, we have already put in it. In our climate, it is no longer possible to grow vegetables without irrigation. Three years ago, when there were rainfalls, during the year we managed to get two collections of cauliflower, and for two last years, because of this drought, only once” (MC 2 PL);*

*“ last year we had a terrible drought, but apples had grown very well. On old trees that are well rooted, apples grow up nicely. Situation looks different on young trees which are poorly rooted and apples do not grow on them well.... There has been similar droughts for previous 4 years. We have very good soils and until now trees have managed to survive and produce” (MC 3 PL);*

*"We live here, an area with the influence of continental climate, two or three years ago - there was such a drought, felt like it was forbidden to rain here, today it was slightly raining, but generally at the moment there is a drought, and this rainfall is a drop in the ocean of needs. The trees are still doing well, although the new varieties have root systems that are very shallow... I will say this: it was completely different in the orchards before, there were different trees" (MC 5 PL)*

Downpours, frosts,  
hail,

*"Last year, there were frosts and a lot was frozen" (MC 3 PL);*

*"The main risk is weather, atmospheric conditions: frosts, hail, drought"(MC 7 PL);*

*floods, plant soaking, due to the fact that I have a lower field, which has a tendency to soak up ... there is no solution for the nature. We are, so to speak, depending on atmospheric conditions, we can counteract, but to some extent some things are beyond our reach, such as storm, hail"(MC 9 PL)*

Increase in the  
occurrence of  
diseases and pests

*"And the second issue was that in 2005 there were only a small amount of these pests on vegetables, and now you have to constantly spray, spray, spray against insects .... Everything - and fungal diseases and pests. You know how once the husband sprayed "Dursban", immediately behind him this aphid died. And now my husband is coming ... The butterfly flies to the sprayer lance and plays with us" (MC 2 PL);*

*"The occurrence of diseases and pests and the lack of effective pesticides. There was a pest, let's say - I do not know which to mention – fruit fly, used an alarm or a trap? Once you used some recommended measure and there was no problem. Now one plant protection substance is allowed, numerous applications, not understanding what exactly the effect is, but that is my point of view" (MC 5 PL);*

*"There used to be such a means that one of the remedies fought off most insects, and today you have to repeatedly use such treatments. Aphid is immunizing for their use. We are spraying from*

*time to time and I do not know if they are not as effective as they used to be, or if simply new ones come. This is more and more burdensome and expensive "(MC 5 PL)*

Fluctuations in yield *"If you don't observe it you have fluctuations of yield, If you do not do thinning of fruits, if you don't thin-out their numbers than you have too much fruits and they are small and impossible to sell you won't make it" (MC 1 PL);*

*We expect a huge supply of apples. Forecasts predict that this year in Poland the harvest will be around 5 million tons, before that we had maximally 3,5 million tons (in average). Last year, there were frosts and a lot was frozen (MC 3PL)*

Soil conditions *"The soil (rendzina) is very difficult for cultivating - it's a cursed soil - not all vegetables, fruit trees and berry plantations can be cultivated. Weather anomalies (droughts) are also making things difficult. „due to soil alkalinity it is impossible to cultivate some plants, you would need to acidify the soil. Only fruit trees that can be cultivated are plums" (MC 6 PL)*

Political and institutional conditions	System of land market.	<i>„Just looking at the Agency and the line in which you have to wait you can see that there are ladies, who have no idea where their field is, but they still apply, but why?" (MC 1 PL);</i>
	Direct payments slowed down the turnover of land, payments don't always reach the farmers cultivating the land	<i>" they prefer small farms. Earlier, the aim was to make farms bigger and now we have opposite. Small farms are preferred, up to 10 ha. I understand that policy change but why in this way?" (MC 3 PL);</i>



System of employing seasonal workers	<i>And now there are supposed to be permits for registration of workers, for small farms it will be a burden. A lot of paper work. Someone comes here, someone doesn't, but you have to fill in the papers. Or someone comes, works one or two days and leaves. We had that last year... It should be different, there's a worker, I take a notebook and write down that he came today, I take his information and write it down, he signs it and that's everything. The rest can be settled later. When you have the information when they work and when they don't. That's how it should be... Nobody can force him to work, he can work for a day and he's gone, but you still have a lot of work and bureaucracy. And strawberries, when it's the season, you need people" (MC 4 PL);</i>
system for receiving funds	<p><i>"Bureaucratic system of application for funds other than then direct payments from ARMiR for small farms, they tried to get funding for diversification of business. For the non-agricultural activity. Car repair shop. We gave that up. Prepare, apply. They just say it is nice and easy" (MC 4 PL);</i></p> <p><i>"Too bureaucratic system for receiving funds for small farms from other sources than The Agency for Restructuring and Modernisation of Agriculture (ARMiR). Our farm is receiving funds from the "Restructure of Small Farms" fund, however it was not possible to adjust the purchase of machines to the needs of the farm. As a results we were forced to purchase bigger tractor and trailer than needed" (MC 6 PL);</i></p> <p><i>"I applied twice for a young farmer, I was rejected the first time, I did not get to this list. And in the second year I received, but there is a lot of paperwork, applications, corrections .... A lot of formal things, driving to Lublin, here you have to do it, one missing paper, you have to come back. Well, in this respect, everything is not so clearly explained, what should be exactly and how it should look. It's like if I had to do it myself, I would never do it. I did it with a lady from the agricultural advisory center, who helped me a lot"(MC 8 PL)</i></p>
Sanitary controls	<i>"I will add excessive controls and requirements from us, these are different attestations, some different certificates. This bureaucracy is too hard for me" (MC 2 PL);</i>

*"The need to meet requirements of buyers and obtaining further quality certificates (Global GAP, certyfikat TESCO) "A lot of paperwork – mainly paperwork. It is almost paranoia what you have to do" (MC 3 PL);*

Embargo for export to Russia

*"There were times when the business was alive... the carrots and onions went to the East. If today this market would return, it would be a totally different situation" (MC 5 PL);*

*"The worst thing is with the embargo on Russia. If not for the embargo on Russia, there would be no problem with sales, and so this year we have a big problem with sales" (MC 7 PL);*

Ineffective intervention policy on the fruit and vegetable market

*"The implemented system of auctions for supply of fruits to public facilities (public procurement for hospitals, army, penitentiary facilities), mainly the price decides, and not the quality of supplied products, often they come from imports" (MC 1 PL);*

*"Intervention should look different, not for industry, industrial apples. Only this good fruit should be supported, this dessert, to do it too, and not as at this moment, when is support 25 gr / kg for the industry, and this good apple people just throw into the forest. For example, I took it to the forest because I had nothing to do with it"(MC 8 PL)*

Withdrawal of effective plant protection products

*"The means are not working at all. I do not know what's going on, that these companies purposely... And if there are any good means, which work, they are withdrawn in a moment" (MC 2 PL);*

*"Now one plant protection substance is allowed, numerous applications, not understanding what exactly the effect is, but that is my point of view" (MC 5 PL);*

Development activities

Increasing the area of farms, most of the farms tried to expand their area

*In the years 1969-2018 the area of the farm increased from 3.5 to 24.0 ha, orchards with fruit trees grew to 10.0 ha, storehouses were built for 130 tons of fruit "(MC 1 PL);*

*"I took over the land, I took a young farmer, I bought 20 ha, and now around 3 ha"(MC 2 PL);*

but it depended on local conditions	<p><i>"We in 1987-2017 enlarged the area of own land from 5 ha to 22 ha, all of the land was planted with fruit trees... leased 10 ha of land to produce vegetables. We would prefer to buy the land instead of leasing, but it is very hard to find land for sale nearby the farm" (MC 3 PL);</i></p> <p><i>In 2003, it was 5 hectares .... and later I started to buy or lease land. This is mainly chosen for reasons of modernization. Because you have to increase the area ... Now I have a lease of about 14 ha and my own is already 26 ha"(MC 7 PL);</i></p> <p><i>Enlargement of the farm area "At least up to 5 ha ... land is available, it is only an economic matter, I think that everything is available for purchase"(MC 9 PL);</i></p>
Investment activities using funds under the Common Agricultural Policy	<p><i>"We took over the farm and using EU subsidies - among others from the young farmer program - we started to develop the farm ... We bought the tractor, we used 6 EU Funds. So that we benefitted a lot, really"(MC 2 PL);</i></p> <p><i>"Using founding from The Agency for Restructuring and Modernisation of Agriculture (ARMA) a storage base for vegetables was built. It was equipped with all necessary machines and devices for receiving, storing, washing, sorting, packing, confectioning and loading vegetables" (MC 2 PL);</i></p> <p><i>"From modernization I took a young farmer in 2007, it was then 50 thousand PLN, and in 2015 I took a tractor and sprayer, and in 2017, a trailer and plow" (MC 7 PL);</i></p>
Modernization of production technology through innovation	<p><i>"We have to invest all the time. To some it appears that you plant an orchard and just wait to collect apples, right? Unfortunately, today the orchard on dwarfing rootstocks can live 16-17 years, exceptionally up to 20 years, you need to change and adapt – invest all the time.Due to increase of quality requirements we tried to keep as many apples as possible according to the „ULO" standard (Ultra Low Oxygen)" (MC 3 PL);</i></p>

*"Maybe some innovation, for example new harvest technologies, in this direction I pay attention, because human labour is more and more expensive, and you can replace some of the work with machines" (MC 8 PL);*

*"I grow white clover in an inter rows, as an additional source of nitrogen. Not only because it pulls phosphorus out of deeper layers. Not only this is important, but also the water aspect. It has a very positive effect on maintaining moisture in raspberries. Another important thing about this clover is attracting pollinators" (MC 9 PL)*

Creation of producer groups.

In order to improve the competitive position in fruits and vegetables' market, owners, together with neighbours (who also produce fruits, vegetables) decided to establish the producer groups.

*"We bought shares of "Kalgrup" group of fruit and vegetable producers for 35 thousand PLN, with the thought that we will provide vegetables there .... they have huge cold stores and every day you can pick cauliflower, if other collection points do not take it, I will always take it to them" (MC 2 PL);*

*"Nether of us could produce so much without our production group. Not on such scale. The group gave us such possibilities. The production group like any other business is subject to the laws of the market. At the beginning everything was great, now – not so much, but there are still possibilities. In the market of fresh vegetables the competition got bigger, supply has increased and transportation possibilities are higher" (MC 3 PL);*

*"Here we have an association in Polubicze Sad-Pol, we have warehouses for about several thousand tons, there are 50 members, and maybe more, not only from Polubicz but other places, Wohyń .... Once these apples went to Belarus and Russia, we prepared everything at home, it was a lot of work, we did it all winter. Everything was done by hand. Now we take it to the Association, there are sorters, there are employees who do it. It's all going very smoothly there. Our .... The association undertakes various actions for export, we are trying to sell apples to Jordan, Spain, but this is only a small part. In the Association this year there are more than 13,000 t apples"(MC 7 PL);*

Changes in the production structure due to large fluctuations in profitability between individual products	<p><i>"At the moment I am making seedlings of chaenomeles japonica for the consumers from Biłgoraj, for Ambra. They buy it for alcohol. I will remove a piece of orchard and will plant that chaenomeles japonica there, and we'll see, maybe we'll harvest something after three years?" (MC 1 PL);</i></p> <p><i>"Certainly higher profitability of vegetables than cereals that we produced earlier ... There was a lot of vegetables, peppers, leek, cabbage ... 15 ha of cauliflower every year. Now we are reducing ... For financial reasons ... For reasons of profitability ... it has dropped to a minimum. There is no income" (MC 2 PL);</i></p> <p><i>"We resigned from heated production over 15 year ago and switched to the cold production of vegetable on the open field. We analyse the market, in what the customer is interested and whether it is possible to sell our products in retail. The quantity of our production allow as to sell only in retail. For the wholesale our production is too small and cost of such sales are much higher" (MC 6 PL)</i></p>
Diversification	<p><i>"First it was a fruit collection centre. And making money on fruit collection centre, only later it was trade of shoes, TV-sets, washing machines... whatever we could sell" (MC 4 PL);</i></p> <p><i>"We always looked for something that could be sold. We sold clothes, some used tires from Germany, different things" (MC 4 PL)</i></p>

### 8.2.8 Small-scale mixed family farms in North-East Romania

Axial codes	Description	Sub-codes
Profitability increase is the main reason why major changes have been generated on the farm	Farm size increase, introduction of intensive crops, as well as the commercial function amplification are the main targets for profit increase. Focus is laid on the economic profit and indirectly on the rational use of working time, on the diminution of physical effort.	1. Farm size increase for a profitable farm. 2. Introduction and development of intensive crops to increase farm profitability. 3. Commercial function development through access to new markets and supply diversification.
The successor's presence on the farm is decisive for its modernization	The successor's presence on the farm determines a high modernization rate and acceptance of innovative ideas. Successor's presence implies options and preferences for formalized social networks and contacts (consultancy, LAG); materialized into a more nuanced	1. The knowledge and information process are strongly influenced by successor's presence. 2. The social-associative behaviors in the farming activity and the rural organizational activities become a characteristic of farms where the successor is present <sup>12</sup> .

<sup>12</sup> Most old Romanian farmers, especially those which until 1990 (during the communist times) were in the active working period of their lives, are very reluctant to any type of association. The bad memories of the soviet-type "cooperatives" (which were present in the Romanian agriculture in 1949-1989) persist, hence their reluctance. If the successor had a European farming experience (worked abroad, in a farm in a Western EU Member State), he/she had the opportunity to see the advantages of farmers' associations, and the way these associations are organized and are operating to the benefit of their members. When the successor returned home, he/she is willing to apply this experience in his/her family's farm, and is open to the idea of association, and willing to be part of such an association.



Axial codes	Description	Sub-codes
	decision-making process; enhancing the knowledge and information process through multiplying sources.	3. The decision-making on the farm is more nuanced by consulting the successor; on the one hand, the decision for the farm is separated from the decision for the household, and on the other hand, the decision for the farm is also taken according to the successor's options (sometimes).
The social insertion of family farm <sup>13</sup> is a dual process, based on traditional and modern behaviors	The family farm – characterized as social universe, mainly traditional – remained, in most cases, a traditional entity that valorizes the neighborhood relations. The division of roles on the household and their prolongation into the farm is traditional; the family of origin remains the reference point, in terms of values and financial support; the domestic facilities are also used on the farm <sup>14</sup> . The social modernization process <sup>15</sup>	<p>1.The decision making on the farm is a continuation of the decision-making process on the household, yet on the other hand it starts to get restructured; the successor tries to make decision-making processes evolve, to rely also on new information and opportunities.</p> <p>2.The financial autarchy is supported by the family of origin, as well as by friends, leaders in local businesses.</p>

<sup>13</sup> The social insertion of the farm refers to how the farm manages to adapt and integrate into the microeconomic system of the local community. It is a process in which traditional behaviors and values are combined with modern ones.

<sup>14</sup> One should keep in mind that the Romanian case-study is about small mixed farms. In their vast majority, there is no separation between the household and the farm. In the farming activity are used facilities (household annexes, such as barns, various storage facilities) that have a multiple status, for supporting both the rural household domestic activities and the productive activities of the farm. And in general, all the members of the family which are living in the household are working on the farm, either full-time or part-time (unpaid family labour).

<sup>15</sup> Social modernization consists in the gradual uptake of modern values (e.g. associative behaviour, or flexibility in adopting new technologies and innovations), and their insertion into the specific value system of rural households.

### D3.2 Report on farm demographics

Axial codes	Description	Sub-codes
	starts from the gradual change of roles inside the family up to the adoption and promotion of inter-community interests, involvement in the community life.	<p>3.The neighborhood relations maintains the family in the rural traditional structures.</p> <p>4. The productive facilities are mostly those of the household plus other old productive facilities<sup>16</sup>.</p> <p>5. The machinery and equipment depend on the nature of commercial function.</p> <p>6. The associative interests<sup>17</sup> are determined by the farm modernization need.</p> <p>7. Farm growth/modernization takes place in terms of development projects<sup>18</sup></p>

<sup>16</sup> All rural households have some domestic production and storage facilities (such as stables for livestock and barns for storing the crop production and animal feed), which were built at the same time as the family house. So, part of the farming infrastructure may be outdated. When modernization / development processes occur, these facilities are either refurbished, or new ones are built.

<sup>17</sup> The interest in association is determined by the need for modernization: joining an association is determined by the desire to participate in an associative form that can support / facilitate access to information, advice, fair negotiation with sales chains, timely knowledge of development projects opportunities, or even to the joint investment in common farming machinery and equipment.

<sup>18</sup> Such as building new modern stables (able to meet the requirements for hygiene and for animal welfare – mini-case 5) or development plans for crops growing (mini-case 7). The projects are funded through the NRDP (National Rural Development Programme) (CAP second pillar).

Axial codes	Description	Sub-codes
The occupational trajectories of rural household members are decisive in establishing the economic orientations of the farm	The occupational matrix and dynamics of rural household is the foundation of the occupational structures of the farm. The multiple occupational statuses, their overlapping in certain cases, generate economic and social attitudes/behaviors/options specific to the farm.	<p>1. The respondents' various occupational trajectories, which resulted in different social experiences, determine the economic orientation of the farm<sup>19</sup>.</p> <p>2.Overlapping occupational statuses generate structures for the use of working time and reconfigure the role of rural household members<sup>20</sup>.</p> <p>3.The social opening of the farm and the appetite for novelty are induced by multiple occupational trajectories</p>

<sup>19</sup> Some respondents had multiple occupational trajectories (mini-cases 2, 4, 7). [Ex: respondent 1 of mini-case 2: he lived and worked in the farm as a child and teenager; during his adult life he lived in a town and worked there in industry (in a factory); when he retired and became a pensioner he returned in his old house located in the village where he was born, and started farming again. Respondent 1 of mini-case 4 had off-farm jobs during the communist times; since 1988 he returned to farming. Respondent 1 of mini-case 7 was a military, he worked in the army and started farming when he retired and became a pensioner.] The various occupational trajectories meant social and professional experiences, from which the respondents saw, learned and accumulated new social and managerial skills and behaviours (relations with managerial or military commanding structures, with co-workers, with subordinates; organizational skills; skills concerning information retrieval and updating; etc.). They are using all that accumulated knowledge and experience and are trying to use / implement it in their farming activity. The same applies for the successors also: if the successor temporarily worked outside the agricultural sector (or abroad, having either off-farm or on-farm jobs) those experiences may provide him/her with important knowledge and innovation capacity.

<sup>20</sup> The diversified occupational history of ascendants and descendants (successors) results in a productive behaviour different from that of respondents who held only a farmer's status (lived and worked all their life in agriculture). The overlapping of several occupational statuses held during the active life determines another type of rationality in the use of working time and helps redefining. the role of each member of the family in order to make their work more efficient.

Axial codes	Description	Sub-codes
The inter-generational transfer of farm is a process at the limit between tradition and modernity	Due to the occupational and migration histories, the rural cultural patterns have changed. Farm transfer and land transfer is delimited by two processes: a traditional process (how the landed property was formed, traditional values, work, land); a modern process (migration, bearer of experience acquired in other cultures, values related to profitability, development based on projects, organization of sales, acceptance of innovation).	<ol style="list-style-type: none"> <li>1. Changing the value model, starting from the value of land (from descendants to ascendants)<sup>21</sup></li> <li>2. Household head's expectation that the successor internalizes / submits to the farm's current objectives</li> <li>3. Successor's identification is a process either delayed or only partially accomplished.</li> </ol>
Migration routes are a determinant factor in farm modernization	Migration is one of the important factors of farm modernization. The actors involved (household members, dayworkers hired on the farm) which worked	<ol style="list-style-type: none"> <li>1. Depending on the social networks of migrants, the sales networks may diversify, and new inputs are used, in order to increase profitability.</li> </ol>

<sup>21</sup> For the ascendants (parents, grandparents), the value of the land is perceived in the traditional sense - the social aspect is predominant (it is defining for the identity and social status of the family), together with the sentimental aspect (it is the asset inherited from generation to generation, and it is not for sale for any reason, even if it is economically unprofitable). For the descendants (successors) – mostly young ones, the value of land is mainly economic: it is a mean to work with, to develop a profitable business, to reach prosperity.

Axial codes	Description	Sub-codes
	abroad (in other Western EU Member States) bring special farming experiences, new social networks (used in the procurement of inputs, sale of farm products, in obtaining knowledge and information) that they do not hesitate to implement on their farms.	2. Knowledge and information from those who are still abroad are sources for those who got out of the migration flows (and returned home).

## 8.2.9 Extensive family livestock farms in Sierra de Guadarrama, Spain

Axial Codes	Open Codes
<p><i>The family farm structure and the inheritance impacts on farm demographic, because they are the source of knowledge, awareness of the difficulties and animal welfare, access to land and support of the future generations:</i></p> <p>Family represents the first dimension of farm in which farmers find opinions, influence, knowledge, support and opposition; it is not only about decision-making, but it regards also all the awareness and knowledge of livestock and the access to resources and capacities to enter the sector. First of all, the entry in agriculture is prevented by some barriers, mainly the land access. Family provides more easily the access to the land, therefore it represents a favored (and almost the only) channel to enter the sector. By favoring land access and the overcome of other barriers, families not only guarantee the entry decision, but they determine farm changes since a new family member who enter the sector does not launch a new farm, but improves and makes bigger the existing one.</p> <p><i>“It is very complicated that someone who has never had cattle and who does not have it, here in these zones is very complicated that starts to living of it. Because the first things that you need are estates and it is all occupied.” (Land access, Quote 4, Transcription G21-22).</i></p> <p>Then, families make easier to carry on farm activities by dedicating time and support to the farm. This implies also no labor costs and reasons to entry or to remain in the sector. The farmer who is about to quit the sector, decide to remain to help his/her successor.</p> <p>Knowledge of the sector and awareness about sector’s difficulties is crucial for being a farmer. Knowledge and awareness, as well as interest in farming, are key factors in entry/no exit decisions. Families are the only</p>	<p>Family farms help new entrants to overcome the entry barriers, mainly by the land inheritance.</p> <p>Family farms support the new entrance by dedicating time with no labor costs.</p> <p>Living farming from child generates knowledge and</p>



<p>entities which provide such components by growing up their child. Living farming from child influence entry/non-entry flows.</p> <p><i>“Not, I think that it has to be people who already have been in contact a bit... That exists... It has grown up in some village, in something that...” (Awareness about sector, Quote 1, Transcription G18).</i></p> <p>Besides, families influence the labor decisions by suggesting to be farmer or to get other works, it depends on family’s thinking about farming weaknesses and difficulties: this implies an impact on entry/no entry flows.</p> <p>Finally, family structure continuity is determined by the presence of a successor. If any family member wants to carry on the activity, farms cannot continue through new future generations and current farmers do not have reasons to invest in the farm, improve or make changes to their activity. This surely impacts on no entry flow as much as on no-changes and no-investments behavior and management.</p> <p><i>“The people who carry on [sheep farming] do that because they like them [sheep]. Even if they have a little gain, they like them because they are animals that you call and they come...” (Interest and preference in farming, Quote 2, Transcription G3-G4)</i></p> <p><i>“It happened that my father passed, and I found myself with his ownership.....I said “I have to carry on this”, and I did. And I was with my daughters, with the bar, with the farm, and all things.” (Inheritance and succession support, Quote 1, Transcription G16)</i></p>	<p>awareness about the sector and its weaknesses.</p> <p>Family farms affect the labor decision making.</p> <p>Family farms (mainly continuity and size) depend much on having a successor.</p> <p>The role of women is crucial for the decision making and the stability and welfare of the family.</p>
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***The confidence in the future and the sector attachments influence farm demographics because they are the main drivers of the farmers' investments and borrowing decision making.***

Confidence and feeling cover a personal essential dimension to carry out new investments and strategies. It is one of the main factors that explain the evolution of the farm demographics in the terms of the farms size and farms management.

Confidence, trust and feelings enhance investments and borrowing decisions because farmers believe that investments will turn in more profitability and better labor conditions. The lack of trust leads to stagnation. There is no confidence on getting the investment back via greater profitability or good opportunity for selling the farm. In this sense, the lack of confidence affects the farmers' exit decisions because they prefer just remaining in the sector and not losing the investments made (opportunity costs). The farmer prefer not asking for new loans.

*"Because it is to be... You have to mortgage yourself for other fifteen or twenty years" (Non-invest strategy, Quote 2, Transcription G7-8).*

*"And with the incorporation we buy little land and buy animals; and with the modernization we got the ship, we buy a drill, then fences and electrical shepherd and all these things" (Physical investments, Quote 1, Transcription G3-4).*

The sector attachments also impact on the new technologies investment decision making and the farm management, more specifically animal handling. The decision on increasing the prolificacy and fertility to improve the farm profitability is clearly linked to the animal welfare perception of the farmer. These investments lead to higher and intensifying farms.

Farmers do not trust in the future of the sector.

Farmers are not willing to invest. They prefer to remain in the same situation.

Farmers prefer not to ask for new loans.

Farmers invest on assets to increase the size and profitability of the farm

<p><i>"It's that we are seeing that every year it's going worse, we are returning back, so... it comes a moment in which you are discouraged. For this many people leave the sector. It is normal. People is aging and does not get a successor." (General Lack of Trust, Quote 8, Transcription G7-G8)</i></p>	<p>Farmers invest in new technologies to increase the prolificacy and fertility of the herd</p>
<p><b><i>The weaknesses of the extensive farming influence the number of new entrants and the exit of current farmers.</i></b></p> <p>The weaknesses of the sector influence the overall dynamics and demography. The most relevant factor that explains the farm demographics, in terms of number of existing farmers, is the intensiveness of labor. Taking care of sheep requires a great commitment and dedication, mostly in terms of time, greater than the care of other animals do. This implies a poor quality of life in livestock sector. Few people can accept this extra effort that involves the personal and familiar spheres. The required intensive labour explains mainly the non-entry decisions.</p> <p><i>"Because it is that you do not have days off for anything, you cannot move, I did not have time to go to buy the garment of the godmother..." (Intensive labor, Quote 2, Transcription G16).</i></p> <p>The profitability of the sector is low. It is hard to get a good income from this livestock, therefore the sector is not attractive to external people, and current farmers plan to move in different sector. Thus such problem causes no-entry and exit flows.</p> <p><i>"They do not do it because it is not profitable, because they do not find the point" (Low profitability, Quote 1, Transcription G9).</i></p> <p>Indeed, the intense dedication does not allow to complement the low profitability of this specialization with off-farm salaries with forces farmers to move to exit the sector.</p>	<p>Poor quality of life due to the intensive labor requirements.</p> <p>Low profitability sector, where prices keep low and costs increase.</p> <p>Uninviting life style due to rural abandonment and the lack of social services</p>

<p>At last, rural abandonment and the lack of services in rural areas make uninviting to live and work in such areas. Indeed, it is not easy to find other labor opportunities because of the rural abandonment and lack of alternative labor opportunities. This fact explains the no-entry or exit decisions.</p> <p><i>“Yes you work so much, we are working every days in the year, I have never went for vacations. I have never been in holidays, always with the sheep every days in winter and summer.” (Intensive Labour, Quote 1, Transcription G3-G4)</i></p>	
<p><b><i>The ability of the farmer to deal with challenges influence the farm demographics by allowing them to remain and grow in the sector.</i></b></p> <p>The market represents the most important way to develop and change. Farming systems lead their production and activities to the market, which is a relevant determinant of farm demography. Farmers make choices and actions in order to respond to market challenges, therefore the farmers adaptation to the market changes is a determinant of farm demography. Specifically, the reduction of sheep meat consumption in Spain, as well as the low and steady prices of meat affects the profitability of farms. This fact explains the exit flows but it is clearly one of the most determinant factors of farm demography. Greater capacity of the farmers to adapt consumer’s requirements, by investing in quality, searching market niches and new commercialization channels (i.e. Protected Geographical Indication).</p> <p><i>“But today, there is no consumption” (Reduction in consumption, Quote 1, Transcription G9). “Ese es el problema, ese es el problema. Entonces no remontan los precios, estamos con unos precios medios igual que hace veinticinco años” (This is the problem, this is the problem. The prices do not increase, we are with a few average prices like twenty-five years ago) (Steady and low price, Quote 1-2, transcription G3-4).</i></p> <p>Farmers face this trend through associations and cooperatives which allow them to get better prices by increasing the bargain power of all farmers together. They try to get better prices and new markets by mean</p>	<p>Reducing national meat consumption</p> <p>Steady and low prices</p> <p>Increasing costs of the inputs.</p> <p>Increasing the bargaining power by being a member of professional association and or cooperatives.</p>

<p>of Protected Geographical Identification in order to improve the quality and justify a higher added value. This strategies impact on changes on farm management changes.</p> <p><i>“We did a cooperative... Because this livestock is all in the Carne de Sierra de Guadarrama” (Associations and Cooperatives, Quote 1, transcription G17).</i></p>	<p>Adopting consumer oriented strategies by using new commercialization channels.</p>
<p><b><i>Policies influence farms demographics by aiding, supporting or limiting the decision-making.</i></b></p> <p>Institutions play a significant role in farming life since they deliver relative policies. Policies imply commitments and a specific influence on farmers’ income that determine decision-making and affect the possibilities of the sector. CAP aids, and in particular CAP payments, strongly support the farmers’ income. Moreover farmers are dependent on CAP aids which appear as one of the main goals. As a consequence these aids impact significantly on no-exit/remain decisions and in a no-change/no-investment behavior of farmers.</p> <p><i>“You do not use all the time and do not use all the necessary energies in improving your exploitation(development) and in seeing your future, but simply your future is dependent on if in two thousand twenty this goes to more or goes to less...” (Dependence on CAP aids, Quote 2, Transcription G17).</i></p> <p>Furthermore, CAP aids and support require commitments that together with bureaucracy constrain the flexibility of decision-making and action-taking and take too much time to farmers. In this way CAP requirements and bureaucracy limit the farmer activities and possibilities and make harder to make changes in farms.</p> <p><i>“About these controls that we spend many filters with papers, that we become crazy here for everything the papers, papers and papers, but then we are not effective in the management, not..” (Obstructing administration, Quote 1, Transcription G21-22).</i></p>	<p>The CAP provides the farmers with funds to be able to continue in the sector.</p> <p>The CAP requirements and bureaucracy limit the farmers’ decision making, take farmers’ time and generate distrust in the Institutions.</p>

<p>Policies are diverse between farms therefore there are different implications on farm demography. In particular diverse aids for supporting different sectors imply a net tendency to exit the sector and entry a new favored one. Different supports by specializations may force the movement from lower to higher supported specializations, in a word exit flows from the sector. However, in general, it causes incorrect competition among sectors which make difficult enter the sector. These policy distortions influence no entry and exit flows.</p> <p><i>“So I owned 200 sheep, then I got 400 sheep, but the CAP payment remained for 200 sheep. And many people who stopped farming sheep, they are still gaining subsidies.” (CAP distortions, Quote 2, Transcription G9)</i></p>	<p>Unequal payments among farmers and specializations are a source of a greater competition.</p>
<p><b><i>The lack of training schemes and labor markets functioning affect the farm demographics by limiting the skilled and motivated labor force.</i></b></p> <p>Education, experience and opportunities determine the dynamic of labor in the system, even the entry/exit flows. Farmers remain trapped in the sector due to the lack of other opportunities. The lack of alternative labor opportunities influences on farm demographics because it may force farmers to remain in the sector even if they want to quit. Due to these farmers do not want to invest or growth, this behavior also influences demographics dynamics. In addition, the public pensions perceived by farmers from the prior labor activity are very low, pushing the farmers to remain in the sector in order to get complementary revenues.</p> <p><i>“It is what we have, is of what we live, and I don’t know how to do other things..” (Lack in other options, Quote 1, Transcription 11-12).</i></p> <p>Also the lack in people with experience affects the possibilities of the sector to develop, grow and change. The absence of worker with the right knowledge and skills makes hard for farmers to increase or improve livestock and to make changes in farm management.</p>	<p>Farmers feel trapped in the sector because of the high labor costs and lack of labor opportunities offered by labor markets.</p> <p>There are no skilled people to hire because there is no way to transfer the knowledge.</p>



### D3.2 Report on farm demographics

<p>Furthermore, women cover the role of supporting the male farmers. Due it is too expensive cover the labor costs of two people in the same family, usually the women are not hired or regarded as owners. So it is harder for woman to enter the sector.</p> <p>Finally, people with higher education do not want to enter/remain the sector, but prefer to get other kinds of jobs. This condition impacts on no-entry decision.</p> <p><i>“Not, not, not. She has never planned, absolutely. At all, at all. What she wanted was to study, to get an engineering degree and she has not wanted...”.</i></p> <p><i>“If knowledge and uses are lacking is because now many different things appeared while before people spent all their life in livestock and farming” (Loss of Knowledge, Quote 1, Transcript G11-G12)</i></p>	<p>The role of the female farmers is limited to give support the male farmers.</p> <p>People with high education prefer work in other sector rather than agricultural sector</p>
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## 8.2.10 High-value egg and broiler production in Southern Sweden

Selective codes (themes)	Axial codes	Open codes
<b>Farm/family specific factors affecting demographics</b>	<b>Factors influencing farm entry and exit</b> <i>Factors that affect entrance or exit from farm work, such as previous experience with animals, childhood environment, personal interest, unforeseen opportunities</i>	Animal/bird interest important component Raised on farm Lack of interest affecting choice of entering/exiting Inheritance/transfer enables entrance Active decision on retirement or dismantling Unforeseen coincidences enable entrance/change
	<b>Family relations crucial for decisions affecting demographics</b> <i>Ways in which family relations define possibilities and preferences on the farm. Support from family members enables unpaid long and uneven working hours necessary for the farm success; the degree of mutual understanding and communication between family members shapes who gets involved and how; farming family background facilitates entrance</i>	Farm purchase enabled by family relations Family support important to get enough time/energy Family relations crucial when choosing focus/size Interest of children important for parent's decisions on farm development Lack of time and rest as result of unpaid labour Private, farm and company finances, practices and material intermingled

	Informal leadership
	Joint decision-making
	External side-job
	Generational shift seen as natural
	Dominating older generation affects possibilities of new generation
<b>Animals important for decision-making</b>	Emotions concerning the animals important
<i>Feelings about animals and animal health can affect who works in what farming system and the direction of the production</i>	Animal health significant
<b>Infrastructure as a driver of demographic change</b>	Inadequate public services
<i>Infrastructure in terms of communication or transport affect the willingness to work within farming. Isolated locations of farms might decrease attractiveness among potential farm labour force</i>	Technical skills are required

<b>Factors influencing employed non-family labour on the farm</b>	<b>Labour</b>	Access to labour
	<i>Access to labour, competent labour and relations between employees and the family affect how and why farm demographics change</i>	Employee's experience of their relation to the family and other employees
		Opportunities and possibilities available to the employee
		Practicalities of recruiting
		Employees' freedom to define/shape their work
<b>External factors influencing the farm in terms of development and demographics</b>	<b>Wider networks affecting the farm</b>	Cooperation, information exchange and conflicts affecting possibilities on the farm
	<i>Personal relations to other producers, neighbours and sector actors shape what competence is needed ON the farm and farm location affects farm entry of next generation by providing more or less possibilities</i>	EU/Swedish market trends and competition affects the farm profitability and size
		Proximity to larger city
		Importance of neighbours
	<b>Industry relations crucial for farm success</b>	Pressure towards large-scale production
	<i>The wider off-farm relations to people in key roles shape the limits of how farmers can change demographics through size, succession or focus,</i>	Intensification

<i>and demographics shape the interest of other actors supporting the farm</i>	<p>Good relations to other actors in the industry facilitate production</p> <p>The industry controls the farmers</p> <p>Trade actors get the trade margins while farmers struggle to secure surplus</p>
<b>Authorities determine pre-conditions for farming</b>	<p>Relations to authorities important</p> <p>Obstructing bureaucracy</p> <p>Subsidies affect farming activities</p> <p>Conflicting regulations among authorities/regulating bodies</p> <p>Hindering building permits</p> <p>Though competition within the EU</p>
<b>External factors as obstructing</b>	<p>Inadequate level of education</p> <p>Financially dependent on other actors</p> <p>Heat-waves with negative consequences</p>
<i>Wider relations and factors outside of the farm that pose challenges to the farm's success and survival, eventually potentially affecting if</i>	

	<i>farmers choose to enter, remain in or exit farming</i>	Technical solutions positive but expensive Animal rights activists
<b>Coping strategies</b>	<b>Ways to adapt to circumstances</b>  <i>Coping strategies involving farm size, growth, diversification and technology affect the demographic structure on the farm</i>	Diversification  Importance of growing at an appropriate speed  Production aspects affected by demography  Farm size crucial for financial success  Adaptation crucial  Enabling technical developments
<b>Gender relations affecting farm and demographics</b>	<b>Gender relations</b>  <i>Ideas and perceptions of men and women's different capacities, interests and appropriate roles shape who engages in what tasks.</i>	The industry is a 'man's world' and challenging for women to be a part of  Women's 'eye for animals'  Wife's/mother's work on farm not accounted for  No encouragement to participate  Women's participation enabled by technology  Women responsible for soft values



Women not owners, but employees

Women's/men's typical roles in the industry

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## 8.2.11 Arable farms in East of England, UK

Axial Codes	Open Codes	Exemplary Quotes
<b>Brexit is likely to lead to structural change in farming systems</b>  Although there is much uncertainty around what a new post-Brexit agricultural policy will look like, it is anticipated that there will be structural change on UK farms. The loss of the single farm payment and a move towards public money for public goods is likely to result in more conservation farming, or a shift from food production to the provision of environmental services. Some farmers, particularly those already involved in conservation farming, welcome this, others are fearful that such a policy undermines farming's food production function.	<b>Access to markets influence specialisation</b>  <i>The trade deals that emerge as a result of Brexit may influence the type of crops grown or farm specialisation, depending on access to new or existing EU markets for these products.</i>	<i>"The EU is our biggest trading partner as farming, you know, we have about a million tonnes a year going to southern Europe of wheat and so that's, you know, it's a big home for us and we need, you know, there's 450 million people, we do need access to that market and it's not just for our sector, it's also for particularly the lamb sector, I think 80 per cent of lamb exports got to France, so it's incredibly important for the lamb sector" (MC1A)</i>
	<b>Future structural change after Brexit due to focus on public goods</b>  <i>The removal of the single farm payment and a new policy of public money for public goods is likely to result in farm structural change, including an increase in conservation farming or diversification activities.</i>	<i>"Probably the biggest risk is knowing what the future holds, with the leaving the European Union; how food-production based is the new UK agricultural policy going to be, how big a park keepers are we going to be turned in" (L06)</i>
	<b>Positive outlook after Brexit</b>	<i>"And whilst I didn't vote to leave the EU, dad did, I didn't, very similar to a lot of businesses. I think there's going to be a huge amount of opportunities, because I think a lot</i>

	<p><i>Recognition of a coming period of change, but positive that there will be new opportunities.</i></p>	<p><i>of things have been stifled by CAP, particularly turnover of land and people, and the introduction of ideas and techniques and methods” (MC2A)</i></p>
	<p><b><i>Uncertainties over Brexit lead to farmers being cautious about investment or risk taking</i></b></p> <p><i>The uncertainty of Brexit leads to more risk averse behaviours, such as holding off on new investments. Although some indicated they are buying machinery now while they still have the single farm payment.</i></p>	<p><i>“I have been quite a risk taker all my life right from making the decision to go into farming in the first place without any farming connections. I would say now I’ve just hit a milestone a few days ago and becoming a bit more risk averse moment. ... there’s too many variables at the moment. We’ve got Brexit looming up and we’re getting more and more regulated, it’s making it harder and harder” (MC5)</i></p>
<p><b>Environmental influences on farm structure and cropping decisions</b></p> <p>Changing weather and climate change is likely to lead to changes in farm specialisation and crops grown. In addition, the ability to access plant protection products to protect crops against pests and disease is important for most farmers, who rely on these chemicals to maximise the quantity and</p>	<p><b><i>Climate change as a driver of structural change</i></b></p> <p><i>Climate change is increasing the risk of extreme weather events (drought, flood) and could lead to a change in the type of crops grown.</i></p> <p><b><i>Pests and diseases influence crop or specialisation decisions</i></b></p>	<p><i>“It could change what we farm ... Now whether we’ll have access to other crops, you know, there’s quite a growth in the area of soya beans last year and, I mean, it would be brilliant if we could grow soya beans in the UK, whether we’d be growing corn maize or maize for the seed rather than dairy feed, I don’t know, I think it’s still a number of years away” (MC1A)</i></p> <p><i>“Oil seed rape grain, we’ve stopped now for three years, but I’m hoping to bring that back. ... Cabbage stem flea beetle, is a huge problem for growing oil seed rape. So,</i></p>

quality of their crops. However, farmers' environmental attitudes are also important determinants about the extent to which they are willing to adopt more environmentally sustainable farming practices.

*The risk of pests and diseases, and the ability to control them, influences decisions about what crops to grow, or decisions about whether to keep livestock.*

*with the loss of neonics, that, for many farms, they've stopped growing it completely" (L11)*

#### ***Use and availability of plant protection products***

*The regulation of plant protection products, and the public perception of those products, can influence crop choices. Current concerns are around a potential ban on glyphosate (e.g. implications for no till farming) and the current ban on neonicotinoids (e.g. impact on oilseed rape).*

*"If the evidence is put in front of us to say this really should not be used, then I, for one, wouldn't be willing to use that product, it's not something that we want to be doing, but I think sometimes that spurious evidence is used to get products, you know, withdrawn, when actually the evidence isn't there that they need to be" (MC1A)*

#### ***Farmer's environmental attitudes influence on-farm decisions***

*Farmers with an interest in the environment and conservation are more likely to adopt conservation farming practices as they fit with their ideology.*

*"So, it's been part of my working life, for all of my life, that conservation aspect. Both in terms of the build environment and the natural environment. And I've always tried to work my agricultural activities alongside that, because I think it's an important part of my thinking and always has been" (L13)*

**Farming decisions are influenced by financial pressure**

#### ***Change in cultivation methods help to reduce costs***

*"So we're zero-tillage, zero-insecticides, I'm actually not even going to use any aphicides this year either. So I'm*

A range of financial pressures influence the decisions that farmers make on the farm. Those with lower debt are likely to be more resilient and able to persist despite shocks, and can adapt to stresses. However, fluctuating markets, consumer demand for cheap food and an imperfect policy system greatly impact on farmer's ability to be sustainable.

*Farmers who have moved to reduced till practices, and no/reduced pesticides have seen cost savings on inputs and machinery. Although outputs are lower, the margins are not.*

*absolutely nothing that kills an animal, apart from molluscicides which I'm struggling to get round at the moment. We do a thoroughly reduced fungicide regime, so wheats only receive two rather than four, so we're on about half the price. So my view is low input, lower output, identical margin, and from all I can work out, my margins are identical to the people who put a lot more money in" (MC4)*

#### ***Dissatisfaction with grant schemes limits uptake***

*The complexity of grant schemes (the time it takes to fill in the forms) and a feeling that farmers are not trusted, deters some from applying.*

*"I was in the entry-level scheme for ten years. But then they brought out this mid-tier agreement and I went along to the local village where they had the meeting and it was just so much more complex and I think a lot of farmers were put off. I know I was. It was just too complex, and I thought actually, for the money they were offering... That's just not worth the aggro. Which is a shame. You know, I think if they'd have continued on with the similar ELS and just put a little bit more trust in farmers..." (MC6)*

#### ***Debt (or lack of debt) impacts sustainability of farming***

*Low or no debt provides a buffer for farms to enable them to persist despite shocks and*

*"We wouldn't go under because, as you say, we're not having to pay any rent, we're not having to pay any finance charges" (L04)*

*enables more sustainable farming. Farmers with high levels of debt are constantly focused on affording to pay off the debt.*

*“You have no choice but to somewhat curtail what you want to do with the rotation to enable you to make sure you still pay your mortgage ... I can’t farm absolutely properly ... all of this farm here, pretty much every field, is tired. ... You shouldn’t be doing constant cropping like we’re doing. It needs a rest ... That’s how you farm properly. Well, there’s no way in the world I can afford to do that” (MC4)*

#### ***Fluctuating exchange rates***

*Fluctuating exchange rates make it difficult to manage the cost of inputs and the price received for outputs. The weak pound since the Brexit vote has meant good grain prices, but high input prices.*

*“Certainly the most influential over the past two, three years has been exchange rates, without a shadow of a doubt, and that’s in our input side, so, you know, a weak pound is great for the output prices, but it increases our input prices, but obviously if you’re running a profitable business you’d hope that your outputs are more than your inputs” (MC1A)*

#### ***Food is too cheap so need to educate public about true cost of food production***

*Farmers are frustrated the price consumers pay for food does not reflect the true cost of production, hence the need for subsidies.*

*“And we need to get people to understand where their food comes from and why it's the price it is, and why sometimes we need to charge more because the cost of doing something changes. We're not being greedy” (L02)*

*“I think that my honest view is food is far too cheap, that nobody is paying the true environmental cost of food production” (MC1A)*



### ***Improving efficiency & reducing costs***

*The need to reduce costs and become more efficient influences decisions about the use of technology (e.g. precision farming), whether to contract out services or buy machinery or whether to reduce tilling practices.*

*“And I suppose another thing that we are using is technology. That is an area that we have increased our use of. We’re doing a lot of variable rate application. We do field mapping. We’re doing a lot more specific areas rather than it being a broad brush over everything. So that has been a huge god send to us, the GPS... For instance, when we’re doing cultivations, we map the field out, we do it in alternate bouts, which means that you don’t over-compact the headlands and it’s all automatically steered, it’s made life so much simpler and accurate. There’s no overlapping. That probably saves ten per cent of our time with not overlapping, and ten per cent of fuel” (L12)*

### ***Market prices influence crops grown***

*Choices about which crops to grow are influenced by the price achieved on the market.*

*“We started growing barley again a few years ago. I’m not going to grow it again ... It doesn’t make much money. It’s really variable and risky. Whereas you can plant spring wheat slightly later than spring barley and get a more consistent yield and I know what I’m doing with spring wheat” (MC4)*

### ***Tenure influences exposure to financial risk***

*Renting can expose farmers to financial risk, as they still need to pay rent even if profits*

*“So I’m very conscious about our exposure to fluctuating markets and costs, because before we were cushioned from it because we were contract farming it and we took a large lump of the profit, if it made a loss we weren’t so*

are low. Land ownership or contract farming is seen as less risky in terms of financial risk. affected. If I'm renting it, my exposure, and so I'm having to spend more time budgeting, cash flowing" (L02)

### ***The impact of policy on farm profitability***

*EU policy to address problems in one farming system in a particular geographical space can have perverse impacts on farming systems elsewhere.*

*"Of course, was it five years ago, three crop rule was introduced by the EU, which completely blows that one out of the water. So the economies of growing 200 hectares of oilseed rape in one block and then having 200 hectares of beans in another completely goes out of the window when you're doing any sort of contract farming because each contract farm has to have three different crops. So it's really made it incredibly difficult for us since that ruling was passed. So we've had to adapt to that as well. So I suppose we were fairly streamlined and we've become less streamlined because of that" (L12)*

**Increased technology in farming is increasing the requirement for high-skilled and well-paid labour but can improve efficiency**

As farming becomes more technological the demand for highly skilled labour is

### ***Changes in skills requirements of labour***

*With the increased use of technology for farming, there is an associated need for skilled labour with computer and technological skills. This is a challenge for existing older staff.*

*"That's the biggest change in the last few years is the chap who works for us is now 73, still works full time, but he's happy doing that, and he's having to learn computer screens and iPads and things. At the start, he didn't want to even know about it. He wants to turn a key, move a gearstick and it moves" (L02)*

increasing, together with a rise in labour costs. Technology can improve the efficiency of farms though. However, farm work is still perceived as an unattractive choice for young people and, together with the potential for reductions in labour from Europe, availability of labour is a big challenge.

### ***Farming is unattractive for workers due to long hours and low pay***

*There is a decrease in the number of young people who want to go into farming, due to the low pay and long hours, together with more attractive opportunities for employment elsewhere.*

*"I can completely see why people don't want to go into the industry. You know, it's not particularly well paid, it's ridiculously long hours, and we've got to make it more attractive for people to come into the business, basically, into the industry" (L17)*

### ***Increased costs of labour***

*Labour costs are increasing as the job becomes more skilled, and the responsibility of working with expensive machinery. However, farm businesses struggle to pay these increasing wages when their margins are low.*

*"Farm workers are already, I think, their salaries have increased a lot over the past five to 10 years and, you know, when you look at the value of the product that they're putting through the machines that they're using, that they're harvesting with the machines that they're driving then they deserve to be earning good money, you know, we just have to hope that our businesses are in a position that we can justify those salaries, you know, that's the big question really, it's not that they don't deserve them at all, but a lot of the time the pinch is on, because actually there isn't the money there to pay it and that's one of the difficulties" (MC1A)*

### ***Reduction in availability of foreign labour***

*Getting access to good labour is becoming increasingly difficult, and is anticipated to*

*"The other risk to my business I think longer term are good quality staff. Labour. Without any doubt. And also seasonal labour. Growing potatoes there's a big need for*

*become even harder after Brexit if less European workers are able to come to the UK.*

*seasonal labour looking ahead because we have a six week blitz where we need a lot of pairs of extra hands to sort the spuds as they come in, and EU or non EU there's a big risk that the staff are just not going to be there. So that's another serious risk to my business" (L14)*

### ***Technology improves efficiency***

*Investment in technology can help to improve efficiency. Older farmers may be more reluctant to adopt new technologies than younger farmers.*

*"And my father's generation was a bit more resistant to some of it, but I sat down and worked a business plan out, I sat down and worked out the costings of what machine, and if we spent more buying a piece of machinery but it saved us far more than you actually get, it would hurt upfront but over the five years or ten years we get that machine, we're saving ourselves a fortune. But it's that change of mindset from send someone out with a machine and running up and down the field, you're not writing a cheque out. If you use a chemical instead, you have to write a cheque out but the chemical may be cheaper than the operation you did. Or you buy a piece of machinery upfront, the cost is big, but actually the savings are bigger" (L02)*

### ***The challenge of replacing retiring farm workers***

*"I've got to start thinking about what will happen, which will be a major change for us, is when my employee comes to retirement. And I don't know whether he wants to*

*Older farm workers have often been working on the farm for most of their life, and are a trusted and integral part of the business. When they retire, it can be difficult to replace them with committed and skilled workers.*

*retire and I've got to discuss that with him, because it's coming up in four years' time" (L13)*

### **Family relationships important for smooth running of the farm**

Maintaining good relationships between family members is important for running the farm business. Family members are often involved in various aspects, whether it is agricultural or non-agricultural.

### ***Family involvement in decision-making***

*In family partnerships, decision-making is often shared between family members. On the positive side, this can bring different perspectives, from the experience of the older farmer to the new ideas of the new entrant. However, there can also be disagreements between family members about how the farm should be run and this needs to be managed.*

*"It's normally Mother is the one that's moaning about how much we're spending on fungicide and inputs, which is difficult from that point of view because she doesn't necessarily understand the full importance of keeping things clean, when she was brought up on farms when they didn't used to do anything; so with the modern dependence on fungicides and things it can be difficult to get that point across" (L06)*

### ***Incumbent farmer sharing decision making with new entrant (or not)***

*A good relationship between the incumbent and incoming farmer is crucial. It is important for the successor to begin taking*

*"Again, this is the sort of thing which I didn't want to see with my sons, is that you see so many dysfunctional families with the older generation hanging onto the very bitter end, and the younger generation desperate to make changes and do things" (L13)*

on decision-making responsibility early, to ensure a smooth transition.

### ***Roles of different family members***

*Family members may have different roles in the farm business. This may involve one managing the arable side, while another manages the livestock or diversification activities. Family labour on the farm is often important.*

*“The livery side of it really is the back bone, the riding school is quite interesting, because my wife and I have just got a young son, so that riding school business really is where my wife draws her main income from” (MC1A)*

### **Good relationships between family members helps to ensure smooth farm succession**

Planning for succession can be difficult to discuss. Good, supportive relationships between family members can help to ensure a smooth transition. During succession it can help if decision making responsibility is gradually transferred from the incumbent to the incoming farmer, although it will depend on family dynamics.

### ***Making succession plans makes transition easier but it can be difficult to discuss***

*Making succession plans is crucial for a smooth transition, but it can be difficult for the incumbent farmer to discuss due to a reluctance to let go and/or an unwillingness to acknowledge the need to plan for their retirement.*

*“I remember having conversations with dad about, how are we going to transition from you doing it to me doing it, or someone else doing it, how are we going to do this? And, dad really getting very frustrated, and not wanting to talk about it, and I said, but, we’ve got to talk about it, we cannot just ignore it, it will not go away. Then, you know, in one of those moments of, sort of, frustration, he said, oh, I’ll just give the whole lot to you, leave you to it, I’ll just bugger off. I said, well, that’s not really very helpful, because what you’re talking about here is a million pound business which you’re, effectively, just handing over to someone without any sort of succession planning, any support mechanisms in place” (L04)*



### ***Sharing ideas and decisions between generations***

*Sharing the decision-making between the incumbent and incoming farmer is important. It allows the incoming farmer to learn from the experience of the incumbent farmer, but also build up their confidence in making their own decisions. The incoming farmer may also bring in new ideas and a different perspective.*

*“He’s a partner with me on the farm and we discuss everything, and now after, I think it’s nearly three years he’s been back, I want him to make all the decisions”  
(MC1B)*

### ***Successor working elsewhere (or not) before coming back to farm***

*It is increasingly common for potential successors to have a career outside of farming before returning to the family farm. It may be that they are not initially interested in farming or the farm cannot support an income for them as well as the incumbent farmer or they are encouraged to experience life outside of farming first. In any case, they often are able to bring back useful skills and insights from other sectors*

*“I was probably interested in doing other things, I wanted to get away, to live in different places, to really stretch myself, and I didn’t see farming as, because I didn’t have much exposure to farming, I didn’t see it as an exciting place to be. But, also thirdly dad hasn’t given me a huge amount of advice in life, but one of them is, go and do something, even if you’re going to be, aged 19, going to come back to the family farm, go and work, even if it’s for a neighbouring farmer, go and do something else first”  
(MC2A)*

that they can apply to making the farm more resilient.

### ***The relationship between the retiring and new farmer is crucial***

*A good trusting relationship between the incumbent and incoming farmer is crucial for a smooth transition. This needs the incumbent farmer to support the new farmer and to give them decision-making responsibility. It also requires the incoming farmer to be respectful of the incumbent farmer and learn from their experience.*

*“And a lot of the success or failure, falls on the generation who are there already and allow you space to come in. The first time we met as a group, our little Returners Group, one of the guys at the first meeting said, I’m leaving. He said I’ve got to drop out of the group, ‘cause I’m not going to be a farmer anymore. I’ve been back two years, and I can’t handle it. Because he wasn’t allowed a space to operate. Whereas on our farm, dad straightaway, day one, I came back as a partner, rather than as an employee, which does happen a lot on farms, and I came back to sit at the table and make decisions, and I’m very passionate, enthusiastic, and love to learn, but dad has that amazing history and knowledge and kind of tempers things. So we talk every day, about everything, which has been really good and really useful” (MC2A)*

### ***Training to take over the farm begins at a young age on family farms***

*Farming often begins as a child when growing up on the farm, with the farmer*

*“Because the boys all took...as soon as they were old enough to drive a tractor they...I taught them all to milk. And so, they would milk on at the weekends” (MC1B)*

*teaching his/her children how to care for the livestock, or drive a tractor. They are often expected to provide family labour on the farm at weekends and during the school holidays.*

### Personal attachments and influences on farmer health and wellbeing

Farming is a way of life, with farmers living and working in the same location, together with their family. Attachments or identification with particular ways of farming can impede adaptation or transformation. The pressures and challenges of farming can lead to physical and mental health issues, which in turn can lead to further structural or demographic change on the farm.

### *Emotional attachments influence farm structure*

*Attachments to a certain specialisation can influence decisions to persist even when it is no longer financially viable and/or the work becomes so hard it impacts on farmer wellbeing.*

*“Definitely he was quite lost when the cows weren’t here anymore and I think it was a sadder day for him than it was for anybody else” (MC1A)*

### *Farmer wellbeing and mental health*

*Farming can be hard work and sometimes quite solitary. Together with the pressure of constantly dealing with a range of challenges and risks, this can have an impact on farmers’ mental health.*

*“I have suffered a bit in the past myself, being a little bit downhearted. I wouldn’t say depression, but I think sometimes because you’re working a lot on your own” (MC6)*

*“I need to remove some of my debt, take some of the pressure off, because I’ve never has been as unhealthy as what I am, you know, I’m carrying more weight than I ever have and that’s through stress and I just thought, I’ve got*

to be careful here, because there's no point in having it all, but not being around" (MC3)

### ***Health issues can influence change in farming practice***

*Health issues can lead to a change in farm specialisation in order to make it easier to manage, or can result in early retirement of the farmer and an unplanned succession.*

*"I'm going to give up my sheep. I've had my sheep since I was about eleven, and I started it, built up my flock. I do everything myself; I shear them myself, but now I'm really old, and look at how arthritic I am" (L07)*

### **The influence of trusted advisors can influence farm structural change**

Farmers rarely make decisions in a vacuum. A range of information sources and social networks is important in their decision-making. However, trust is an important component. Trusted advisors may be specific agronomists (although not always), family, farming friends and wider networks of farmers. Agricultural advisors can be useful, but the farmer must have confidence and trust in them. The

### ***Agronomists as a trusted adviser (or not)***

*The advice of agronomists is important and a useful sounding board for ideas about cultivation and crop protection.*

*"There on a day-to-day basis ... they are doing the best job they can for me to make the farm productive as possible, but after that I don't think there's, I mean...yeah, it's good sometimes...actually, sometimes it's just nice to have someone on the farm to talk to if you're having particular problems with the day-to-day running" (MC6)*

### ***Engagement with social media can influence farmer ideology***

*Social media is more often used by younger farmers, rather than the older generation. They are able to learn about new technology and how farmers around the*

*"It's absolutely brilliant and I've learnt so much about cover cropping round the world and why things work, why different crops work, what machinery works. And that is leading a lot of change in farmers' mind and how the machinery uses, because if someone around the world has found a different way of adapting the machine, and*

### D3.2 Report on farm demographics

information received from such sources may influence structural change on farms, such as specialisation, tenure, size of farm etc. However, some older farmers may be locked in to particular ways of operating which can reduce their resilience.

*world have used it. It can change views about approaches to farming and improve the resilience of the farm.*

*we may never get to have heard about it unless someone travelled over there. Instantly, so people are now adapting their own machine by that design" (L02)*

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#### ***Family is important for advice and learning about the business***

*Family is possibly the most important influencer on farmers. They are the closest, and often the most trusted, advisors of the main farm operator.*

*"I'd probably add my family into that, because my wife, my dad, my brother, I mean, that was one of the sadder things about buying brother out the farm, was that actually we're not in business together and, I mean, I still speak to him nearly every day and dad I view as my own personal business consultant, he knows this business inside out, a good 30 years' experience in it, so I can pick up the phone to him" (MC3)*

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#### ***Information from influencers impacts on farm business decisions (or not)***

*Information received from advisors can inform farm business decisions. However, it is important that advisors are trusted and not seen as 'selling' to the farmer.*

*"But through the diversification business we meet an awful lot of people, and it actually informs my thinking. Maybe only subtly, but it does inform my decisions" (L13)*

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#### ***Reluctance to change hinders adaptability***

*Fear of change can hold back farms from adapting. This can be the case with older*

*"And they've already got their idea of how it should be and stick to it. And a lot of them have been like that all their lives. And they're stuck in a rut in a way. And they fear changing because their neighbours are all still doing*

*farmers, who are reluctant to change and prefer to stick with what they know.*

*what they've always done. So it's like a bit of a tribe and they all stick together" (L13)*

### ***Social networks with other farmers important for continued learning***

*Talking to other farmers and observing what other farms are doing is useful for learning about different/new techniques/technologies, but also for reassurance that other farmers have the same issues/problems. Networks can be talking to neighbouring farmers, farmer open days, discussion groups, social media networks or simply observing what other local farmers are doing.*

*"I suppose I get influenced by other farmers, I'm a shocker for driving down the road because I'm always looking over the hedge, so it's better if my wife drives, and I can say oh what are they doing here. I think going over the years, not quite so much now, but going on open days to see different things being grown and different farmers doing things different ways, but also observation and what other people do, so other farmers" (MC2B)*

### **Insight into entry & exit processes**

There are a range of reasons why someone may choose to enter farming or not. The most important factor is a desire to farm. However, this may not be enough as it is not always possible for a potential successor to work on the farm as soon as they leave school, as the farm may not be

### ***Alternative strategies if there is no successor***

*If there is not successor to take over the farm when the farmer wants to retire, alternative strategies have to be considered, such as the farmer not retiring, or contracting out the farming. This can be a solution, but the farmer may be reluctant to hand over management to an unknown*

*"It's really a case of whether we continue to farm. I mean there are ostensibly three choices. Whether I muddle along or whether I contract out the farm, which I feel I'm comfortable about. I mean my neighbouring farm who I share the machinery with, he's even older than I am. So, we're both in the same position, what do we do from then on" (L13)*



able to support two farmers. They may work elsewhere before returning to the farm later. Others may not have an early interest in farming and so work in another sector, but return to farming at a later date. Family circumstances may also dictate when or if a successor enters farming, as may family relationships.

*entity, particularly if the farmer is attached to a particular way of farming (e.g. nature friendly farming).*

#### ***Change in family circumstances as a driver for entry (or exit)***

*Changes in family circumstances, such as death, illness or divorce, are often moments that precipitate entry into farming. The new entrant may feel pressure to take on the farm in order for it to continue, and succession may be sudden and unplanned.*

*“My mother died, and it precipitated the decision” (L04)*

*“Okay, I needn't have done that. I could've said no, I'm not going to do this, I need to go university or I need to do this. But at the time there was...my father had a stroke; my uncle was elderly. There was kind of...there was a point where well, we'll sell the farm unless you come and help. It wasn't said out loud but that was...there appeared to be a choice ... And I sort of muddled through for a few years until I got my feet” (L13)*

#### ***Difficulties of working with family***

*Working with family can be a challenge, particularly if family members don't agree or have clashing personalities. This can result in some family members leaving the family farm business, while others stay.*

*“I grew up with a twin brother, we're chalk and cheese, and that's made my life difficult. And so, when I was able to buy him out of the business, that's when peace and happiness really came along. However, all families have problems, and some families get on really well, and some don't. So, we're nothing unusual in that respect” (L11)*

***Enjoyment and attachment to farming as driver for entry***

*Enjoyment of farming is often a reason for entry, either directly working on the family farm from leaving school, or returning to it later.*

*“I’ve never done anything else. I left school and...well I was working here before I left school. But I’ve never felt I wanted to do anything else or I was actually able to do anything else” (L06)*

*“I love being outdoors, and love the countryside. I knew I would like farming, I knew liking farming wouldn’t be enough, I knew I’d need to love it” (MC2A)*

***Entry into farming as a lifestyle choice***

*Bringing the family up on a farm can be a lifestyle choice – for the space, environment, privacy and outdoor lifestyle.*

*“The reason I keep going with the farm is it, yeah, it’s definitely heritage, but also it’s the will to want to bring my family up in the environment we’re in, you know, they’re asleep in the garden now the children, you know, the privacy we have is just unbelievable” (MC3)*

***Inability of the farm to support father and son limits early entry opportunities***

*The size of the farm and the profit margins may mean that the farm cannot provide incomes for both incumbent and succeeding farmer, thus leading the succeeding farmer to work elsewhere and returning to the farm*

*“I was leaving university when he first bought the farm, and 200 acres certainly wasn’t big enough for both of us” (L04)*

*later, when the incumbent wishes to retire or reduce their time on the farm business.*

***Increasing requirement for skills and qualifications can be a barrier to farm entry***

*New entrants and farm labour increasingly need qualifications to operate machinery, and running the farm business requires many skills.*

*“But now, when I look at the differences when I started, you didn’t really have to have any licenses for anything. Sprayer operator now, I’ve got to have qualifications there to use a sprayer ... There’s a lot more paperwork to it nowadays and you need to have a lot more know-how on office-based work to keep up to date with everything” (MC6)*

***Interest in working outside the family farm as reason for non-entry or delayed entry***

*Wanting to work outside of the family farm and to experience working in a different sector or live in a different place are influences on whether to enter farming or not, or to delay entry.*

*“I wanted to get away, to live in different places, to really stretch myself, and I didn’t see farming as, because I didn’t have much exposure to farming, I didn’t see it as an exciting place to be” (MC2A)*

***‘My children are too bright to go into farming’***

*Farmers may view farming as a career choice for those who are less academic.*

*“The other two are far too bright to come back and farm, so they’ve got much more intelligence and got careers that will hopefully keep me in my dotage” (L14)*

*They may encourage their academic children to pursue careers elsewhere.*

### ***Pressure to enter (or not)***

*Some farmers felt pressure from their family to enter farming, working on the farm straight from school and feeling like they had no other choice or opportunity to do anything else. Others recognise that potential successors must really want to farm and so do not put any pressure on their children to farm, even encouraging them to work outside of farming first before deciding.*

*"I'd love for them to carry on with it but, you know, I'd never pressure them into it because it's got to be something you want to do at the end of the day. If you're not...if your heart's not in it then you'll never make a success of it" (L18)*

*"It was like I was working on the farm, sitting on a tractor working on the farm at the age of 12, and when are you going to come home from school? When are you going to finish education? Because we need you, kind of thing" (L13)*

### ***Successors' interest in farming (or not)***

*Having an interest in farming and wanting to farm is an important factor in deciding whether to become a farmer. Some know from childhood that this is what they love to do, others are not interested and do other things, but some do return to farming later after a career in another sector.*

*"I've not had this long term hankering to farm. Some people say, I really want to farm, I really want to farm, they've wanted to farm for as long as they can remember. For me, I've been happy to, excuse the pun, plough my own furrow, I've done my own thing, and been very happy with what I've done and enjoyed it. But, coming back to the farm wasn't something that I felt that I had to do, it*

wasn't something that I really wanted to do, but it was an opportunity that was too good to miss" (L04)

### Structural change often occurs when successor takes over farm

When a successor takes on the decision-making of the farm structural change often occurs. The incoming farmer may make new investments, change the specialisation, and/or diversify the farm activity. Thus, the moment of succession appears to be a trigger for structural change.

"When I came home, I replaced the sheep with indoor pigs, so we now fatten 3700 indoor pigs a year and so that's a full time job for somebody, so when I took over the farm, there was one person working here, I now have three people working for me" (MC3)

### The financial impact of farm succession can lead to structural change

*Farm succession can be an expensive period on the farm. There may be inheritance tax to pay, and the successor may need to buy out other inheriting family members. This can lead to increased debt and financial pressures,*

### *Costs of inheritance and dividing the farm between farming and non-farming successors has financial implications*

*Often money has to be borrowed by the successor farmer to buy out his/her siblings of the business, which can lead to large debts. Dividing the farm into smaller parcels of land for multiple successors is often not seen as viable as farms need to increase their acreage in order to be resilient and*

*"Four...within four years my brother's...wanted his share out the business and he was convinced I'd have to sell the business. He went off to do other things ... I borrowed a lot of money. In fact it was, you know, pretty marginal whether I could make a go of it, but we did" (MC1B)*

including the continued financial support of retired family farm members. provide enough income for a farmer and his family.

### ***Exploiting tax breaks and minimises inheritance tax bills across the life course***

Older landowners may be more inclined to rent out their farm on short FBTs rather than long-term tenancies as this decreases the value of the land and thus the inheritance tax that will need to be paid. The organisation of the business (e.g. a partnership model) may also be driven by tax reasons.

“So it depends on the age of your farmer how he wants to use the tax breaks, to be an active farmer or to be a contract...renting land out, and it changes the classification on their tax” (L02)

### ***Retirement planning***

For tenant farmers with no successor, investment outside of the farm is necessary in order to plan for retirement.

“I mean, we’ve been able to invest outside the farm, which is essential on a tenanted farm, because our sons aren’t interested in carrying on, so you’ve got to have, if I decide to retire at some stage, then I’ve got to find somewhere to live” (L11)

### ***Supporting retired family members puts a financial strain on farm business***

Farm businesses often have to continue to support retired family members, perhaps

“I do still pay my dad, there are some elements of his mother’s bills, my grandmas bills to pick up, I can’t exactly dodge them, can I, you know, she’s 92, she rang up, she put her heating all on my account, what am I going to do, go around there and go, sorry, you need to pay me 500



parents and grandparents. This can put a financial burden on the successor.

quid? But, I'm trying to find every £500 I can and there's one that's just walked out the door, but what do you do about it?" (MC3)

### Structural change as a resilience strategy

Structural change on the farm is often a resilience strategy, enabling the farm to persist, adapt or even transform. It is often in response to an influencing factor such as policy change (e.g. regulation), access to labour, reduced profitability and a need to become more efficient. Diversification of the business can enhance robustness by spreading risk.

### Policy influence on crop management decisions

*Changes in the type of crops grown or cultivation method enable farmers to adapt to anticipating future regulations, such as restrictions on the use of plant protection products etc.*

*"And drilling straight into that. And we're trying to...the machine I bought has a crimp roller on the front, so it can flatten and squash the green manure, so it protects the soil, leaves a mat, stops the rubbish coming through. And if we can get it right, we won't need glyphosate to destroy the crop. So when the glyphosate goes, we want to be ready for that" (L02)*

### Availability of labour influences specialisation

*A move away from less labour-intensive forms of farming enables farmers to adapt to a reduction in the availability of good labour.*

*"One other risk I haven't mentioned is supply of labour. We've got very loyal staff but it's getting increasingly difficult to find people that are willing to work on farms. That was a bit of a contributory factor. We used to be dairy farming until seven years ago, and the livestock side, we changed from dairy to beef in 2011 because it was becoming incredibly difficult to find anybody around here who was willing to work with dairy cows, and we lost our herdsman in 2009 I would think. He went back up to Cumbria, and for those last two years we really found it incredibly difficult getting somebody who was committed and able to do the job to a high enough standard" (L12)*

### **Barriers to diversification**

Although diversification is seen as improving farm resilience, there are barriers to some forms of diversification, such as obtaining planning permission and objections from the local community. Other factors may be that some farms are better suited to some forms of diversification than others, due to their geographical location, on farm characteristics and availability of farm buildings.

*“We’ve tried different things here, we tried for a wind farm and it was the locals and the church actually stuffed that. We started putting a building up at the front which we haven’t finished yet and locals over the road kicked off about that, why do you have to build...what’s wrong with your present buildings, why do you need to build a bigger barn? Can’t you build it somewhere else?” (MC5)*

### **Diversifying business to provide financial stability**

Non-agricultural diversification enhances resilience by enabling the farm to have a predictable income stream that can provide a buffer when the arable business is struggling.

*“And what I’ve tried to do with my business over the years is spread the risk, so that we’re not exposed in that we don’t have one particular... It’s not putting our eggs in one basket effectively. So, we have years when perhaps the farm core agricultural business hasn’t done so well because the yields haven’t been so high or the weather has been difficult or the prices have been low. But it seems the case quite often is that that’s a year where we have a particularly good in the diversified side, in the wedding business. One doesn’t carry the other, but they complement one another. So we spread the risk” (L13)*

### ***Economic viability influences farm specialisation***

*A move away from livestock on arable farms is largely a result of reducing profitability in this specialisation.*

*“Stopping the cattle was an easy decision to make, because you would be throwing money away, carrying on doing it. So, that was very easy” (L11)*

### ***Expanding size of farm to be more robust***

*Many arable farms have expanded their size as a resilience strategy, to enable better use of machinery, and to spread the risk across a larger geographical area (e.g. if a crop fails in one part of the farm, it may be ok elsewhere).*

*“Then we sort of realised we're not in a strong enough position the size we were, so then we had an opportunity of taking the neighbours on, taking his member of staff on” (L02)*

### ***Tenure type influences stability of farm***

*Tenure type can impact on the ability of a farm to be resilient. Owner-occupiers are able to invest for the long-term in their farm, whereas tenant farmers may focus more on the short-term, particularly on short tenancies when there are no guarantees of continuity.*

*“I think we’re in a lot better state than some people are, because we’ve not got a lot of rent to pay, so that makes a huge difference. At least we know if we spend money on fertilisers and other inputs that are going to last several years, then we know we’re still going to be farming that land, the land isn’t going to be taken from underneath us or when the tenancy runs out that could go to someone else. Which is I think one of the biggest things for people hiring land is to know that they’re going to have time to*

*do it properly rather than purely just mine it and leave a mess for someone else" (L06)*

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