

D4.3 – Policy Bottom-up Analysis – All Case Study Report

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Abstract

The influence of policies on European farming systems' resilience cannot be understood without analysing how the Common Agricultural Policy (CAP) and adjacent policies interact and have which effects 'in practice'. We therefore addressed whether and how the CAP and adjacent policies enable or constrain farming systems' resilience through actors' perspectives at the level of regional farming systems. The study followed a bottom-up approach to policy analysis in five farming systems: dairy farming in Flanders (Belgium), arable farming in De Veenkoloniën (the Netherlands), fruit and vegetable farming in *Mazovia* and *Podlasie* (Poland), extensive sheep farming in Aragón (Spain), and large-scale arable farming in East of England (the United Kingdom). The bottom-up analysis allowed us to analyse the interplay between policies and their effects on resilience through the practical experiences of actors within and surrounding the farming systems (e.g. farmers, policy practitioners, farm accountants, advisors, representatives of farmers' organisations or co-operatives, NGOs, agro-industry). The analysis showed that actors across the five farming systems experience that the CAP and adjacent policies unevenly affect their farming systems' resilience capacities (i.e. robustness, adaptability and transformability), depending on the farming systems' context and resilience needs. Overall, the bottom-up policy analysis contributed to a further understanding of the ways that farming systems' actors experience policies' resilience-effects as well as the relationship between policies and resilience more generally.

Content

Deliverable 4.3 contains the following documents:

Protocol for T4.3 Bottom-up Policy Analysis (Candel et al., 2019), incl. code book.

Case study reports:

- Belgian case study: dairy farming system in Flanders (Coopmans et al., 2019).
- Dutch case study: arable farming system in De Veenkoloniën (Buitenhuis, 2019).
- Polish case study: fruit and vegetable farming system in Mazovia and Podlasie (Martikainen & Gradziuk, 2019).
- Spanish case study: extensive sheep farming system in Hoya de Huesca, Aragon (Bertolozzi Caredio et al., 2019).
- UK case study: arable farming in the East of England (Urquhart et al., 2019).





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Protocol for bottom-up policy analysis (T4.3)

Work performed by: P1, Wageningen University in cooperation with HU-Berlin

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1 Introduction

The influence of the policy framework on the resilience of European farming systems cannot be understood without analysing the interplay between the CAP and various other policies across sectors and jurisdictional levels from the perspective of regional farming systems. In this task we will conduct a bottom-up evaluation of policy framework for farming systems in five regions: dairy farming in Flanders (Belgium), extensive sheep farming in Hoya de Huesca, Aragon (Spain), arable farming in De Veenkoloniën (The Netherlands), large-scale corporate farms in East England (UK), and family fruit and vegetable farms in the Mazovian and Podlasie regions (Poland). The cases have been selected with a view to the variety of EU farming systems and associated challenges, as well as surrounding policy configurations.

The assessment will follow a bottom-up approach to policy evaluation (Sabatier, 1986), meaning that we try to grasp the complex interplays between various policies through the practical experiences of different type of farmers, NGOs, and regional policy makers. In contrast to a top-down policy analysis that takes specific policy outputs as a starting point and assesses the degree of goal attainment (i.e. the match between policy objectives and outcomes) and potentially other effects, a bottom-up policy analysis starts from the perspective of those who are affected by a range of different policies. This include abandoning the divide between policy objectives and instruments:

Policy objectives and instruments are no longer defined as benchmarks to be reached; instead it is expected that they may undergo modifications during the process of implementation. ... Hence, effective implementation is not measured by the attainment of a certain centrally defined objective, but judged by the extent to which the perceived outcomes correspond with the preferences of the actors involved. The crucial question for evaluating implementation success is the extent to which a certain policy allowed for processes of learning, capacity-building and support-building ... (Knill & Tosun, 2012, p. 155; see also: Berman, 1978; Lipsky, 1980)

Key steps in this task are: (i) case selection; (ii) selecting and contacting respondents; (iii) desk research (analysis of regional and non-CAP policy documents); (iv) in-depth interviews with involved farmers and other stakeholders (e.g. policy makers, NGOs, farmer's organisations); (v) inductive analysis of the interview transcripts using deductive and inductive coding; and (vi) hold a regional stakeholder check to validate findings. The task will result in five case study reports with the results of the assessments in the five regional case study areas. P1 is responsible for the





methodology and overall documentation, P1, P2, P3, P4, P9, and P15 are responsible for the regional case studies.

The overall objective of this task is:

To perform a bottom-up evaluation of how the web of multi-level and multi-sectoral policies evolves at the level of the regional farming systems and how it enables or constrains resilience.

2 Conceptual approach

This task will adopt a dominantly inductive approach. Different from Task 4.2, we will not start from a predefined conceptual approach. The primary objective of this task is to explore how actors within and surrounding farming systems experience the influence of policy configurations on their farming system's resilience (cf. Huttunen, 2015).

Policy configurations – or *mixes* – refer to how multiple implemented policies interact and have interdependencies, leading to synergies or conflicts that affect policy outcomes. Which policies are relevant to a specific farming system is first and foremost an empirical question. Private governance arrangements (e.g., organization of the value chain) will be considered where relevant (e.g., when mediating/influencing the ways in which policies affect a farming system's resilience), however are not the central focus of the task.

For *resilience*, we follow the SURE-Farm Project conceptualization and are interested in how policy configurations affect the robustness, adaptability, and transformability of a farming system (Meuwissen et al., 2017). In addition, we add the category of *non*-resilience, which describes a farming system that has witnessed a decline of its essential public and private functions. As resilience is a potential, it cannot be directly observed. We will therefore study farming systems' resilience in retrospect; examining how the farming systems dealt with changes and risks in recent years, as perceived by the actors involved.

The aim of this task is not to assess causal relationships between policies and resilience, but to explore policy influences as *experienced* by actors on the ground, i.e. within and surrounding a farming system (cf. Huttunen, 2015; Yanow, 1996). The scope of the study is not limited to farmers, but incudes all actors that directly influence the decisions of farmers, such as consultants, extension officers, farmers' organisations, investors, or study groups. The research is thus interpretive, meaning that we are interested in participants' experiences and interpretations within a specific socio-historic context.







I = Robustness case; II = Adaptability Case; III = Transformability case; IV = Non-resilience case (Decline)

Figure 1 Study design



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3 Methodological approach

The research design for this task is visualised in Figure 1. The experienced influence of policy configurations on the resilience of farming systems will be studied in four cases per country. These cases will be analysed through in-depth interviews with relevant stakeholders (approximately: n=5 per case, 20 in total per country), complemented with the document analysis. The data collection and analysis processes follow 6 steps:

Step 1: Identifying cases. Following on discussions in the consortium and feedback from the scientific board, we distinguish between regions and farming systems. A region may encompass multiple farming systems and, vice versa, a farming system is not necessarily bound to one region or even institutionalised spatial territories. Farming systems are thus considered to be embedded in 'nested' levels of systems at multiple scales. They may also partly overlap and are likely embedded within broader systems (Adams, 2015). We start with regional farming systems and leave it to the inductive empirical investigation to determine the relevant broader systems, e.g. the national retail system, the sector-specific marketing system, a regional farm innovation system or a sector-specific regulatory system. To be able to explore policy influences for different types of resilience, the first step is to identify four farming system cases (i.e. robustness, adaptability, transformability and non-resilience cases) in the case study region. Of course, in practice, farming systems may show characteristics of various types of resilience; the goal is to ensure variation in terms of the stability/change of practices and functions, not to shoehorn cases into conceptual categories. If possible, please select cases that are largely subjected to the same policy configurations, e.g., falling within the same provincial jurisdiction. In addition, make sure that the patterns of resilience occurred in approximately the same period of time, so that the policy contexts were largely similar. We suggest that a good time horizon to assess the influence on policy on resilience is the consider the time period since the Fischler reforms of the CAP or the Eastern enlargement of the EU respectively. It may be helpful to use a 'gatekeeper' to identify cases and to approach respondents (step 2), for example a local/regional agricultural policy maker with a good overview of the farming system.

Step 2: Identifying and contacting respondents. To explore the policy influences on each system, we aim to interview at least five respondents per case, i.e. a total of twenty per country. Which actors are most relevant to talk to will differ across cases; we propose to start with two farmers and follow from there. Types of actors that may be relevant include contractors, study groups, suppliers, farmers organizations, extension officers, regional policy makers, NGOs, and financial organizations. Some respondents may be able to provide insights into multiple cases. If using a gatekeeper, we would recommend not to contact all respondents through one contact person, but also ask the first respondents who they would recommend to talk to ('snowball sampling').





Step 3: Desk research. Although it is an is an empirical question which policies respondents find most influential, it is necessary that you familiarize yourself with the local policy context before the start of the interviews. This will help to interpret and contextualize respondents' insights and make it easier to ask follow-up questions. The desk research involves exploring existing data and statistics, including previous studies, reports, or datasets. Media reports might also be useful. In addition, we advise to get acquainted with the policy context, including regional development programs, environmental and manure regulations, energy policies, and taxing and social policy schemes, depending on which are considered most relevant to the specific cases. This step shows similarities to the desk research for policy documents of Task 4.2.

Step 4: Interviews. The interviews are the core of this task. As we do not want to steer the respondents towards certain answers (e.g., particular policies) but are interested in their spontaneous assessment of influences, we propose a semi-structured interview approach. To ensure comparability, we have formulated seven topics that should in some way be addressed, but interviewers are free to decide how they want to bring up these issues and which other topics and questions they want to add. Asking follow-up questions is key in this exercise, as it allows for a more in-depth understanding of respondents' views and experiences. Ideally, the researcher would already have some experience with conducting in-depth interviews. Useful instructions can be found in this short <u>YouTube clip</u>, this <u>longer</u> one, or this <u>manual</u>.

Please include the following seven topics in your interviews:

- 1. **Background of the farm system**: What is that they do, what are the main functions (marketable and public goods)?
- 2. **Risks, challenges, drivers**: What are the main risks and developments that (they expect to) affect their business? About which risk/challenge are they the most concerned? Which of the risks/challenges occur most frequently? When or since when did these risks/challenges etc. occur? Which shocks and stressors are expected for the future? Are there risks etc. that might be reduced?

[**Note**: Ensure that the framing of the questions does not create an artificially dark image. Try to ask questions that also invite respondents to talk about opportunities.]

- 3. **Resilience**: How do respondents and the farm system cope with these risks and developments and how do they balance them with opportunities? Do they feel that the farming system is well prepared to deal with these risks/challenges? Why (not)? Do they feel that the farming system is well prepared to capture the opportunities?
- 4. With whom do they talk in order to take decisions to deal with these challenges?





- 5. **Policy**: For the most important challenges and drivers/risks/opportunities: How are policies supporting or hindering dealing with them/ making use of them? Which policies are most influential, and why? Are policies constraining or enabling? Are there inconsistencies across policies? Do the respondents experience differences between policy/political objectives and the implementation of policies? If the respondents were 'king for a day', what changes to the policies would they make to enhance the resilience of the farming system?
- 6. **Information and learning**: How do respondents and other actors in the farm system access information and learn about policies? What is the role of networks? To what extent do they feel they have a good overview of relevant policy?
- 7. Do respondents and other actors in the farming system feel they have sufficient access to knowledge, capital, social networks, markets, insurance and other resources?

It is important to create an atmosphere in which the respondent feels safe to share their personal insights. We, therefore, recommend starting with explaining the context of the research, how data will be used (incl. a guarantee of confidentiality/anonymity in data processing and presentation), and an informal chat about the personal/organizational background.

Interviews are likely to take 1.5 hours, but might last longer. You can use recording equipment (e.g., a phone), in case of which it is necessary to ask for permission first. Please transcribe each interview. This does not need to be a literal transcription, but make sure that all essential insights are captured. Passages where wording is crucial, e.g. because of the use of peculiar frames, should be transcribed literally. In addition, we suggest transcribing key quotations that provide a good illustration of a broader experience/insight.

Step 5: Analysis. The interviews will be analysed through a combination of deductive and inductive coding. That implies that a general codebook will be developed by the WP4 Leaders that each partner will use for their coding (deductive); and that partners can develop and use codes that fit their case study and complement the general codebook (see *section 7* for more information). A good instruction of how to create case-specific codes can be found <u>here</u> (DeCuir-Gunby, Marschall, & McCulloch, 2011; see also Saldaña, 2016). Some key points:

- Codes are 'tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study' (Miles & Huberman, 1994, p. 56). Creating these codes is the first step in the analysis. Codes are then assigned to sentences or paragraphs. Multiple codes can be assigned to a single piece of text.
- Our codes will be data-driven, i.e. they emerge from the raw data, albeit partly structured by the seven abovementioned research questions.





- A codebook is an overview of codes, definitions (of the codes), and examples (of pieces of text to which the code is assigned) that guides the analysis.
- Coding is 'the assigning of codes to raw data. This allows researchers to engage in data reduction and simplification. It also allows for data expansion (making new connections between concepts), transformation (converting data into meaningful units), and reconceptualization (rethinking theoretical associations). Further, through coding, researchers make connections between ideas and concepts.' (ibid., p.138)

The goal of the coding exercise is to obtain a grounded understanding of the relation between policy configurations and (the four types of (non-)resilience). Although the five topics/research questions give some sense of direction, this is an iterative process, meaning that relevant labels (codes) will be identified during the process. This process of moving from data to abstract labels often requires various rounds of interpretation, and is facilitated by working in pairs or small groups. We very much recommend using qualitative data analysis software, such as *ATLAS.ti* or *NVivo*, as these offer a range of functions that make it much easier to do the coding and subsequent interpretation.

Step 6: Synthesis. The sixth step involves writing a synthesis based on the analysis. This requires carefully analyzing and interpreting the relations between codes and associated quotations (parts of the text to which the code was assigned), so as to be able to distil the main relations, insights, and experiences. This is thus an interpretive step; the quality of the synthesis relies on the ability of the researcher(s) to, first, assign relevant codes and subsequently compare these to develop a more abstract/theoretical narrative. The synthesis will be the core of the final deliverable. Ideally, the synthesis will result in a small number of summary statements about the ways that the policy framework affects the resilience of the four farming systems in your study. The summary statement should build closely on the analysis. The WP4 Leaders provide a format for the final case study reports for partners to follow.

Step 7: Regional stakeholder checks. The final step is to organise a regional stakeholder check to validate the results of the analysis (similar to Task 4.2). The stakeholder check is used to increase the trustworthiness of the qualitative inquiry (Carlson, 2010). It provides the stakeholders with the opportunity to check the interpretation of the date they provided and/or are involved in. It is a way of finding out whether the data analysis is congruent with the stakeholder's experiences. It utilizes the lenses of participants and external stakeholders in addition to the lens of the researcher(s). The goal of the stakeholder check is then to present and discuss the findings to validate and enrich them. For the stakeholder check, we recommend inviting 5 à 10 stakeholders to initiate a fruitful discussion about the findings.





4 Deliverable 4.3

From each case partner we expect a report that includes:

- A methodological chapter with description of the cases and how these were selected, respondents and how these were identified and why they were selected, documents and other information sources that were reviewed in the desk research, the coding and analysing process; as described in steps 1-5.
- A chapter about the organisation of the stakeholder check, in which you briefly describe the format of the check, how many participants were present, location and the date.
- A synthesis chapter (described in step 6). Present the main findings of your analysis in a structured manner. Also, provide a set of summary statements on how policies affect the resilience of the farming system by using a coloured ResAT wheel.
- A conclusion chapter in which key conclusions of your report are presented.
- A reference list.

See also the format for the final case study report that was distributed by the WP4 leaders for more information.

The WP leaders (WUR) will integrate the case study reports in the final deliverable. If you plan to publish about your own case analysis, please follow the consortium guidelines and inform the WP4 leaders.

5 Timetable

Month	Activities
November-December 2018	Research preparation (identifying cases,
	contacting respondents)
January-March 2019	Interviews
March-April 2019	First round of analysis: develop a codebook
10-12 April 2019	SURE-Farm meeting in Italy: discuss
	experiences and codebook(s)
April-August 2019	Second round of coding and writing final
	report (incl. synthesis)
September 2019	Submit case reports to WP4 Leaders





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7 General codebook

7.1 Step 1: Describing the respondent and farming system

The first step of the interview analysis is to think and make notes about the respondent; and the farming system, based on the answers given by the respondent(s):

Respondent characteristics (what is what they do?)

Provide a personal description of the respondent (one paragraph). How have the respondents introduced themselves? Think of:

- Profession / main position (e.g. farmer & farm owner, manager, administrator, accountant, advisor etc.)
- Age [optional only when asked for or when mentioned]
- Educational background [optional only when asked for or when mentioned]
- Other activities of the respondent (e.g. "I am owner of a farming business (...) Besides being a farmer, I am also part of the day-to-day-management of a rural landscape protection organisation.")

Description main functions of the farming system

Make notes about the main functions of (1) the farm / organisation and (2) the farming system, mentioned by the respondent. Which activities does the respondent ascribe to the farm or farming system in relation to the provision of private goods and public goods? Think of:

- Producing food
- Producing bio-based resources, incl. fuels and fibres.
- Producing energy, excl. biomass (e.g. production of energy through renewable sources, such as solar and wind power)
- Providing (in)directly farm-related employment
- Providing education
- Protecting or enhancing biodiversity;
- Preserving rural landscape and landscape features;
- Preserving natural resources
- Ensuring animal health and welfare.

This list provides some examples; however, it is non-exhaustive (i.e. other functions can also be recognized and described).





Description farming system's actors

Provide a description of mentioned actors of the farming system (one paragraph) Which actors are being mentioned by the respondent? What is their role in the farming system?

Some examples:

- (Other) farmers
- Governmental actors
- Accountants / advisors
- Managers
- NGO representatives
- Agro-industry
- •

7.2 Step 2: Using codebook

The second step is to carefully analyse the interviews by using the codebook presented below. The codebook provides an overview of codes, definitions of these codes.

The coding takes place in **two rounds**. As decided during the WP4 Satellite Meeting in Viterbo (see also the minutes of this meeting), the first round of coding will be done using the general codebook provided by WP4 Leaders; followed by developing and using case-specific codes. The second round of coding is used for deeper interpretation of the implications for resilience.

(1) In the first round, codes are assigned to phrases (or paragraphs) that contain relevant information corresponding to the questions/subjects. The codes are categorized according to the topics (and questions) provided in the protocol of Task 4.3 (p. 7). The codes correspond to possible answers given by the respondents. For the first round of coding the partners will make use of the **general codebook** provided by WP4 Leaders. Be aware that the codebook is not a checklist for conducting the interviews. Not all codes necessarily have to be applied to all interviews. This means that it is possible that, for example, interview X is more focused on challenges and/or resilience strategies, while interview Y provides more information about policies. This will also influence the codes that you will be using in your analysis.

Coding is an iterative process: the topics give some sense of direction; the codebook is not exhaustive. Relevant codes can be identified during the process. We want to give you the opportunity to discover and generate (possible) codes. Partners can, therefore, develop and use **codes that are case-specific**. This means that partners can add their own relevant





codes to the codebook that fit their case study and complement the general codebook. When doing so, please also add the definition of these codes in the codebook.

(2) In the second round, the quotations related to **policies** (i.e. the text that has been coded in round 1 for "policies") will be coded again to indicate if these policies enable or constrain robustness, adaptability and/or transformability. It is the task of the researcher to determine which resilience dimension is the most relevant. The coding works similar as the ResAT scoring round of T4.2: you will give a score of 0-5 to indicate the extent the policy enhances/constrains the resilience. In addition, this round also offers the opportunity to code (experienced) contradictions within and between policies and (experienced) discrepancies between policy goals, policy instruments and the implementation.

Important: Coding round 2 is based on the interpretation of the researcher. It is the researcher's task to determine which resilience dimension is affected; and to determine if the policy has an enhancing or constraining effect. However, the researcher's interpretation should be based on the experiences brought forward by the respondents during the interviews.





General Codebook (first round of coding)

QUESTIONS	CODES	DEFINITIONS
Challenges - risk & drivers*	o' challongos (i.e. opportunitios) related to the code topic	* Nuce comments to indicate when negative or positive
Not only code negative chanenges, but also positive	1 a Income and fair prices	Challenges related to generating income and receiving (fair) prices for received goods
	I.a meome una jun prices	
	1.b Upscaling and intensification	Challenges related to upscaling of farm businesses and intensification of farming practices; feeling that upscaling of farm business is necessary.
	1.c Downscaling and extensification	Challenges related to downscaling of farm businesses and extensification of farming practices (production); feeling that downscaling of the farm business is the only solution or a necessity.
	1.d Land acquisition and land prices	Challenges related to the acquisition of land for farming practices, and the prices of acquiring new land.
	1.e Input and maintenance prices	Challenges related to (raising) prices of inputs and maintenance (e.g. seeds, fertilizers, pesticides, equipment, fuels).
 What are the main risks and developments that (respondents expect to) affect the farming system? 	1.f Market & competition	Challenges related to the agricultural market, such as fluctuating market prices, unpredictability of markets, (un)fair competition. Also challenges related to 'keeping' up with (global) economic developments.
	1.g Debt	Challenges related to (financial) indebtedness due to borrowed funds or high investments.
	1.h Supply agreements & contracts	Challenges related made agreements with other actors in the food chain (for example, farmers that made supply agreements with food processing industry).
	1.i Diversification agricultural practices	Challenges related to introducing new agricultural activities (agricultural functions to the system) in place or in addition to the traditional / main farming pursuit (e.g. introducing new crops)
	1.j Diversification non-agricultural practices	Challenges related to introducing non-agricultural activities (non-agricultural functions to the system) in place or in addition to the traditional / main farming pursuit (e.g. starting to generate renewable energy, or tourist activities)
	1.k Farm succession	Challenges related to farm succession (e.g. finding successor, financing of succession, inheritance tax).
	1.I Workload	Challenges related to the (increasing) workload of farming system actors, both physical and physiological.





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	Related are the (experienced) increasing administrative tasks (e.g. related to applying for funds, taxes etc. – 'paperwork')
1.m Balance family - farm	Challenges related to balancing family life with the farming business (e.g. a farmer can feel that he/she is placing a burden on their family). This also includes challenges related the inclusion of family members in the farming business.
1.n Horizontal collaboration	Challenges related to collaboration between actors at the same level or stage in the food supply chain, for instance, to achieve common goals and/or greater ease of work (e.g. farmer-farmer collaboration). This also includes challenges related to trust
1.0 Vertical collaboration	Challenges related to collaboration between actors from different levels or stages in the food supply chain, for instance, by sharing their resources, information, responsibilities to serve relatively similar end costumers (e.g. farmers that made supply agreements with food processing industry. Farmer – processing industry collaborations). This also includes challenges related to trust.
1.p Innovation	Challenges related to experimentation, innovation, new technology and techniques. Also, the challenge of keeping up with (new) technological evolutions.
1.q Changing policies and legislations	Challenges related to unclarity about policies, to the changing of policies – both too fast as too slow changing policies – and increasing legislations.
	The need to keep up with new and different policies and legislations.
1.r Lack of agricultural-related knowledge	Challenges related to the (experienced) absence of agricultural-related and practical knowledge with farming system actors and non-farming system actors.
1.s Changing image of and societal appreciation for agriculture	Challenges related to a changing image of and appreciation for the farming system, or agriculture in general. This also includes challenges related to the trust of non-farming system actors in the farming system, and questioning the legitimacy of farming system actors / license to produce.
1.t Changing consumer demands	Challenges related to changes in the demands of consumers related to food and food production
1.u Differences in policies between EU Member States	Challenges related to (experienced) differences in policies, legislations, governmental decisions between EU Member States.
1.v Weather events and climate change	Challenges related to (extreme) weather events (e.g. heavy rainfall, drought), or climate change.
1.w Water supply	Challenges related to the supply of fresh water for agricultural practices.





	1.x Protection and enhancement of biodiversity	Challenges related to the protection and enhancement of biodiversity (variety in species, genetics/genes and ecosystems).
	 1.y Plant and/or animal diseases 1.z Environmental and climate impact of agriculture 	Challenges related to the prevention of pests and diseases, controlling outbreaks and securing and improving the biosecurity. Challenges or concerns related to the impact of agricultural practices on the environment and/or on the climate. Think of environmental pollution, or emissions, or the impact of agriculture on (the quality) natural resources.
Resilience		
	2.a Yes, capable to deal with risks	The respondent indicated that the farming system is capable of dealing with risks.*
		*code also the given reason(s)
2. To what extent is the farming system capable of dealing with risks?	2.b Partly capable of dealing with risks	The respondent indicated that the farming system is partly capable of dealing with risks (e.g. "one the one hand on the other hand")* *code also the given reason(s)
	2.c No, not capable of dealing with risks	The respondent indicated that the farming system is not capable of dealing with risks.*
		*code also the given reason(s)
	3.a Yes, capable of capturing opportunities	The respondent indicated that the farming system is capable of capturing opportunities.*
		*code also the given reason(s)
3. To what extent is the farming system capable of capturing	3.b Partly capable of capturing opportunities	The respondent indicated that the farming system is partly capable of capturing opportunities (e.g. "one the one hand on the other hand")*
opportunities?		*code also the given reason(s)
	3.c <i>No, not capable of capturing opportunities.</i>	The respondent indicated that the farming system is not capable of capturing opportunities.*
		*code also the given reason(s)
4. How do respondents and the farming system cope with mentioned risks and	4.a Anticipating events	Anticipate on events by making proper preparations and/or plan work in advance. The preparations help to brace for shocks – to buffer against impacts.





[developments, and how do they		A specific kind of anticipating events is by <i>saving money</i> (e.g. save share of profit, reduce production
	capture opportunities?		costs) that could function as a buffer for worse times
		4.b Upscaling of (farming) business	Respondent indicates that actors aim to increase the growth of their (farming) business, for instance,
			by buying land or by making (other) investments that increase production
		4.c Downscaling of (farming) business	Respondent indicates that actors aim to minimise their (farming) business, for instance, by selling land.
		4.d Intensifying (farming) business	Respondent indicates that actors increase the production of their business by, for instance, using new machines, changing cultivation plans etc.
		4.e Specialisation of (farming) business	Increasingly focusing on a single dominant activity (e.g. producing only a single crop) that then provides a large share of the farm income.
		4.f Diversification agricultural practices	Introducing new agricultural activities (agricultural functions to the system) in place or in addition to the traditional / main farming pursuit (e.g. introducing new crops). This also includes differentiating from other producers and/or exploring agricultural niche markets.
		4.g Conversion to alternative farming methods	Conversion of farming practices towards alternatives to conventional farming methods. Alternatives consist out organic farming, permaculture or by applying agroecological farming practices.
		4.h Diversification non-agricultural practices	Introducing new non-agricultural activities (non-agricultural functions to the system) in place or in addition to the traditional / main farming pursuit (e.g. starting to generate renewable energy, or starting bed & breakfast) (but also processing and selling (farm) products on the farm).
		4.i Additional income	Income earned via an additional job (or job of partner/family member) to make ends meets / that flows back into the (farming) business. (This income flow is not necessarily part of the (farming) business).
		4.j Experiment / innovate	Respondent indicates that experiments with new agricultural practices are held, and that new methods/innovations are used in the farming system. Investments are made to make use of innovative farming practices.
			Investments are made to promote experimentation and innovation in the farming system.
		4.k Offering or taking out insurances	Respondent indicates that insurances are offered or taken out to cope with risks.





	4. Forming cooperative(s)	Respondent formed / is part of cooperative to work as a collective to meet common interests and
		share resources.
	4.m Member of trade union(s) / advocacy	Respondent is part of a trade union, or other organisation, that represents and advocates his/her
	organisation	interests.
	4.n Lobbying	Actions aimed at influencing the actions, policies, or decisions of businesses or governmental actors.
	4.0 Reaching out to farming system actors	Collaborating with and/or developing and exchanging knowledge through social processes with farming system actors. This includes, for instance, collaborating with family members, friends, neighbours/acquaintances (exchanging services or materials); also includes consulting agricultural advisors or accountants specialised in the agricultural sector.
	4.p Reaching out to non-farming system actors	Collaborating with and/or developing and exchanging knowledge through social processes with non-farm actors. Learning across institutional boundaries (i.e. social learning).
	4.q Reflecting upon what you do	Reflecting on the schemata that underlie the farming system of which they are part. To reflect and challenge the dominant mind-set and to adjust it to changing conditions (i.e. in-depth learning).
	4.r Putting into perspective	Placing risks and developments into perspective. This can be done by referencing to or comparing with previous years, or by mentioning that 'not every year is the same'.
		Or by arguing that risks and developments are inseparable from the farming system. Respondent indicate that he/she just has to deal with it. – For example: " is simply part of being a farmer"
Policy		
	5.a Basic payment scheme	Pillar I of the CAP – Basic income support granted to farmers based on the number of hectares farmed.
	5.b 'Green' direct payments	Pillar I of the CAP – Complementary income support for agricultural practices beneficial for climate and environment.
5. Which policies are influencing the farming system?	5.c Young farmer payments	Pillar I of the CAP – Complementary income support for young farmers.
	5.d Coupled support	The link between the receipt of a direct payment and the production of a specific product.
	5.e Product quotas	Caps set on the amount of products a farmer could sell per year without paying levies to bring raising production under control.





5.f Market interventions	Measures or interventions used if normal market forces 'fail' (e.g. dropping prices due to (temporarily) oversupply, drop in demand due to health scare), such as market support measures, safety net interventions, crisis reserves.
5.g Producer organisations and inter-branch organisation	Measures and interventions aimed at improving farmers' negotiation position in the food chain through establishing and improving organisations / collectives.
5.h Knowledge transfer & advisory services (Pillar II)	Pillar II of the CAP – measures that make training and skills acquisition possible. Also, support for demonstrations and information actions. Moreover, includes support through advisory services.
5.i Investments in physical assets (Pillar II)	Pillar II of the CAP – Support for investments in physical assets, such as agricultural holdings, the processing/marketing and/or development of agricultural products, infrastructure (related to development, modernisation or adaptation of agriculture), non-productive investments linked to agri-environment-climate objectives.
5.j Young farmers support (Pillar II)	Pillar II of the CAP – Measures that support young farmers, such as business start-up grants (up to €70 000), general investments in physical assets, training and advisory services.
5.k Small farmers support (Pillar II)	Pillar II of the CAP – Business start-up aid up to €15 000 for small farms
5.I Basic services and village revitalisation (Pillar II)	Pillar II of the CAP – Investment in rural areas to secure basic services and to improve liveability of rural villages (areas)
5.m Support non-agricultural activities (Pillar II)	Pillar II of the CAP – Business start-up aid for non-agricultural activities (e.g. micro- and small businesses) in rural areas
5.n Support for producer groups / organisations (Pillar II)	Pillar II of the CAP – Support for setting up groups and/or organisations on the basis of a business plan and limited to entities defined as SMEs.
5.0 Agri-environment – climate payments (Pillar II)	Pillar II of the CAP – payments for agri-environmental-climate commitments and support for conservation and sustainable use and development of genetic resources in agriculture.
5.p Support for organic farming (Pillar II)	Pillar II of the CAP – Support (i.e. payments) to convert to or maintain organic farming practices and methods.
5.q Co-operation (Pillar II)	Pillar II of the CAP – Support measures for technological, environmental and commercial cooperation (e.g. pilot projects, joint environmental schemes, development of short supply chains and local markets).





5		
	5.r LEADER (Pillar II)	Pillar II of the CAP – Support for rural development project initiated at the local level aimed to revitalise the rural areas and to create economic benefits. It encourages experiments in rural development; supports cooperation between rural areas; and to create networks between rural areas for knowledge sharing.
	5.s Rural Development Programme (RDP) (CAP)	Pillar II of the CAP - National and regional programmes co-funded by the EU that address specific needs and challenges facing the rural area of the farming system.
		*Use this code when not sure, or not clear which aspect of CAP Pillar II – Rural Development (see previous codes) is precisely mentioned.
	5.t Legislation on plant protection products	Legislation on the use of plant protection products, that are used to protect plants against pests or diseases, based on their safety for humans, animals and environment (e.g. setting maximum residue levels of plant protection products in or on food or feed).
	5.u Legislation on manure and fertilizers	Legislation on the use and processing of manure and fertilizers. For example, by setting rules on the amount of nitrogen and phosphorus that may be used for growing crops. (This, for instance, also includes references to the EU Nitrates Directive).
	5.v Weather risk management	Risk management to address potential (financial) losses caused by unusual / extreme weather events (e.g. weather insurances)
	5.w Taxes	Compulsory contribution to state revenue levied by government (e.g. income tax, inheritance tax).
	5.x Legislation on animal health and welfare	Legislation aimed at ensuring food producing animals are healthy and are able to cope with the conditions in which they live (i.e. comfortable, well nourished, safe, able to express innate behaviour, no suffering/sickness)
	5.y Legislation on labour conditions	Legislation on related to safe and healthy labour conditions to ensure a proper work environment
	5.z Spatial planning	Policies affecting spatial organisation - the distribution of people and activities / functions in spaces (different scales). Policies focused on the division, coordination and planning of land uses.
	5.aa Social security	Policies aimed to guarantee income and care for people who are no longer
		(temporarily or permanently) capable to generate income themselves.
	5.bb Legislation on water quality	Legislation aimed at governing the release of pollutants into water resources to reduce / prevent water pollution and to ensure high water quality.
		EU Water Framework Directive





	5.cc Legislation on air quality	Legislation aimed at governing the emission of air pollutants into the atmosphere to reduce /
		prevent air pollution and to ensure high air quality.
	5.dd Legislation on food safety and quality	Legislation aimed to ensure that food intended for human consumption will not cause harm or to prevent food borne illness (hygiene) during production, processing, distribution and placing on the market.
	5.ee Land tenure legislation	Legislation aimed at governing how property rights to a land are to be allocated within the Member State.
	5.ff Quality schemes and labels	Policy focused on protecting the names of specific products to promote their unique characteristics, linked to their geographical origin as well as traditional production (e.g. geographical indications (GIs), traditional speciality guaranteed (TSG))
	5.gg Other policies	Policies that do not necessarily fit the previous codes.
<i>6.</i> What changes to the policies would the respondent make to enhance	6.a Suggested policy changes	Respondent provides suggestions, alternatives, recommendations for policies - what can be done differently, according to the respondent?
the resilience of the farm and/or farming system	6.b Suggested other changes	Respondent provides suggestions, alternatives, recommendations not directly related to policies – what can be done differently, according to the respondent?
Resources & network		
	7.a High	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies.
7. Availability of social networks /	7.a High	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies. References to the respondents professional network regarding policies.
7. Availability of social networks / contacts to discuss policies	7.a High 7.b Low	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies. References to the respondents professional network regarding policies. Respondent indicates that there is a low availability of social networks and / or contacts to discuss policies.
7. Availability of social networks / contacts to discuss policies	7.a High 7.b Low	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies. References to the respondents professional network regarding policies. Respondent indicates that there is a low availability of social networks and / or contacts to discuss policies. References to the absence of a professional network regarding policies.
 Availability of social networks / contacts to discuss policies How does the respondents access 	7.a High 7.b Low 8.a Conversation with farmers	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies. References to the respondents professional network regarding policies. Respondent indicates that there is a low availability of social networks and / or contacts to discuss policies. References to the absence of a professional network regarding policies. Respondent indicates to have conversations with farmers (to learn) about policies.
 7. Availability of social networks / contacts to discuss policies 8. How does the respondents access information or learns about policies? 	 7.a High 7.b Low 8.a Conversation with farmers 8.b Conversation with civil servants 	Respondent indicates that there is a high availability of social networks and / or contacts to discuss policies. References to the respondents professional network regarding policies. Respondent indicates that there is a low availability of social networks and / or contacts to discuss policies. References to the absence of a professional network regarding policies. Respondent indicates to have conversations with farmers (to learn) about policies. Respondent indicates to have conversations with civil servants (to learn) about policies.





	8 d Conversation with advisers / accountants	Respondent indicates to have conversations with advisers / accountants (to learn) about policies
	8.e Via organisations and memberships.	Respondent indicates to access information and learns about policies through organisations (e.g. agricultural interests representation) via events, workshops and/or meetings; or by being part of administration or study groups.
	8.f Media	Respondent indicates to access information and learns about policies through traditional media (television, radio, newspapers and/or magazines) and digital media (internet/social media).
	8.g Scientists & research	Respondent indicates to access information and learns about policies via contact with scientists, by following research projects or by reading scientific papers.
<i>9.</i> Availability of information on	9.a High	Respondent indicates that the availability of information on policies is high.
poncies?	9.b <i>Low</i>	Respondent indicates that the availability of information on policies is low.
10. Own comprehension of relevant	10.a High	Respondent indicates to have a high comprehension of policies.
policies	10.b Low	Respondent indicates to have a low comprehension of policies.
11. Comprehension of relevant policies	11.a High	Respondent indicates that there is a high comprehension of policies with other (farming system) actors.
with other actors?	11.b Low	Respondent indicates that there is a low comprehension of policies with other (farming system) actors.
12. Availability of capital to manage	12.a High	Respondent indicates that the availability of capital to manage challenges is high.
chullenges :	12.b <i>Low</i>	Respondent indicates that the availability of capital to manage challenges is low
 Other codes related to resources & network 	13.a Own role in information sharing	The respondent's own role in sharing information about (new) policies.





Case-specific codes – [Name country and case]

QUESTIONS	CODES	DEFINITION	
[Overarching theme of the codes below]			
1. [Related question]	1.a [Name code]	[Definition of the code]	
	1.b [Name code]	[Definition of the code]	
	1.c [Name code]	[Definition of the code]	
[Overarching theme of the codes below]			
2. [Related question]	2.a [Name code]	[Definition of the code]	
	2.b [Name code]	[Definition of the code]	
	2.c [Name code]	[Definition of the code]	
Etc.	Etc.	Etc.	





Coding Policies				
Theme	Code	Definition		
 Are policies constraining or enabling? 				
Robustness	1.a Not enabling very constraining robustness (score 1)	The policy does not enable robustness; or is very constraining robustness.		
	 Slightly enabling constraining robustness (score 2) 	The policy is slightly enabling robustness; or is constraining robustness.		
	1.c Fairly enabling Fairly constraining robustness (score 3)	The policy is fairly enabling robustness; or is fairly constraining robustness.		
	<pre>1.d Enabling slightly constraining robustness (score 4)</pre>	The policy is enabling robustness; or is only slightly constraining robustness.		
	1.e Very enabling not constraining robustness (score 5)	The policy is very much enabling robustness; or is not constraining robustness.		
	1.f Not clear (score 0)	Not clear if the policy enables or constrains robustness		
Adaptability	2.a Not enabling very constraining adaptability (score 1)	The policy does not enable adaptability; or is very constraining adaptability.		
	2.b Slightly enabling constraining adaptability (score 2)	The policy is slightly enabling adaptability; or is constraining adaptability.		
	2.c Fairly enabling Fairly constraining adaptability (score 3)	The policy is fairly enabling adaptability; or is fairly constraining adaptability.		
	2.d Enabling slightly constraining adaptability (score 4)	The policy is enabling adaptability; or is only slightly constraining adaptability.		
	2.e Very enabling not constraining adaptability (score 5)	The policy is very much enabling adaptability; or is not constraining adaptability.		
	2.f Not clear (score 0)	Not clear if the policy enables or constrains adaptability		
Transformability	3.a Not enabling very constraining transformability (score 1)	The policy does not enable transformability; or is very constraining transformability.		



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	3.b Slightly enabling constraining transformability (score 2)	The policy is slightly enabling transformability; or is constraining transformability.
	3.c Fairly enabling Fairly constraining transformability (score 3)	The policy is fairly enabling transformability; or is fairly constraining transformability.
	3.d Enabling slightly constraining transformability (score 4)	The policy is enabling transformability; or is only slightly constraining transformability.
	3.e Very enabling not constraining transformability (score 5)	The policy is very much enabling transformability; or is not constraining transformability.
	3.f Not clear (score 0)	Not clear if the policy enables or constrains transformability
2. Do respondents experience contradictions within and between policies?	4.a Contradictions	Contradictions within and between policies
3. Do respondents experience differences between policy objectives and the instruments or implementation of policies	4.b Discrepancies	Discrepancy between policy goals, policy instruments and the implementation of policies.







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D4.3 Bottom-up analysis: How do stakeholders experience the influence of policies on the resilience of farming systems?

Case study report on: dairy farming system in Flanders, Belgium

Work Performed by P3, OCILVO; and P2, KU Leuven

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1 Methods and data

1.1 Farming system cases

At the start of the research process, the Belgian research team discussed the operationalization of task 4.3 of the SURE-Farm project for the case study of the Flemish dairy sector during a meeting. By merging the SURE-Farm theory (framework to assess farming systems' resilience and resilience capacity definitions) with the knowledge about the case study, it was decided to interpret the four farming system cases as follows. First, for the robustness case, a focus was laid on cost-efficiency improvement and scale enlargement, which represent the dominant farm business strategies for a large group of Flemish dairy farmers. Second, although organic dairy farms only form a small group in all Flemisch dairy farms (BCZ 2019, Timmermans and Van Bellegem 2019), the adaptability case was defined by the theme 'conversion to organic dairy production'. Even though the number of organic dairy farms is still small, it is fast increasing. Conversion to organic dairy farming might sometimes be considered a transformation, yet, we included this strategy in the 'adaptability case', since recent conversion usually means relatively small changes in order to comply with organic regulations and it involves a maintenance of the main farming system functions. Third, diversification of the farm business with processing activities, an on-farm selling point and/or agri-tourism and educational activities were the themes that formed the transformability case. Last, farmers and farming system stakeholders from the dairy farming system in Voeren made up the collapse case, as this farming system is currently heavily under pressure because of specific contextual circumstances that result in both an alarming decrease of the number of dairy farms in that region and landscape degradation (erosion events, loss of typical landscape elements that characterize this touristic area) (Gobin et al. 2017, Thoonen and De Smet 2017, Turkelboom et al. 2018).

The description above is one way of categorizing Flemish dairy farms into the resilience case typology specificied by the protocol (Candel *et al.* 2018). It should be noted that another set of arguments would have led to a different division of our interviewees into resilience cases. However, rather than aiming at an absolute definition, this application was chosen in order to effectively steer the recruitment process: ensuring the formation of a diverse sample of interviewees that is illustrative for SURE-Farm resilience capacities and for the variety of dairy farm trajectories.

1.2 Desk research

Below, a list of references is provided; summarizing the literature review that supported the researchers to introduce themselves into the topic and providing the documents and websites that were consulted in order to support the identification and further refining of the different cases.





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1.3 Interviews

Twenty interviews (13 farmers; 7 other stakeholders) where conducted by three researchers between July 2018 and April 2019, of which thirtheen interviews during the period of November 2018 – February 2019. Most of the stakeholders and some of the farmers were approached directly (purposive sampling) by the researchers by an invitation email and optional follow-up call. Their contact information had been achieved through open access websites or intermediaries (gatekeepers). The farmers of the collapse case, and most of the other farmers were recruited by gatekeepers. An interview outline (Appendix 1) was used as a guide for the researchers to achieve a sufficient amount of consistency between interview content by the three different researchers, without being restricted to the (order of the) topics of the interview outline. For eight out of the thirteen interviews with farmers, the interview outline was combinend and extended with the interview guideline of the SURE-Farm WP2 learning capacity interviews. One interview was the result of solely the learning capacity guideline, as this turned out to contain sufficient information for the policy bottom-up analysis. Table 1 provides more detailed information about the interviews.

1.4 Coding and analysis

All interviews were transcribed ad verbatim and coded using NVivo[®] software. The codebook was the result of an iterative analysis approach. First, two researchers of the Belgian SURE-Farm team coded 6 out of 20 interviews, creating a unique preliminary codebook for the case study. This codebook was discussed with the task lead through a skype meeting. Second, a general codebook based on an integrative analysis of all case study specific deductive codebooks, was provided by the task lead to the case-study partners. Thereafter, a third researcher from the Belgian team conducted two inductive coding rounds as described by the task protocol (Candel *et al.* 2018, Buitenhuis *et al.* 2019).

Code frequencies and references were tabulated according to case allocation, as a tool to support further interpretation of different text fragments in order to find out the most important anchoring points of the discussion section of the report. Preliminary results were presented by the lead researcher to the other researchers of the Belgian team during a mid-term meeting to enhance further analysis and as a first preparation step of the stakeholder check.





Case	Code	Respondent type	Date	Researcher
Robustness	R1	Farmer	12.19.2018	Isabeau
	R2	Farmer	12.19.2018	Isabeau
	R3	Farmer	11.22.2018	Jo
	R4	Farmer	01.10.2019	Isabeau
	R5	Advisor dairy - specialized private company	03.01.2019	Isabeau
Adaptability	A1	Farmer	01.07.2019	Eewoud
	A2	Farmer	01.07.2019	Eewoud
	A3	Farmer and chairman of Flemish cooperative for organic dairy	01.10.2019	Eewoud
	A4	Consultant 'conversion to organic dairy farming' - farmers organisation spin-off advisory bureau	03.11.2019	Eewoud
	A5	Farmer	07.12.2018	Isabeau
Transfromability	T1	Advisor - spin-off advisory bureau from farmers organisation	02.12.2019	Eewoud
	Т2	Advisor - government funded specialised 'short chain' organisation	02.20.2019	Eewoud
	Т3	Farmer	03.01.2019	Eewoud
	Τ4	Farmer	03.21.2019	Eewoud
	T5	Farmer	04.03.2019	Eewoud
Collapse	C1	Management agreement planner - Flemish Land Agency	01.07.2019	Isabeau
	C2	Responsible for nature recreation & regional landscape	01.07.2019	Isabeau
	C3	Farmer	01.09.2019	Isabeau
	C4	Farmer	01.09.2019	Isabeau
	C5	Farmer	01.10.2019	Isabeau

Table 1: General information on interview data collection





2 Regional stakeholder check

2.1 Organization of stakeholder check

An invitation (appendix 2) was sent to a group of stakeholders from the Flemish dairy sector. The invitees were allowed to spread this call throughout their network. The stakeholder check took place in Gent, on 17th September 2019. Fourteen stakeholders out of twenty-one registrations eventually showed up and participated in the workshop, forming a diverse group of farming system actors including policy-makers, consultants, representatives from farmers organisations, processors and banks.

The Belgian SURE-Farm research team (KU Leuven and ILVO) formulated 24 specific statements (11 relating to the evaluation of how policies influence the robustness of the sector, 7 relating to the adaptability of the sector, 6 relating to the transformability of the sector), and 6 general statements (relating to the evaluation of how policies influence the overall resilience of the sector). Statements can relate to either specific policy measures, to implementation of policies, or to policy orientation (indicated in section 2.2 with [M], [I] and [O] respectively). The statements are based on the findings from the 20 interviews. Indeed, they are data driven but do not use specific quotes or anecdotes of the interviewed respondents. They are rather an interpretation of the researchers about how policies are influencing the resilience of the Flemish dairy sector, based on what the respondents reported. The use of the specific statements allowed for a validation of how specific policies or particular aspects about policy goals, instruments, conditions and implementation – that had been discussed by interviewees – are influencing the Flemish dairy sector or are interfering with dairy farmers' management approach. Likewise, by presenting some general statements about the role of policy in the dairy farming system, the researchers could check whether their interpretation of the interview results corresponded with the view of the stakeholders.

The essential part of the workshop were two brainwriting rounds during which the participants were strongly encouraged to formulate their own opinion about the statements, and to discuss this based on other participant's opinions and experiences. The validation was arranged based on a derivate from the 635 brainwriting method (Rohrbach 1969). The original method was adapted for this workshop as follows. First, the 14 participants were divided in diverse groups of three to four people; in a way that different types of stakeholders were attending one group. Second, the participants received a sheet with three specific statements and were asked to first evaluate each of the statements individually by writing down whether they agreed with the statement or not, and why. Participants within a group received the same three statements, and although every group received a unique sheet with three statements (no statement was given to two different groups, instead all of the 24 statements were each evaluated only by the stakeholders of one




group), some overlap or complementarity between different statements fostered similar discussions. Next, the participants within each group switched sheets and were asked to again evaluate the same three statements, but this time by further building on the commentary that had been written down by their colleagues. They were thus challenged to either agree with the previous commentary and add further illustration and/or elucidation, or go against the opinion of the former writer by sticking to their first opinion and giving counter arguments on the preceding opinion/description. This process repeated, and a minimum of three of such writing rounds was conducted in each group (as far as time allowed, as many writing rounds as group members were conducted). Thereafter, the moderator of the group (researcher of the Belgian SURE-Farm team) summarized the on-paper discussion for each of the three statements, while asking for further explanation of what was meant and trying to find a consensus about the statement according to the stakeholders. This whole process was performed a second time, with three new statements, so that each of the four groups evaluated six different statements in total. Before closing down the workshop, the five general statements were evaluated through a plenary, more open discussion led by the moderators.

Using statements allowed the researchers to present some interview data 'content' to the stakeholders, because this was necessary for the validation exercise, but without harming the privacy of the interviewees or being based on very specific situations of the interviewees. In addition, the brainwriting format was expected to be a more effective, efficient and interactive way to discuss the results of the interviews and the respective interpretation of the researcher compared to a standard format of presenting the results first, followed by a plenary discussion where more dominant profiles determine the course of the discussion while more reserved and timid persons are less likely to explicitly communicate their opinion.

In the next section, the key discussion points of the stakeholder check are synthesized per statement, by reporting the main argumentations and interesting facts put forward by the stakeholders.





2.2 Summary of the stakeholder check

2.2.1 Specific statements relating to robustness

Protecting status quo

1. Direct payments support the maintanance of the dairy sector in its current form because it provides security and certainty.¹ [M]

It was hard to find a consensus for this statement. The stakeholders rather agreed with the statement, because the income support is for some farmers the fundament to ensure farm survival, especially during 'bad years'. Thereby, some stakeholders stated that the income support is maybe too generous in certain situations, when the payments are actually the only reason that the farm is profitable in the end. On the other hand, some stakeholders had the view that cross-compliance rules are very strict, and that the payments are a necessary compensation for the farmer's contributions towards society (or the administrative burden that comes with it).

2. The agricultural policy is aimed at maintaining the status quo of improving cost-efficiency and scaling, but at the same time it is undermining this through limitating regulations regarding agri-environmental, climate and nature protecting measures. Therefore, neither of these policy goals are sufficiently achieved.² [O]

This group of stakeholders did not really agree with the first part of the statement. They could see the link with the effect of direct payments on individual dairy farmers, but on the farming system's level, their view is more that policies are not focusing enough on stimulating cost efficiency. Contrary to the opinion of some interviewees, stakeholder participants did not agree that the CAP is only aiming at scale enlargement facilitation. They said it used to be this way, but that the direction of policy goals has changed significantly during the last decade. Some even consider it possible that farmers are stimulated to diversify their farm. Concerning the second part of the statement, the stakeholders did agree that there are some contradictions between different policy domains, and that they are indeed not coherent. As a conclusion, the participants agreed that the CAP should align better with the market, follow its trends, and support these in a strategic way.



¹ De bedrijfstoeslag ondersteunt de continuïteit van de melkveehouderijsector in zijn huidige vorm omdat die bescherming en zekerheid biedt

² Het landbouwbeleid is er enerzijds op gericht de status quo van kosten-efficiëntie verbetering en schaalvergroting te handhaven, maar ondermijnt dit anderzijds met beperkende regelgeving rond milieu- en natuurbescherming. Hierdoor bereikt het beleid onvoldoende deze beide doelstellingen



3. A lack of attention for diverse types of agricultural models and the importance of entrepreneurial capacities in education are not stimulating the implementation of atypical business models.³ [O]

The stakeholders rather agreed with the statement. They notice that this issue does not apply only to the dairy sector. They added that all types of farming models, despite their prevalence, should be given attention in agricultural education programmes. Farmers, as entrepreneurs, should in the end be able to decide on their farm strategy based on a comprehensive knowledge on farming models, that was teached in an objective way during their education.

4. A lack of knowledge and acknowledgement of diverse farming models among public advisors is not stimulating the implementation of atypical business models.⁴ [O]

The stakeholders did not agree that there is a lack of knowledge about diverse farming styles, but they did agree that the acknowledgment of more alternative farming models is lacking. However, they do not think that it is the role of the government to stimulate alternative farming practices or business models. Perhaps it has to support the raising of awareness about it. In addition, they did agree that there is a more general shortage of feeling with and knowledge about the sector among policy-makers, and that there is room for improvement here. Moreover, the government should make this an agenda point to prevent having a restrictive role in the long term. The most important precondition for qualitative education is the occurrence of independent, well-informed teachers.

5. Through management agreements and agri-environmental schemes the policy is helping the dairy farmers to maintain doing what they are doing on the one hand, yet to take into account new societal expectations on the other hand.⁵ [M]

The participants confirmed that these are indeed effective instruments for both achieving a proper income for farmers and for finding a better balance between agricultural production and the maintenance of natural resources. However, they agreed that there is still room for improvement. The current agri-environmental measures illustrate that the focus still lies with the ecological aspects which are only part of the broader sustainability goals that the sector is confronted with. Thus, the participants suggested that the scope of the policy measures could be



³ Een gebrek aan aandacht voor diverse types landbouwmodellen en het belang van ondernemerscapaciteiten in het onderwijs stimuleert de implementatie van atypische bedrijfsmodellen in de praktijk niet

⁴ Een tekort aan kennis en erkenning van diverse vormen van landbouw bij publieke adviesverleners stimuleert de implementatie van atypische bedrijfsmodellen in de praktijk niet

⁵ Dankzij beheersovereenkomsten en agromilieumaatregelen helpt de overheid de melkveehouderij om enerzijds te blijven doordoen zoals ze bezig zijn, maar anderzijds toch rekening te houden met nieuwe maatschappelijke verwachtingen



further broadened, for example by creating more diverse agri-environmental measures, or by creating more awareness among consumers about the dairy farming system and how they can contribute towards a more sustainable food system. On the other hand, the participants realized that farmers are currently overwhelmed by the diversity of policy measures they can apply for. Especially the complexity in the policy structure and a lack of overview still forms a barrier for widespread and effective implementation. They strongly agreed that farmers need more support and supervision to enable implementation. Another aspect that was emphasized by the participants is the crucial importance of the voluntarity-based application of a set of measures. Last, they questioned the potency of the government in enabling farmers to reach higher societal appreciation: how can policy-makers create effective stimuli for the farmers to adapt to changing societal demands while they are limited by a decreasing budget?

6. By abolishing the dairy quota, policy has given dairy farmers the chance to grow which is a good strategy to maintain competitiveness.⁶ [M]

The participants agreed that the abolishment of the quotum system has given more freedom to Flemish dairy farmers, allowing them to make well-thought investments. To the second part of the statement, they disagreed, as they point out that diversification is an equally valuable strategy. On farming system level, a diversity of farms is a good attribute for resilience, and thus they argue that the market should guide the composition of the farm business population.

Buffer resources

7. Seasonal tenure hampers good soil practices and management to maintain agricultural quality of this natural resource. High soil quality, being a natural buffer for poor production years, is thereby jeopardized.⁷ [M]

No consensus was reached for this statement. Whereas two out of three participants in the group discussing this statement disagreed, one of them sticked with his opinion that the lack of land certainty is causing misconduct and that legislation on tenure should stimulate more the long-term availability of agricultural land for genuine, active farmers. The others found that the Flemish land tenure policy is already very strict, thus preventing misconduct of agricultural land.

⁷ Seizoenspacht ondergraaft het goede beheer van de bodem als natuurlijke hulpbron voor de landbouw. Hoge bodemkwaliteit als natuurlijke buffer voor slechte productiejaren komt daarmee in het gedrang



⁶ Met de afschaffing van het quotumsysteem gaven beleidsmakers melkveehouders de kans om te kunnen groeien, wat een goede strategie is om competitief te blijven op de markt



Short-term focus

8. The government is not stimulating maximial land availability for active farmers through the current land tenure legislation.⁸ [M]

The stakeholders agreed with this statement. Policies should aim at keeping agricultural land as much as possible available for active, genuine farmers, which also implies that the definition of 'active farmers' should be rethought. Currently, 'farmers' who are actually retired and not farming their land themselves anymore are protected by the tenure legislation. As a result, direct payments, that are aimed at supporting 'real' farmers, are nowadays also benefitting non-active farmers. The stakeholders acknowledged that discrimination based on age is unacceptable, but that the problem should be considered as policy-makers want to support young farmers by providing them land. It should be noted here that later during the workshop, when the plenary discussion about the general statements took place, this discussion about 'retirement farmers' arose again and a stakeholder from another group strongly disagreed with the statement that the Flemish government is not trying to deal with this issue. A government representative explained that it is very hard to intervene with this region-specific issue without violating European rules.

9. Intervention measures are not stimulating dairy farmers to flexibly react on changing circumstances and increasing uncertainty.⁹ [M]

The stakeholders did agree that intervention measures are not contributing to a more long-term, structural solution for the price volatility challenge. In addition, they believe the effect of this measure on the dairy farming system is rather small, and therefore not the best way to spend public money. However, they disapproved the statement, because they had the view that it is unfair to evaluate these measures on their effect on resilience, because they serve as a last resort and are only implemented if extreme calamities need to be neutralized. They concluded that policy makers should indeed focus on other, more effective methods to enable farmers to increase their buffering power, but that the measure should not be abolished to prevent socio-economic disasters.



⁸ Met de huidige pachtwet stimuleert de overheid niet dat landbouwareaal zo veel mogelijk ter beschikking van actieve landbouwers blijft

⁹ Interventiemaatregelen stimuleren melkveehouders niet om op een flexibele manier te reageren op veranderende omstandigheden en toenemende onzekerheid



Risk management

10. Land consolidation is currently insufficiently organized by the Flemish government to increase large-scale agricultural land use efficiency.¹⁰ [I]

The degree of agreement was somewhat ambiguous. It was stated that it would benefit farmers to organize land consolidation to improve the efficiency of agricultural practices, knowing that the fragmentation of land is extremely high in Flanders compared to other European regions. However, the respondents expressed their fear that such an intervention would benefit land for nature purposes substantially more compared to benefitting farmers. So farmers should be actively involved in the dialogue about this suggestion.

11. The intervention measures of the dairy market safety net (voluntary milk production reduction and the isolation from the market in case of an alarming price by purchasing milk powder and butter) are effective in making dairy farmers robust against extreme price calamities.¹¹ [M]

The participants did not really agree with this statement. Such interventions might have some effect in the short-term, but it should be a last option as it might be spreading the negative effect throughout time in stead of providing a real solution. They concluded that such measures should only be applied in exceptional price crises.

2.2.2 Specific statements relating to adaptability

Flexibility

12. Cross-compliance (for direct payment and management agreements) on the hand, and the implementation and execution of policy measures like the legislation on manure use on the other hand, are insufficiently flexible. As a result, dairy farmers do not have room for manouvre to react on changing circumstances.¹² [M]

The stakeholders agreed with this statement, confirming that the flexibility regarding both the implementation of policy measures and the way compliance with policies is controlled, is currently too low. They suggest a more farm-specific approach; that policy-makers allow for different applications of the policy measures across farms, but that this is accompanied by strict tailor-



¹⁰ Ruilverkaveling wordt nog in te beperkte mate gestuurd door de overheid om efficiëntie van landbouwgrondgebruik op grote schaal te kunnen verhogen

¹¹ De interventiemaatregelen (vrijwillige productiebeperking en het uit de markt nemen bij een interventieprijs) zijn effectieve maatregelen om melkveehouders robuust te maken tegen extreme prijscalamiteiten

¹² Doordat de randvoorwaarden verbonden aan enerzijds steun (bijvoorbeeld beheersovereenkomsten en bedrijfstoeslag) en anderzijds de uitvoering van beleidsmaatregelen (bijvoorbeeld het mestbeleid) zeer weinig flexibel zijn, hebben de melkveehouders geen manoeuvreerruimte om te reageren op gewijzigde omstandigheden



made controls. During the plenary session of the workshop, a participant argued that there are limitation to the variety of the policy framework, which will be discussed further in section 3.5.2.

13. The financial support for agri-environmental measures and the cross-compliance regarding direct payments (greening measures) are useful instruments to help dairy farmers to adapt to sustainable farming practices.¹³ [M]

The stakeholders agreed with this statement. It was not clear to the stakeholders whether the compensation that farmers receive for their contribution towards the protection of public goods is sufficient. Some of them suggested to further develop the agri-environmental measures of the Flemish Department of Agriculture and Fisheries and the management agreements of the Flemish Land Agency, by creating new measures for protecting biodiversity and nature preservation. These measures can show the contribution made by the agricultural sector, for example to counter negative attention for the sector in the media.

Variety and tailor-made responses

14. The cross-compliance rules regarding managemant agreements and the direct payments, and the implementation of some policy measures (such as manure legislation) insufficiently acknowledge the diversity of farm types and farm situations. As a result, resulting in a bias towards favouring certain farm types over others.¹⁴ [I]

The stakeholders did agree that different policies are fragmented, incoherent and that some policies contradict each other. The complexity of the general policy framework sometimes hampers the practicability. They think that better knowledge of and feeling with the sector among policy-makers would enable the connectivity with the sector, and thus could potentially allow them to design policy that is more convenient and feasible for farmers. On the other hand, they agreed that there is more than sufficient variety (think of the conservation goals) so that each farmer can apply for those policy instruments that fits his/her specific farm situation best. Overall, they disagreed with the statement, because the policy framework is very diverse and comprehensive. Besides, they think that policy instruments should after all incentivize farmers to adapt to changing circumstances.



¹³ De financiële steun voor agromilieumaatregelen en de randvoorwaarden verbonden aan de bedrijfstoeslag (bijvoorbeeld vergroeningsmaatregelen) zijn nuttige instrumenten om melkveehouders te helpen om zich aan te passen naar duurzame landbouwpraktijken

¹⁴ Doordat de randvoorwaarden verbonden aan steun (bijvoorbeeld beheersovereenkomsten en bedrijfstoeslag) en de implementatie van beleidsmaatregelen (bijvoorbeeld het mestbeleid) onvoldoende rekening houden met de diversiteit aan bedrijfstypes en bedrijfssituaties, krijgen bepaalde bedrijfstypes een concurrentieel nadeel ten opzichte van andere



15. The cross-compliance rules regarding the VLIF investment and installation support insufficiently acknowledge the diversity of farm types and farm situations, resulting in a bias towards favouring certain farm types over others.¹⁵ [I]

This statement substantially resembles the previous one. With the previous statement, we aimed at validating the statement while mainly focussing on policies that farmers are obliged to work conform with, whereas this statement only focusses on the VLIF investment support, for which farmers can optionally apply. The latter was a more frequently discussed separately by respondents compared to the firs to (by naming in particul need , although e stakeholders rather not agreed with this statement. First of all, they noticed that this policy instrument is sufficiently flexible and diverse to support many different types of farms in making sustainable and resilient investments. They asked for more explanation on the statement. After elucidating with some themes from the interview data, they did add that perhaps farmers should be supported more in the practical side of the instrument's application and that the awareness about the possibilities of this instrument could be improved. They agreed that more tailor-made approaches might be good in specific situations, but they argued that other measures exists for those farms that cannot rely on investment support for material assets.

16. The VLIF investment support system is an effective instrument in supporting the dairy farming sector to adapt farm business management and farm operations to changing circumstances.¹⁶ [M]

The participants agreed with this statement, although they added some nuance. They explained that this tool supports individual farms to adapt their farm management to changing societal context and consumer demands. At farming system level, the tool enables new innovative technologies to enter the sector and thereby it helps increasing the general sustainability of the sector. However, this instrument should be accompanied by other measures, that focus for example on supporting producer organisations to provide incentives for increasing sustainability and resiliency of the sector throughout the whole chain. Furthermore, they believe that a higher flexibility in the cross-compliance conditions is likely to improve future implementation.



¹⁵ Doordat de voorwaarden verbonden aan steun (VLIF investeringssteun of VLIF overnamesteun) onvoldoende rekening houden met de diversiteit aan bedrijfstypes en bedrijfssituaties, krijgen bepaalde bedrijfstypes een concurrentieel nadeel ten opzichte van andere

¹⁶ De VLIF-investeringssteun is een effectief instrument om de melkveehouderij te ondersteunen om de bedrijfsvoering aan te passen in de context van wijzigende omstandigheden



Middle-term focus

17. The European determination of which activities are agricultural and which are not, is outdated and therefor restraining processes of innovative diversification.¹⁷ [M]

The stakeholders disagreed with this statement. They add that the Flemish spatial planning regulation is hindering larger barrier for diversification of dairy farms. More specifically, the condition that at least 50 % of a firm's income must be derived from agricultural activities in order for it to be recognised as an agricultural firm was named as a limitation, confirming the information from the interviews. The discussion quickly shifted towards a more technical discussion on the leakage of farmer-targeted subsidies to other actors.

Social learing

18. Local governments like municipalities and provinces develop many facilitating and stimulating (project)activities that support the dairy farming system to adapt farm business management to changed circumstances.¹⁸ [M]

The stakeholders agreed that local governments have the capacity to stimulate a good adaptation of dairy farms to local/regional (changing) circumstances. They especially interfere with farmers' possibilities to develop their farm through the permit policy. However, the participants remarked that the current performance of local governments in supporting local farmers to increase their resiliency strongly varies across different regions in Flanders. Further, they notice that applying a region-specific approach without loosing too much coherency with higher policy levels is not straightforward. A good balance is necessary to value the impact on the sector in its whole.

2.2.3 Specific statements relating to transformability

Dismantling status quo

19. Direct payments are disincentivizing greater business management creativity of farmers.¹⁹ [M]

The participants partly agree with the statement. They refine it by stating that direct payments, despite greening measures, not necessarily disencourage alternative strategies, but definitely not stimulate them either. They explain that the main aim of pillar 1 is to support farmers' income, while pillar 2 measurements are generally more efficient in guiding farmers towards farming



¹⁷ De Europese lijst die bepaalt welke activiteiten onder en buiten landbouw vallen is gedateerd, wat een rem zet op innovatieve diversificatie

¹⁸ Lokale overheden zoals gemeentes en provincies ontplooien veel faciliterende en stimulerende (project)activiteiten die de melkveehouderij goed helpt om hun bedrijfsvoering aan te passen aan gewijzigde omstandigheden.

¹⁹ Door de bedrijfstoeslag ontmoedigt het beleid een grotere creativiteit van bedrijfsleiders in hun bedrijfsmanagement



practices that are better adapted to changing circumstances. They share the view that the government should more and more shift the focus/weight towards pillar 2 measurements.

20. VLIF investment and innovation support are policy measurements that are not effectively supporting the dairy farming system to implement radically new farm business management approaches.²⁰ [M]

The stakeholders agreed that the policy is not sufficiently supporting farmers who want to implement innovative solutions on their farm. They assume there is some sort of gap in the policy between the Pillar 2 support to investments in material assets on the one hand, and the 'support for innovative projects in agriculture' on the other hand. Whereas the first measure provides only support to investments that are not innovative enough to really realize radical changes, the latter is, according to the stakeholders' experiences, in practice only benefitting project-based initiatives. In other words, innovative investments by individual farmers might end up in a grey zone between those two policy measures. Besides, it is not clear whether the first measure is properly selecting innovative investments over less innovative ones for support. However, the stakeholders did think that the policy is striving to execute its underlying goal through these measures, as they are of the opinion that farmers, as entrepreneurs, should in the end take the risks while the government provides support in order to support innovation in the sector.

Niche innovations

21. Although dairy farmers can request VLIF support for alternative farming practices, the system is not open enough to niche innovations.²¹ [I]

The participants rather agreed with this statement. They substantiate that the 'VLIF' investment support is significantly open for innovations. But in practice, the road towards actual implementation of potential innovations is cumbersome. First, farming system stakholders (e.g. banks) do not have enough knowledge and/or awareness about the possibilities of VLIF. Second, the administrative side of the measure is too complex and complicates the advice. They conclude that the openness of the system is too low especially for pioneers in the sector and for very new/niche technologies.

²⁰ VLIF investeringssteun en de projectsteun voor innovaties zijn beleidsmaatregelen die in de praktijk de melkveehouderij niet effectief genoeg ondersteunen om radicaal nieuwe bedrijfsvoeringen door te voeren ²¹ Hoewel melkveehouders voor een alternatief bedrijfssysteem beroep kunnen doen op VLIF investeringssteun, biedt het systeem in de praktijk niet genoeg openheid voor niche-innovaties





In-depth learning

22. Because the agricultural policy is lagging behind new trends, real pioneers cannot count on governmental support. Thus, they need to capture many risks, while late adopters receive disproportionate governmental support.²² [O]

The stakeholders did not clearly agree nor disagree with this statement. They said nuance is needed. They agree that policies are following up on trends in the sector, but they think this is just a reality and there is no need, nor possibility, to change this. The government does not need to regulate innovations; however, it should create room for experimentation. The stakeholders stated that policy-makers are currently too eager to immediately create a whole policy framework when innovations are about to enter the sector. They agreed that it would be better for the farming system's resilience if a legislative framework is only being developed after pioneers had some time and 'freedom' to experiment and benefit the first position in the market. With regard to the second part, the stakeholders rather disagreed, stating that specific funding channels to foster innovations are available. However, they did think that the awareness among farmers about the existence of these channels is potentially insufficient for stimulating the uptake.

Long-term focus

23. Current legislation is lacking a certain long-term continuity, which is disencouraging entrepreneurial spirit (you need to know what you sign up for before developing a plan).²³ [O]

The respondents agreed to the statement and explained that this has mainly to do with other than agricultural policies: permits, spatial planning, destination of agriculture in the rural landscape, etc. They also remarked that a lot of additional demands are the result of private norms of for example supermarkets. It is especially the relationship between different policies that is creating this perception of low long-term political vision among farmers. One participant suggests that mutual fine-tuning and complementarity between different regulations is of primary importance.

24. The government sufficiently insures succession and generational renewal in the dairy farm sector through VLIF installation support and the young farmer payments.²⁴ [M]



²² Het landbouwbeleid loopt achter op nieuwe trends in de sector, waardoor echte pioneers niet op overheidssteun kunnen rekenen en veel risico moeten dragen, terwijl late adopters dan verhoudingsgewijs te veel steun krijgen

²³ Een bepaalde continuïteit op de lange termijn ontbreekt in de huidige wetgeving, waardoor ondernemingsinitiatief ontmoedigd wordt (je moet met zekerheid kunnen weten waar je aan toe bent alvorens je een plan kan uitwerken)
²⁴ Het beleid waarborgt de opvolging in de melkveehouderijsector via VLIF overnamesteun en de premie voor jonge landbouwers goed



After some discussion, the participants rather disagreed to this statement. First, they notice that it is hard to state whether the current support for young farmers and the firm establishment support are sufficient for safeguarding enough farm succession at the system level. Second, they doubt whether the financial support has co-evolved with the e.g. input cost increasings. To effectively support young farmers, the participants suggest other parts of the policy to provide more attention to be in favour of young farmers. The development of a "land bank", with the French system as an example, would be a good step in assuring young farmers' accessto land, perhaps the most crucial farming asset in the Flemish context.

2.2.4 General statements relating to overall resilience

<u>General statement 1</u>: In the policy implementation phase, a too controlling role (instead of a facilitating role) is being executed. Moreover, a too narrow checklist approach is used, that is not approaching the farm in its whole and as a specific system. This characteristic is not stimulating adaptative capacity, let alone transformative capacity.²⁵

Most stakeholders agreed that the audit/checklist-based way in which some inspectors communicate with farmers about their practices and about meeting standards is denigrating. The presence of such inspectors is largely shaping the general image that farmers have on the government. Also, the consequences of not meeting one aspect of the checklist are direct and irreversible (loss of farm subsidy amount, direct judicial follow-up). The stakeholders substantiate this statement by confirming that a more general assessment and moderation by inspectors is currently lacking. On the other hand, other stakeholders explained that those checklists are imposed by the European control system, to guarantee an objective assessment that is consistent on each farm (to safeguard the destination of agricultural funding to agricultural purposes). Result-oriented working is after all something that society expects more and more: the government must be able to prove that support has been spent correctly

It was decided that uniformity imposed by checklists is fostering fairness, objectivity and consistency, but that (1) the role of inspectors should be more supportive (f.e. that farmers first receive a warning and guidelines on how act on their negative assessment) and that (2) some



²⁵ Bij de beleidsuitvoering wordt te veel een controlerende rol aangenomen (in plaats van een faciliterende). In die controlerende rol hanteert men bovendien teveel een checklistaanpak en een aanpak die te weinig naar het geheel en de specifieke bedrijfssituatie kijkt. Dit kenmerk is niet stimulerend voor adapteerbaarheid en zeker niet voor transformeerbaarheid.



amount of customization would be good in order to create more variety, for example that the government draws up a farm typology and works out rules tailored to that typology.

<u>General statement 2</u>: The government is too much following the developments in the dairy sector and takes up a monitoring/supervisory role in order to support the dairy farming system in Flanders. However, the government should take up a more guiding role and provide vision regarding the future direction to which the system should aim. This characteristic confirms the status quo and hinders the adaptability and transformability.²⁶

The group didn't agree that the Flemish government solely observes, instead, they think policy makers organize sufficient consultation with many stakeholders from the agri-food chain. Someone noticed that Flanders has a very participatory governance model, especially compared to other European regions. Some participants were even of the opinion that some policy instruments are too much steering towards scale enlargement because mechanization in the dairy sector is strongly subsidized, thus this strategy is being promoted by the government.

<u>General statement 3</u>: There is a lack of overarching cooperation and harmonization across policy domains and levels. This creates an administrative nuisance and conduces to some kind of standstill in the sector, because different policy measures and instruments neutralize each other. This characteristic is not stimulating adaptative capacity, let alone transformative capacity.²⁷

This statement was skipped during the plenary discussion because of lack of time and visible fatigue among the workshop participants.

<u>General statement 4</u>: Although there are specific instruments available that support individual farmers for transformations in their farm business management, this has only limited implications for the dairy farming system in its whole. This is because the general spirit of the policy is not stimulated, and because there are too many measures that favour the status-quo. This characteristic hampers transformability.²⁸



²⁶ De overheid volgt te veel de ontwikkelingen in de melkveehouderij en speelt hier dan een toezichthoudende rol in die de melkveehouderij zo goed mogelijk probeert te helpen. Ze zou echter een meer sturende rol moeten hanteren op het vlak van welke richting de melkveehouderij uit moet. Dit kenmerk bevestigt het status-quo en belemmert de adapteerbaarheid en zeker de transformeerbaarheid.

²⁷ Er is ontbrekende overkoepelende samenwerking en harmonisering tussen de verschillende beleidsdomeinen en – niveau's. Dit creëert administratieve overlast, en zorgt vooral voor een soort standstill in de sector, omdat verschillende beleidsmaatregelen en –instrumenten elkaar opheffen. Dit kenmerk is niet stimulerend voor adapteerbaarheid en zeker niet voor transformeerbaarheid.

²⁸ Hoewel er wel degelijk specifieke instrumenten zijn die individuele landbouwers kunnen ondersteunen voor transformaties van hun bedrijfsvoering, heeft dit voor de melkveehouderij in zijn geheel weinig effect. Dit komt omdat in de algemene geest van het beleid dit niet gestimuleerd wordt, en er te veel maatregelen zijn die de status-quo bevoordelen. Dit kenmerk belemmert de transformeerbaarheid.



The discussion that followed was not exactly focusing on this statement. There was a short notice about means for innovative projects being available, but currently not invoked by farmers; possibly because the procedure to apply for this budget is demanding (the applicant needs to defend the quality of the proposed project) and time-consuming, and there is no guarantee for the applicant that the proposed project will be approved for receiving governmental funding.

<u>General statement 5</u>: Generally, policy measures and –instruments are still too much aimed at the individual farmer, and there is insufficient attention for collective approaches (both horizontal, vertical and across different expertise domains). This characteristic is present in many instruments, among which support for investments and support for risk management and support for the installation of learning networks). This characteristic is not stimulating any of the three resilience capacities.²⁹

The group didn't fully agree, stating that there is more and more support for both horizontal and vertical cooperation.

<u>General statement 6</u>: Is it possible for the policy to support all three dimensions (resilience capacities?) at the same time? Or does the stimulation of one implies the restriction of one of the other capacities?³⁰

The short-term focus was recognized as a general characteristic of the policy that is not stimulating long-term adaptations and transformations. (Co)financing is now mainly happening for short-term initiatives, and more manoeuvre for long-term adaptations and transformations should be created in a collective way. A positive note here is that region specific approaches are already emerging and showing to be effective, but more of this type of initiatives should be stimulated by the government.

2.3 Integration of stakeholder check

This section provided a discussion on the stakeholder workshop results, while the next chapter mainly focusses on reporting interview results (3.1, 3.2, 3.3, 3.4) except when explicitly mentioned that it also contains workshop findings. From section 3.5 (overall results) on, a comprehensive discussion is build, based on the researchers' interpretations on all available data, highlighting similarities and contradictions between the interviewee sample data and workshop data.



²⁹ In het algemeen richten beleidsmaatregelen en –instrumenten zich nog teveel op de individuele landbouwer, en is er te weinig aandacht voor collectieve aanpakken (zowel horizontaal, verticaal als over verschillende expertise). Dit zit doorheen veel instrumenten, van steun voor investeringen, over steun voor risicobeheer tot steun voor advisering en het opzetten van leernetwerken. Dit kenmerk is niet stimulerend voor elke vorm van weerbaarheid.

³⁰ Is het mogelijk voor het beleid om de 3 dimensies tegelijkertijd te ondersteunen? Of is het ondersteunen van 1 ervan gelijk aan het beperken van een andere capaciteit?



3 Synthesis

3.1 Challenges

In this section, the main risks and developments indicated by our interviewees to affect the Flemish dairy farming system (currently and expected in the future) are reported. Topics that were more abundantly discussed during the interviews (based on (1) the number of sources; i.e. respondents mentioning the topic during the interview and (2) the number of references; i.e. fragments that were coded under this topic) are discussed first. Those "major codes" are often linked with "minor codes" that are less abundantly discussed in the interviews, but do contribute to understanding the challenges that Flemish dairy farmers are confronted with by providing additional or more detailed information. Codes with less than four respondents are ignored in this discussion – unless they clearly contribute to explaining a broader challenge.

Upscaling and intensification (S:17, R:27)

Many Flemish dairy farms have increased their farm size during the last decades. From our data, it is clear that many farmers have the perception that achieving a minimum farm size (i.e. a minimum number of cows) is necessary in order to survive. Stakeholders tend to interpret upscaling as a strategy to enhance the robustness capacity of the farm. However, many respondents also enlightened the downside of this strategy. First of all, upscaling is often accompanied by the switch towards a robotized milking system. Some respondents indicate that such systems do not work out on certain farms, depending on multiple correlating factors such as the brand of the robot and the adaptive capacity of the cows to get used to a new way of milking. Second, upscaling requires investments that induce an increased amount of debts combined with increased workload. Third, increasing the number of cows demands an increased access to feed. As land availability for farmers is scarce in Flanders (as will be elaborated further), this strategy may weaken the position of the farmer in the food chain as he becomes more dependent on other farming system actors to provide feed for his herd. Fourth, respondents from the collapse, adaptability and transformability cases emphasized that the societal negative vision on large stables, as pollutors of the landscape, cause additional social pressure on farmers. Some of them are strongly convinced that this trend further hampers the societal image on farming, therefore they argue why they have chosen another farming strategy. A last challenge that was associated with upscaling and intensification of dairy farms the questioning whether the traditional family farming model maintains compatible with increasing farm sizes. Continuous scale enlargement has been the trend for the last 40 years, but currently, further enlargement implies the need for hiring external (non-family) labour to be able to get the work done. Being dependent on external labour force means additional costs and uncertainty, as the risk of no-show events might have severe consequences. As such, this dependency goes straight against a major strength of the





family farming model: the provision of cheap and flexible labour. While discussion this issue, one respondent literally spoke of a *tipping point* in the capacity of the traditional family farming model. This problem will be further elaborated in the section '*Workload & implications for personal health and well-being*'. Many respondents agree that working with staff is not self-evident on a family farm. Moreover, it is expensive and requires intense interpersonal communication and management skills. One respondent explicitly stated that Flemish dairy farmers who have scaled up might have underestimated or misjudged the implications of working with external (non-family) labour. Some respondents from the collapse, adaptability and transformability cases had a strong opinion that such farm organizational model does not fit the Flemish dairy sector, and that the family model should maintain the character of Flemish dairy farms. They therefore adopted other strategies to make sure that the farm work can be mostly done by one or two full-time labour forces.

The research team itself, through previous projects and studies, also thinks that this scale enlargement and intensification brings forward another challenge, namely that of increasing dependence on export markets, export market that are themselves often investing to increase domestic production in order to become less dependent on imports. The scale enlargement that is currently happening in Flanders is not neutral in the sense that total production also substantially increased (with up to 30% in the last couple of years). This can make the farming system vulnerable, as it relies on the ability of the processing sector to sell the derived dairy products on international markets (as Flanders itself has reached more than self-sufficiency) with an added value that leaves enough room to pay farmers a good price. However, until now, most farming stakeholders themselves do not recognize this as a challenge.

Farm succession (S:17, R:32)

It should be noted that this topic is one of the few with a similar distribution across the sources; in other words, respondents belonging to all four cases are more or less equally mentioning this challenge. It is ovbious that farmers talked about how to arrange the succession on their own farm, and practical challenges they face(d), but above that, both farmers and other stakeholders think about succession challenges on farming system level. They expect farm demographics to continue changing as a result of young people not being motivated anymore to farm and the automation and technology trends in the agricultural sector. Farmers from the collapse case explicitly link the lack of succession on farming system level with the political pressure for conservation of natural resources in the area. They feel that farmers in their area are more constraint and that lack of expansion opportunities impacts the farm succession decision.





Supply agreements & contracts (S:15, R:38)

It should be noted that these challenges are much more discussed by respondents from the adaptability and transformability cases compared to those from the robustness and collapse cases. While explaining that the low milk price was an incentive for looking for more direct buyers (to strengthen their position in the agri-food chain by increasing their independency), or was an incentive for converting to organic farming or diversifying the farm with non-agricultural activities, in order to have better control on their price, they also tell stories that illustrate a fragile position of farmers in the agri-food chain and/or that shed light on the negative effects of specific supply agreements. For example, the conditions for joining a cooperation sometimes disadvantage farmers who mainly sell their products via their on-farm selling point.

Changing image of and societal appreciation for agriculture (S:15, R:29)

Respondents strongly agreed that frequent negative portrayal of the agricultural sector in the media during the last couple of years has affected farmers' job satisfaction. They tend to agree that consumers are more and more unaware of the challenges that farmers have to deal with. With the share of farmers becoming smaller and smaller in the population, farmers have the perception that they are rather not being heard, understood, and/or appreciated anymore by society. Some also claim that consumers will not notice how important farmers are as long as an abundancy of food choices in the supermarkets is a standard that is being taken for granted. This lack of awareness and acknowledgement is typically linked to citizens that live in the city, while the rural population is perceived to be more aware of the role of farmers in the rural community. Respondents think that a diminishing public support especially poses a threat for large dairy farms where cows are not pastured. Respondents frequently used the word "distance" to assign the figurative increasing gap between the consumer and producer.

This theme somewhat overlaps with another theme from our coding tree: *Changing consumer demands (S:8, R:11).* The two fragments below illustrate how farmers and stakeholders are progressively attentive to the potency of vegetarian and vegan groups to drive a decreasing demand for milk products, as they have already triggered an increased importance of animal welfare in the dairy production system. One respondent from the adaptability case argued that the vegan consumption trend is especially threatening the organic dairy sector because consumers who already buy organic milk typically belong to a consumer segment that is sensitive to ethical topics and thus more prone to switch towards a vegan diet.





Collapse 3: "And all against agriculture, (..), we are blamed for everything, you would be ashamed to be a farmer in the community."³¹

Transformability 2: "Those vegans are the new vegetarians, the trend we have seen during the last 10 to 5 years, it will be the same for vegan in the next 5 to 10 years and then they will also critizise milk production. That implies that you need to have a more balanced picture than only saying 'we are a robust farm, we produce a lot of liters per cow (...) and we work extremely cost efficient, but their reference frame is not one of cost efficiency, their reference frame is one on animal welfare, on climate and then your cost efficiency story is actually a red blanket on a bull."³²

Land acquisition, availability, prices and competition for land (S:14, R:30)

The high degree of urbanization in Flanders combined with a strong fragmentation of agricultural land lead to extremely high land prices and a high pressure on land availability compared to other European regions. Besides, it is hard for them to compete on the land market with nature organisations or private investers. Every year, a small percentage of land in agricultural use is being acquired by private residents with no intention to rent out the land to remaining farmers. Respondents reported that Flemish farmers are not eager to invest in land theirselves (especially compared to earlier generations) because of the high prices, but at the same time they are concerned with the amount of land being dismissed for agricultural use. Some respondents notice how this is somewhat in contrast with the ambition of dairy farmers to enlarge the farm scale. Land consolidation was viewed as a possible solution but with some limitations, as soil types and quality of land is also highly variant. Respondents from the adaptability case claim that the land availability issue is even more challenging for organic dairy farmers, as legislations require higher standards and the small share of organic agricultural land compared to non-organic agricultural land diminishes the opportunities for land consolidation or acquiring enough organic feed for their dairy cows. It should be noticed that mainly respondents from the robustness case are talking about this issue.

Income & fair prices (S:14, R:29)

Respondents indicate that, throughout time, the balance between *Input and maintenance prices* (*S:6, R:8*) and the returns for the farmer has shifted. They report that input prices have been rising,



³¹ "En allemaal tegen landbouw, of dat landbouw, van álles krijgen wij de schuld, je zou beschaamd zijn om nog landbouwer te zijn in de gemeenschap."

³² Die veganisten zijn de nieuwe vegetariërs, hetgeen we de afgelopen 10 à 5 jaar hebben gezien, dat gaat binnen de komende 5 à 10 jaar ook op veganistisch vlak en dan gaan ze hun pijlen ook richten op melkproductie. En dan moet je natuurlijk wel een gebalanceerder beeld hebben dan zeggen van, wij zijn een robuust landbouwbedrijf, wij produceren veel liters, wij trekken veel liters uit de koe (...) en wij werken razend kosten efficiënt, maar hun referentiekader is niet kosten efficiënt, hun referentiekader is er één vanuit dierenwelzijn, vanuit klimaat en dan is je kostenefficiëntieverhaal eigenlijk een rode lap op een stier."



while the milk price did not follow. As a result, Flemish dairy farmers are nowadays having trouble to manage a decent profitability on their farm. A lot of them illustrate their perceived unfairness of the low milk price (or the agri-food system as a whole; and the position of the farmer in it) by making comparisons with other occupations. Two respondents link this challenge with the occurrence of psychological problems. Also, price volatilities and increasing quality demands are constantly inducing small shocks to the farming system. Respondents state that the decreasing milk price is in the first place preventing them to build up a financial buffer, in the second place forcing scale enlargement as a main strategy in the sector. The other option is to convert to organic production in order to receive a higher milk price, or diversify the dairy farm; which are both considered as alternative strategies that are not suitable for every farm situation due to specific challenges (*conversion to alternative farming methods* (*S:2, R:2*); *diversification with non-agricultural practices* (*S:8, R:19*)), and to be not compatible with every farmer's character. It should be noticed that mostly respondents belonging to the robustness and the collapse case talked about this challenge.

Lack of agricultural-related knowledge and/or entrepreneurial skills (S:13, R:26)

A critique that a share of our respondents had on the current support system, is that farmers are provided with financial support based on criteria like the number of hectares they farm, or the fact that they are in the farm succession process, without supporting their entrepreneurial skills. Also, a share of the respondents agreed that the current education system is largely focussing on technical aspects of farming, but not paying attention to managerial skills. Similarly, some respondents find that farming system stakeholders (like bankers) are not enough aware of alternative business models. Moreover, atypical farming practices and business models would currently not be being given enough attention from the farming system in general. However, respondents agree that farmers should be entrepreneurs in the first place, open-minded profiles who easily adapt to changing circumstances, but their perception is that the government is not supporting the development of such skills. Some respondents suggest that there is a need for more neutral/independent advisory systems to guide the development of resilient farm businesses.

Workload & implications for personal health and well-being (S:13, R:18)

Respondents view farming as a labour-intensive occupation and not many of them feel like their efforts are being properly remunerated. It seems like increasing quality standards, changing policies and more demanding regulations especially pressurize the perceived high workload even more. Administrative workload especially seems to obstacle the perceived room for manoeuvre. The combination of high workload, low labour flexibility and risk of low remuneration jeopardizes a healthy *balance between family life and farm work (S:9, R:12)*. Many respondents talk about





how the farm negatively affects their personal or family well-being. Some respondents remark that this is also the result of high *personal risk & lack of insurance (S:7, R:11)*, as illustrated by the quote below. It seems like the combination of the classical family-labour model and increasing farm sizes is facing its boundaries.

Transformability 5: *"I think that currently, for many farms and for many families, the pressure is way too high. To give you an example, our family is borrowing two and a half million euros, we have to pay these debts, relying on two people. So, you can see how vulnerable the farm actually is. In fact, this is not logical. It does not exist in any other sector, ventures exist there, (...) so actually it is not logical anymore that all that capital is being borne by one family. ³³*

Environmental and climate impact of agriculture (S:12, R:33)

Farmers tend to feel threatened by nature lobby. Some of our respondents literally named the expansion of nature reserves as a threat. They also feel that the maintenance of nature gets a lot of attention by society through the policies that they are subject to. Erosion was named as a major problem in some regions in Flanders. Also, the problem of excessive nitrate concentration in the water was a recurring theme as farmers are largely limited by manure and fertilizer legislation (see further). Further, *protection and enhancement of biodiversity (S:3, R:4)* and *weather events and climate change (S:4, R:4)* were minor themes belonging to this topic in our sample. From our data, it also seems that there is a large mutual distrust and rivalism between farmers and nature organisations, and that this causes stress to farmers. Some of our respondents cope with this pressure by increasing attention for those themes on their farm, as illustrated by the quote below.

Adaptability 2: "A farm has a bigger function than only produce food. We maintain a landscape, we maintain biodiversity."³⁴

However, other respondents elucidate on an increasing gap between public vision on the role of agriculture and the implications of the on-going modernisation in the sector. One respondent emphasized that the government is partly responsible for a distorted knowledge and vision of consumers and other actors on the farming system.

Collapse 4: "(...) there is a problem between nostalgia and reality."³⁵

³⁵ "(...) er is een probleem tussen nostalgie en realiteit."



³³ "nu denk ik dat de druk op heel veel bedrijven, op heel veel gezinnen veel te hoog ligt. Om u een idee te geven, wij lenen met ons gezin 2 en een half miljoen euro, dat wij hier moeten afbetalen, op 2 mensen. Dus hoe kwetsbaar dat een bedrijf eigenlijk is. Dat is eigenlijk niet logisch. Je hebt dat in geen enkele andere sector, daar zijn dan vennootschappen, (...) De druk op de gezinnen, op die bedrijven wordt veel te groot, dus eigenlijk is dat niet meer logisch dat dat kapitaal op 1 familie gedragen wordt."

³⁴ "Een boerderij heeft een grotere functie dan alleen maar voedsel produceren. We zorgen voor een landschap, we zorgen voor biodiversiteit."



Horizontal collaboration (S:11, R:37)

It should be noticed that no respondent from the robustness case said something relating to this topic. Although there are some examples in our sample from fruitful collaborations, respondents tend to agree that Flemish farmers in general have a more individualistic mentality compared to farmers from other countries. Respondents report that Flemish dairy farmers are not keen to share resources like machinery:

Collapse 5: "To share machinery from other farmers. Unfortunately, that is very difficult. It is a shame, but there is no good mindset for that around here."³⁶

The fragments belonging to the adaptability case are describing why and how organic dairy farmers face specific challenges relating to agricultural land, that are elaborated in section 3.3 (legislation on manure and fertilizers). It is interesting to notice that the issue they describe seems to induce the need for sharing resources with other organic farmers (also from other sectors), thereby stimulating horizontal collaboration.

Relating to this topic, is that the perceived high competitive atmosphere in the agri-food sector is also hindering vertical collaboration initiatives. Respondents acknowledge that more cooperation between different stakeholders from the chain would benefit the farmers' current low bargaining position (*vertical collaboration (and networks) (S:7, R:20)*). The government could potentially play a role in fostering both horizontal and vertical cooperation in the sector.

Changing policies and legislations (S:10, R:25)

Large contradictions were found in our sample concerning this topic. For some regulations, respondents declared more flexibility is needed, for example regulations concerning spatial planning in the context of farm diversification and horeca. For other regulations, for example manure and fertilizer legislation, respondents were frustrated about ongoing and frequent adaptations that are made by policy-makers. Farmers argue that quick adaptation to changing legislation is very demanding and sometimes damaging their farming tactiques. The administrative burden that comes with such changing policies appears to be the greatest obstacle for farmers; as respondents put this in direct relationship to an increased perceived workload (as illustrated by the fragment below). In particular the digitization of administrative obligations is scattered across different policy domains and especially a challenge for older farmers.

Transformability 5: "And every year there are new laws and rules, (...). Less fertilizing, zones that you cannot fertilize with manure, (...), greening measures, (...) but that is always area, that you are



³⁶ "Machines delen van andere landbouwers. Da's jammer genoeg heel moeilijk. Jammer genoeg, he, maar daar is de mentaliteit hier niet voor."



renting or that you have bought at an expensive price, that is not or substandardly profitable. But you need to maintain it. The work increases, but the income actually decreases. That is really something that they need to deal with differently in the future I think. Because otherwise, they will be exterminating a lot of farmers. I am convinced about it, that for many farms it becomes unmanageable. What we also witness a lot by our colleagues, is that one of the two partners takes care of the farm while the other one works outside, relations that collapse because of that. A farmer is always working, and little comes back."³⁷

Although most fragments relate to the negative consequences of frequently changing policies, some fragments point out the importance of a long-term policy framework that creates a stable climate for farmers to invest. In other words, certain policies should not be adapted too frequently. Actually, respondents point out that policy-makers must understand how their decisions can severly impact the farming system. Some specific examples illustrate that incorrect interpretation of altered rules, or disunderstanding by farmers, might have regrettable effects. We suggest that well-thought and profoundly amplified communication about changing policies can be key to ensuring that policy instruments and their implementation pursue the foreseen policy goals.

Robustness 5: "(...) periods of farm growth have always been limited or enabled by policy makers. So, actually, the policy makers are the most important factor. We had a whole period from 1996 till 2006 that everything was locked, the impact from the legislator. The legislator fully determines that. Back then, farms were really not able to develop, and only after they have started to develop. It is something that farmers are not sufficiently aware of; how important the legislator is. And maybe the policy maker himself is nota ware enough, how big his/her impact is. The policy maker, in all laws that he makes, has tot hink thoroughly, what the economic implication on the individual farm is. **So, the mutual feeling should**... should improve."³⁸



³⁷ "En elk jaar zijn er nieuwe wetten en regels, we hebben nu weeral een nieuw mestactieplan dat ook alweer strenger is. Minder bemesten, zones die je niet mag bemesten, langs beken en grachten, vergroeningen, maar dat is wel altijd, want je moet dan zoveel vergroeningsstroken leggen, maar dat is wel allemaal oppervlakte die je duur moet pachten of duur aangekocht hebt, die eigenlijk weinig of niet rendabel is. Maar die je wel moet onderhouden. Het werk vermeerdert, maar het inkomen vermindert eigenlijk. Dat is echt iets waar dat toch denk ik in de toekomst anders moet mee omgegaan worden. Want anders gaan ze nog heel veel boeren uitroeien. Daar ben ik wel van overtuigd, dat dat voor heel veel bedrijven onhoudbaar is. Wat wij ook zien bij veel collega's, één van de 2 partners doet de boerderij en de andere gaat werken, relaties die op de knippen lopen daardoor. Een boer is altijd aan het werken en er komt weinig van terug."

³⁸ "Dat is altijd de periodes van groei van bedrijven is altijd door de wetgever gelimiteerd of losgelaten. Dus eigenlijk is de wetgever de belangrijkste factor. Wij hebben een hele periode gehad van 1996 tot 2006 dat het allemaal op slot zat, de invloed van de wetgever. De wetgever bepaalt dat volledig. En toen konden de bedrijven écht niet ontwikkelen en daarna zijn die beginnen te ontwikkelen. Dat is ook iets waar dat de boeren zich te weinig van bewust zijn vaak, hoe groot dat de invloed van de wetgever is. En misschien beseft de wetgever dat ook te weinig, hoe groot dat haar



Differences in policies between EU Member States or between regions (EU) (S:11, R:20) and policies not adapted to national or regional situation (S:4, R:6) were two important branches of our coding tree, as it contains fragments that reveal some frustrations of Flemish farmers that could be easily adapted by national and local government. The wide variety of different rules in different regions or countries always create some feeling of unfair competition. Respondents feel like Flemish farmers have to operate in a very specific context that often brings them in disadvantage compared to abroad farmers. For instance, many respondents explain that dairy products imported from other European countries form a major concurrence for Flemish farmers, as they are themselves subject to more demanding regulations. Another example illustrates the impact of regional policies: some of our respondents indicated that support for organic dairy farming is much more extensive in Wallonia and this has its impact on the farming system composition and inter-farm diversity of the dairy farming system. Likewise, farmers from the collapse case declared that they have to deal with much more complex administrative work compared to other Flemish farmers; as they are located in an area surrounded by the border with the Netherlands and Wallonia. As part of their parcels are located just across the border, their paper work needs to be divided according to different policy regulations. This situation makes their on-farm administracy largely inefficient and complex. A co-operation between policy-makers across borders to set up a region-specific policy plan, or to simplify or conjoin declaration forms could enable farmers' resilience.

Transformability 1: "There are so many differences between member states in Europe... The meat production in Austria. First, you can still slaughter cattle on a farm. In Belgium, you don't even have to think about it because it is unpayable. Despite it is the same European legislation, but applied in a different way. (...) For example, in Belgium catering settings are not valid broadening farm activities. In the Netherlands, there ar many dairy farms that gain 85% from their income out of diversification, from which 70 or 80 percent is catering. (...) In Belgium, it is not even conceivable."³⁹

A last subtheme, *Lack of mutual trust between farmers and policy-makers (S:7, R:9)*, closely relates to the strictness and rigidity of controlling organisms that has been discussed before. It seems like

³⁹ "En daar heel veel verschillen ziet tussen landstaten in Europa is.... Als ik zie, de vleesverwerking in Oostenrijk [?]. Ten eerste kun je nog altijd runderen slachten op een boerderij. In België moet je daar niet aan denken of is dat onbetaalbaar. Ondanks dat dat dezelfde Europese wetgeving is, maar anders toegepast. (...) maar bijvoorbeeld, je kan in België geen horecatoestanden als verbrede landbouwactiviteit. Ga naar Nederland kijken, daar zijn heel veel melkveebedrijven die vijfentachtig procent van hun inkomen uit de verbreding halen, waar dat zeventig, tachtig procent horeca is. (...) In België niet denkbaar zijn."



invloed is. Dat de wetgever, in alles wat ze aan wetten maakt, moet nadenken, en wat is daar nu de economische implicatie van op het individuele bedrijf. Dus die wederzijdse voeling zou... zou moeten verbeteren."



farmers do not really believe that the government aims to support them, rather they feel like they are being limited by policies.

3.2 Resilience

Generally, respondents view the Flemish dairy farming system to be only moderately adaptable to changing circumstances. For example, they are very dependent on their cooperative or private dairy processor for the sale and marketing of their product. Dairy farmers report to rather feel incapable of coping with the myriad of challenges. Farmers from our sample indicate that they are struggling to keep up with the combination of the various challenges they are confronted with. Together with the frequently changing policies and many regulations becoming stricter, farmers have the feeling that they have less and less room for manoeuvre. While explaining these pressures and the high workload, respondents report that some farming families decide to quit. Regarding personal risk & lack of insurance (see 3.1 challenges), some stakeholders emphasized that awaraness of the importance of insurance needs to be raised among farmers. Respondents view farmers' adaptability to intertwining multiple challenges to be partly depending on age, as they perceive younger farmers to commonly have another mentality compared to older farmers. For example, they are better able to keep up with digitization trends. Another overall strategy that was proposed by respondents is that farmers need to be able to anticipate events, e.g. by building a large stable that prospects future enlargement at once when renovating, implementing climate adaptation techniques on their farm.

Overall, it seems like three main strategies are applied by Flemish dairy farms in order to cope with diverse challenges. First, some respondents argue that upscaling of the dairy farm (mainly in terms of total number of producing animals) is the best way to increase income. Increasing cost efficiency of production is a strategy typically related to upscaling. The underlying reasoning is mainly the following: it has been the ongoing trend of the last decades; therefore, I must apply this strategy in order to guarantee the long-term survival of my farm. This strategy is mostly promoted and (implicitly) supported by other actors of the dairy farming system. It should be noted that some respondents linked the choice of this strategy to the presence of a potential successor on the farm.

Other respondents from our sample think that this strategy is currently facing its limits, especially with regard to public acceptance, land availability and environmental policies that restrict the extent to which farmers can exploit cost reduction strategies. Respondents largely agreed that agriculture is putting pressure on the climate, and that it remains hard to find a balance between ecologically responsible and economically reasonable farm management. Some of them indicate that some farmers negatively impact the image of farming by applying further scale enlargement. They report they try to answer to changing image on farming and societal appreciation by





contributing to an improved societal support for farmers by diversifying their farm with nonagricultural activities, such as education, tourism, an on-farm shop. Other farmers are more focussed on the tension between agricultural production and nature creation and preservation, and they create added value by converting to organic production in order to receive a higher price for milk and to proof that maintaining natural resources and farming are combinable. Whichever of the above major strategies is being chosen by a farm manager, the common thing among our respondents was that they choose it out of persuasion and not only for monetary incentives. For example, they want to answer to farming being negatively portrayed in the media by inviting groups on their farm and telling them the real story of farming. Or, to try to build a bridge between nature and agriculture, organic dairy farmers see themselves as ambassadors to show that there are alternative ways of farming with less impact on the climate. Another reason to diversify their farm was the opinion that the mass production highly efficient system has no future in the context of farming in Flanders. Other farmers state that the milk price should increase, and they argue that one cannot expect every farmer to diversify in order to become more resilient or increase profits.

Robusteness 5: "The function of a dairy farm is creating profitability, and the way through which this profit is achieved is of second importance. That's how an economist thinks of it. But you also need to make sure that your thing is embedded in society and that there is societal support for it. You cannot manage to keep functioning without societal support."⁴⁰

3.3 Policy

3.3.1 Which policies are influencing the farming system?

Legislation on manure and fertilizers

Reducing Nitrate concentrations is crucial to improve water quality, that is currently a major problem in Belgium. There is a direct relationship between the nitrate residue in the ground and nitrate leaching in surface and ground water (VLM 2019). Therefore, the government stimulates farmers to lower nitrate residues in their agricultural land through different measures. Legislation on water quality is thus indirectly influencing Flemish dairy farmers through legislations on manure and fertilizer use, that are carried out by the Flemish Land Agency (VLM). 18 out of 20 respondents talked about how legislation on manure and fertilizers impact farmers. As stated in section 3.1, the manure legislation was stated by some of our respondents to further challenge dairy farmers to increase their profit because it has forced them to implement measures (e.g.

⁴⁰ "Dus wat is de functie van een melkveebedrijf, dat is zorgen dat er rendement is en op welke manier dat dat rendement gehaald wordt, dat is van 2e orde. Zo denkt een economist erover. Maar je moet ook wel zorgen dat uw ding ingebed is in de maatschappij en dat het een draagvlak heeft. Je kunt het niet volhouden om zonder maatschappelijk draagvlak te functioneren."





fertilizer-free buffer strips) or make investments in infrastructure (like manure storage facilities) that are not beneficial for the total farm profitability. According to some of our respondents, this policy has induced farms to change specialisation in some specific farm situations, albeit in combination with other policies or situational conditions. For example, in some counties of Flanders, farm land is typically fragmented into small parcels that belong to different farmers. With measures like the obliged fertilizer-free buffer strip, European policy is lacking tailor made adaptations that take into account the regional farming system context.

The increasing amount of controls on fertilizer use and manure deposition, in combination with controls on food safety and quality, is generally perceived as a good measure by farmers. In their eyes, it has eliminated a lot of 'farming misconduct' on the on hand and it has led to an increased milk quality. They acknowledge the necessity of these controlling organisms in the face of safeguarding quality of natural resources in the farming system in Flanders in the long run. However, at the same time our respondents are critical to the current method of assessing a farm's environmental impact in terms of excessive Nitrogen deposition based on measuring points that are rather pragmatically determined and not designed to assess the separate impact of an individual farm. As a result, some dairy farmers feel like being unfairly sanctioned because the controlling instance is not looking at their farm business in its whole, but only focussing on one aspect.

Farmers indicate they do not want to complain, but still they emphasize that the continuous increasing demands of this policy field creates feelings of frustration and/or resignation among farmers. Farmers declare they need to make investments that are not aimed at improving profit margin but are solely necessary to comply with the law. From their perspective, despite having implemented many alterations to their farm (including large investments) to meet changing manure policies, it is never enough. Some restrictions seem random to farmers, and they do not understand why certain additional rules are imposed. From our data, it seems that more direct and comprehensive communication towards farmers about explaining why new rules are implemented, could lower the moderate to high level of frustrations and/or mitigate the general negative attitude of farmers towards policy.

From the fragments it appears that the most important problem relates to insufficient communication rather than the legislatory content itself. They do not understand how certain limits (amount of manure versus amount of fertilizer that is allowed given certain conditions) are determined and by who. On the one hand, they are insinuating that they would appreciate it if the reasons behind rules of law are better explained so they can understand better the value of the measures. On the other hand, a lot of farmers indicate that the frequent information events are already too long and tedious.





'Green' direct payments (pillar 1) and agri-environmental climate measures (pillar 2)

These policy measurements were discussed by more than half of our respondents. Both farmers and other stakeholders acknowledge the availability of a wide variety of agri-environment schemes and climate payments through which farmers can receive financial compensation in return for efforts they make to benefit the environment. They notice the value of such policy instruments (like the conservation goals) that aim at a preserving natural resources and safeguarding biodiversity. Moreover, they acknowledge the effectiveness of greening schemes and management agreements in steering farmers towards more sustainable practices. Besides, some respondents confirm that the financial compensations are sufficient and remunerating the effort, thus indicating that the policy instrument is benefitting both farmers and the system's reserves and natural resources.

Adaptability 1: "The purpose of that premium [support for the cultivation of papilionaceous flowers] was to raise awareness among farmers, that alternatives exists. (...) So maybe the can shift the support from the government, or the accents that are made. (...) A subsidy usually has the purpose to support certain evolutions."⁴¹

Adaptability 3: "We were already thinking about converting to organic production (...). And we decided in 2006 after the implementation of the cross-compliance from the mid-term review. There were many conditions about erosion. (...) We had some parcels of high erosion risk. Back then, we used to have sugar beet and some small parcels, and you needed to keep strips as fallow land etc. (...) We could absolutely not comply with these requirements and so we decided to get rid of the beet, maize and instead culture clover and grains, this way we didn't had problems with regulations. So, it has been a trigger to do it, thus subsidies can have a steering effect. The conditions from the subsidies have a streering impact."⁴²

However, environmental legislation, and more generally the ongoing tension between the pursuit towards more agricultural production and the conservation of nature reserves, are perceived as a challenge by most respondents. First, farmers report that various environmental measures are regulated by different policy domains, leading to complex administrative burden. Farmers fear

⁴² "Wij hadden al (...) gedacht: we gaan biologisch doen (...) En we hebben die stap gezet in 2006 met die invoering van de randvoorwaarden door de mid-term review. En toen waren er een hele hoop voorwaarden rond erosie. (...) We zaten wel met enkele percelen die heel erosiegevoelig waren. We hadden toen nog suikerbieten en een paar relatief kleine percelen en je moest dan overal een strook laten liggen van zo breed en dit en dit. (...) Dat konden wij hier absoluut niet doen en dan hebben wij gezegd: kom, die bieten weg, die maïs weg en grasklaver en granen, en dan had je geen problemen met die regelgeving. Da's bij ons zo een beetje de trigger geweest om dat te doen, dus subsidies kunnen wel een sturend effect hebben. Allez, de voorwaarden bij de subsidies hebben wel een sturende invloed."



⁴¹ "De bedoeling van die premie [support for the cultivation of papilionaceous flowers] was van terug bewustmaking te maken bij de boeren, het kan anders(...) Dus kunnen ze misschien de steun van overheidswege, de accenten, ergens anders leagen. (...) Een premie heeft altijd toch meestal de bedoeling om een bepaalde evolutie te ondersteunen."



that this complexity will only increase in the future, pressurizing the high workload they are already faced with, and risking the need for external administrative support services. Second, the conditions for receiving the funds and the controlling mechanisms through which farmers are assessed, are perceived as very strict. Respondents suggest that more flexibility (e.g. looking at the context and broader farm situation) would improve the implementation of greening measures and management agreements. For example, tot receive funds as a result of cultivating papilionaceous flowers, farmers are not allowed to let this crop being grazed by their flock, a rule that farmers from the adaptability case reported to be inconsistent with their farming model. Third, and related to the second point, respondents think that a lack of co-operation between the Flemish policy domains on agriculture and on nature is hampering a conjoined sustainable development of the counrtyside and agriculture.

Robustness 4: "Anyway, dialogue between agricultural policy and nature policy, there is no dialogue between those two instations, that will never work, they will keep working against each other."⁴³

Some respondents mentioned the Programmatic Approach in decreasing Nitrogen Depositions (Programmatische aanpak stikstof – PAS) as restricting their farm's development by prohibiting farm enlargement.

VLIF - Flemish Agricultural Investment Fund

The VLIF provides financial support to Flemish farmers who commit investments that benefit the farming system by contributing to at least one of the following effects: (1) increasing the resilience; (2) increasing energy-efficiency; (3) reducing greenhouse gas and ammonia emissions and/or improving air quality (Department of Agriculture and Fisheries 2019). Farmers can apply for VLIF investment support when they consider *investing in physical assets (S:11, R:20)* that are on the extensive VLIF list and in the condition that they meet certain conditions, among which being an active farmer (primary occupation).

Twelve respondents talked about this support organ. Although they acknowledge that the availability of this financial support instrument encourages them to make certain investments and implement more sustainable or renewable farming models, the complex and extensive support conditions are perceived as disabling the application for the fund. For example, these conditions are perceived to prevent a step-by-step implementation of new farming strategies. Also, some respondents declare that the system lacks transparency. Not knowing whether they will receive the support they apply for, disencourages some farmers to apply for the support.



⁴³ "Sowieso, dialoog tussen, het beleid van landbouw en het beleid van natuur, die, er is geen dialoog tussen die 2 instanties, dus dat kan nooit gaan, die werken altijd mekaar tegen."



Transformability 5: "Anyway, it is a strange system. Actually, you only need to be good at administration in order to take advantage from it, that's all. It is as simple as that. But that is often the case with subsidies. If you need to apply for it, you just need to be good at the paper work."⁴⁴

Some respondents explain that the application of European policies by the Flemish government are more strictly interpreted compared to other member states, decreasing the perceived flexibility of the policy instrument.

Transformability 2: "VLIF regulation. Currently, it is European legislation, translated to Flemish level, and in Flanders we have interpreted this legislation more strictly compared to our neighbouring countries. Everything that is agriculture and agricultural broadening, for which e.g. in France you would acquire VLIF-support more easily, (...) by for example merely a multipurpose room to receive groups etc., this is considered agricultural activity, while here in Flanders we make a more strict distinction. Also, there is a large limitation on the income that may come from non-agricultural activities. (...) As soon as you decide to separate the dairy processing and selling activities from the farm business, separate juridically, no problem for FASFC⁴⁵, no problem for trade legislation, but for VLIF support, it is a problem. As soon as your gross operating profit from your farm results more from the broadening activities than from the primary activity, then you risk your VLIF-support is being reclaimed."⁴⁶

Despite learning about setbacks from colleagues and problems regarding implementation of the tool, the idea of supporting farmers' investments based on a sustainability assessment generally satisfies respondents. They think that the government should indeed try to eliminate those farmers that are open to innovation and modernisation, and that this could be a good tool to distinguish farmers with a future perspective/strategic vision for their farm from farms where exit is prospected within the next decade. Respondents tend to view this system as more efficient in



⁴⁴ "Maar het is sowieso een vreemd systeem. Je moet eigenlijk gewoon goed zijn in administratie om ervan te kunnen trekken, dat is alles. Zo simpel is dat. Maar dat is vaak zo met subsidies. Als je dat moet aanvragen moet je gewoon goed zijn in de papieren."

⁴⁵ fasfc; Fedral Agency for the Safety of the Food Chain – FAVV; Federaal Agentschap voor de Veiligheid van de Voedselketen

⁴⁶ "VLIF-reglementering. Op dit moment is dat ook VLIF-steun Europese wetgeving, naar Vlaams niveau vertaald, in Vlaanderen hebben wij eigenlijk strikter geïnterpreteerd dan de buurlanden. Alles wat landbouw en landbouwverbreding is, waar dat er in Frankrijk bijvoorbeeld al sneller VLIF-steun, Europese steun zou kunnen worden gegeven voor bijvoorbeeld louter een polyvalente zaal om groepen te ontvangen of dergelijke meer, als zijnde dit is ook landbouw, wordt er bij ons een strikter onderscheid gemaakt. Ook het inkomen dat wordt verdiend mag worden buiten de landbouw is daar een grote belemmering op. (...) Van het moment dat je zegt van, ik heb een landbouwbedrijf en ik wil de verwerking en verkoop afsplitsen van dat bedrijf, juridisch afsplitsen, voor het FAVV geen probleem, voor handelswetgeving geen probleem, maar voor VLIF-steun wél. Van het moment dat jouw bruto bedrijfsresultaat één parameter belangrijker wordt uit die verbredingsactiviteit dan het is uit de primaire activiteit, dan loop je risico dat uw VLIF-steun wordt teruggevorderd."



realizing it's prospected aims compared to direct payments based on amount of agricultural land the farmer is farming (*'hectarenpremie'*).

Robustness 1: "Certain investments, you can apply for VLIF-suport (...). It is something that motivates you to invest. Contrary to receiving fundings just because you are a farmer and you own land... VLIF-support is actually support that you receive because you invest, and you want to improve your farm. Therefore, in my opinion they can even make this regulation les strict."⁴⁷

In general, the problem can be summarized as a lack of the policy instrument to be adapted to a specific situation that a certain farm is in. Relating to this, some respondents mentioned that the rules are not flexible nor diverse enough to support 'truly' new entrants.

Adaptability 4: "It is not always straightforward to fulfil the terms because in my opinion, VLIF is predominantly aimed at farms that are medium-sized or larger. If you have a smaller farm, it is not always evident to fulfil those norms."⁴⁸

Additionally, some respondents also highlighted the importance of *take-over support for young farmers* (*"overname- of installatiesteun"*) in fostering the decision of a potential successor to take over a farm.

Basic payment scheme

The opinions about the basic payment scheme were largely divergent across stakeholders. Most of them admit that payments should not have the purpose to prevent farmers to quit, as they should be able to survive without direct payments. However, farmers claim that these payments are essential as long as their output prices are not increasing. Also, some respondents argue that one can be sure that this budget directly goes to farmers, whereas some budget from the pillar two rural development programme might not be enhancing farmers' resilience but instead interferes with the environment in which farmers operate (e.g. LEADER projects). One respondent framed it as: *"Europese projectmiddelen ter bevordering van de korte keten, dat blijft daar in de provincie hangen, dat blijft daar in lonen hangen en na het project ligt dat stil."* We conclude that respondents find that the major advantage of pillar 1 measures is that they directly support farmers, and thus more directly pursue the main aims of the CAP.



⁴⁷ "Bepaalde investeringen kun je wel VLIF-steun, (...). Dat is dan wel meer iets, iets dat motiveert om te investeren. Maar premies krijgen gewoon omdat je landbouwer zijt en omdat ge grond bezit. VLIF-steun is dus eigenlijk steun dat je krijgt omdat je investeert en uw bedrijf wilt verbeteren. Dus dat mogen ze van mij eigenlijk zelfs nog, ja, minder verstrengen terug."

⁴⁸ "Het is niet altijd evident om aan die voorwaarden te voldoen want het VLIF is in mijn ogen voornamelijk gericht op bedrijven die zo een middenmoter of groter zijn zo. Als je een kleiner bedrijf hebt is dat niet altijd evident om aan die normen te voldoen."



The 'problem of retiring farmers in Belgium' was an issue raised by respondents that connects the topics 'land availability', 'tenure legislation' and 'direct payments' in our analysis. Retiring farmers in Belgium can keep their land, receiving direct payments for it, and meanwhile rent it out to other farmers. Especially young farmers feel disadvantaged in this system.

Respondents acknowledged that additional *support for young farmers (young farmer payments)* are given sufficient attention by the Flemish government.

Product quota's - abolishment of dairy quota

Eleven out of twenty interviewees talked about how the (abolishment of the) dairy quota has influenced their farm. First, they remark that the dairy quotum system has obliged farmers to invest largely in production rights, while the abolishment of the system has nullified their investments. Some respondents from the transformability group explain that when the abolishment was announced, farmers who already had processing equipment had the advantage that they were able to already upscale their production under quotum regime, for example by processing the excessive litres into butter and stock this, while other farmers could be fined when transcending their quotum. At the same time, farmers from the adaptability case ensured that the production increasement on farming system level is less distinct in the organic dairy system compared to the convention dairy farmers; as scale enlargement was a crucial strategy for the latter group after the abolishment. The limitating effect of the quota regulation was also discussed in the context of farm succession. Respondents explained some constellations to circumvent quota limitations, and how they prepared their farms to 'be ready' the moment the quotum was abolished.

It is interesting to notice that farmers and farming system stakeholders tend to categorize Flemish dairy farms based on their production system and general farm strategy. They tend to agree that farmers/farming families should either decide to focus on scale enlargement and cost-efficiency increasing measures ('do more with less'), or to create added value to the basic product by either delivering organic milk or by diversifying the farm with non-agricultural activities. It was observed that the announcement of the quota abolishment has interfered with the decision of some farmers to choose one of the 'add value' strategies, as illustrated by the quote below.

Transformability 5: "They said you have to look for, either scaling up or look for a broadening activity. At that time, we were still subject tot he dairy quota system, but it was known that it would be abolished soon. So, you had to invest in very expensive dairy quota in order to be able to





scale up, while you knew that this investment would go up in smoke after 7 years. And so they decided to go for diversification strategy."⁴⁹

Support for non-agricultural activities

First, respondents from the transformability case seem to agree that support for diversifying farm activities with on-farm processing, agri-tourism is less operationalized compared to neighbouring member states. Second, the European list that determines which ancillary activities are defined as agricultural activities, is outdated according to our respondents. They think a revision would benefit the flexibility of farmers who want to diversify; as a more abundant recognition of side activities leads to a better implication. Third, some respondents think that the Flemish government should put more effort in publication and campaigns in order to stimulate nonagricultural activities to increase diversity of Flemish dairy farms and to improve the compatability/implementation of the dairy farming system within rural communities. In other words, the policy goals are not playing enough attention to this business model. Fourth, some respondents think that farmers, once they have made the decision to diversify their farm, should be more supported regarding practical aspects of applying the law (what conditions should be met in order to work conform the legal aspects, and more specifically, how should farmers put requirements into practice). As an example, farmers who process their milk on their farm need to set up their own autocontrol system, as this is being controlled by the fasfc. Being supported in creating this system from the beginning, was suggested by some of our interviewees to be a good way of supervisory. Last, part of the spatial planning fragments deal with the issue that diversifying farmers are limited in their creativity, as the exploitation of catering is forbidden in agricultural areas. Respondents think that an exception should be made, as this permission has the capacity to benefit rural development and increase the potential of farms to respond to challenges.

Support for organic farming

Respondents from the adaptability case tend to agree that the government has played an important role in the recent expansion of the Flemish organic dairy producers share (while the total number of dairy farms has decreased, the number of organic diary farms has increased in Flanders over the last decades, making them a more significant share of dairy farmers. However, they still form a small group compared with conventional dairy farmers). They explain that part of this support was indirect, by financing specialized advisors to consult farmers and by supporting



⁴⁹ "En dan hebben ze gezegd ja dan moeten we kijken, ofwel schaalvergroting gaan doen ofwel moeten we kijken naar een verbredingsactiviteit. Toen zaten we nog gebonden aan dat quotum, maar het was bekend dat dat ging afgeschaft worden. Dus je moest eigenlijk heel duur quotum kopen om te kunnen uitbreiden, waar je wist dat dat na 7 jaar gewoon in rook opging. En dan hebben ze eigenlijk beslist om naar die verbredingsactiviteit te gaan."



a research institute and to develop a project on converting to organic dairy farming, but very efficient. There is also direct support for farmers who convert to organic farming to compensate the losses resulting from additional production costs. Besides, VLIF support regards organic farming as more sustainable, thus the percentage of an equivalent investment is more supported compared to a conventional farming making a similar investment. In conclusion, although the norms and conditions for organic production are perceived as rather strict, organic dairy farmers think this is necessary to draw the line between farmers not making their efforts, and that the conversion to organic production is more than sufficiently supported by the government. However, it was mentioned by one respondent that the political support remains still relatively low compared to Wallonia and France.

Land tenure legislation

Half of the interviewees mentioned how land tenure legislation, together with the low land availability and high competition for land in Flanders, has negatively affected their farm development. Especially seasonal lease appears to be a delicate point in the law. First, dairy farmers feel disadvantaged compared with arable farmers who grow vegetables and other highvalue, since these farmers can pay a higher price to lease the seasonal land. Second, some interviewees reported that the seasonal lease is not stimulating farmers to maintain soil quality, as it is not their own farm land. However, stakeholders from the workshop rather disagreed with this (see further). Third, competition with non-agricultural actors, such as horsekeepers, was indicated as a threat by some farmers. It seems like stakeholders think that the government should better safeguard the future destination of farmland. Many farmers, especially the younger generation, also complains that the land tenure legislation is so much protecting the tenant, that old farmers that more or less quit farming are too reluctant to rent out their land to remaining farmers, out of a fear that they can't get the tenant off their land in case they want to sell it or lease it to someone else. This tendency, combined with the fact that the so-called pension farmers can still receive the direct payment, so keep their land in own use, adds to the difficulty for young farmers to obtain land to develop their own farm business.

Legislation on food safety and quality

Similar to legislation on manure and fertilizers, the greatest barrier perceived by farmers is not the implementation of measures themselves, but the administrative burden that comes with it. It was suggested that control instances expand their functions from solely auditing to a more supervisory, supporting role. Farmers confirm that quality standards in general become stricter, and they value this encouragement of quality excellence. Nevertheless, specific regulations can hinder farmers in specific situations, for example, the current legislation on antibiotics use is perceived by organic dairy farmers as rather irrational and not flexible. At the same time, although dairy farmers are used to work with standard quality schemes, the combination with other





regulations become more strictly controlled increases the workload and perceived appreciation by society.

Transformability 2: "What is the biggest barrier? The perception among farmers, from the moment I decide to implement processing activity on my farm, oh no, I will have to deal with many more administrative burden... **Yes, the perception is that this is an incredebly large barrier.** Yes, I confirm. This has to do with the mentality of an auditor who walks in to the farm, and everyone who does on-farm processing will receive at least one comment. (...) Maybe it has more to do with the way in which they enter the farm, very strict, very controlling. But this is actually strange for an agency, an agency is on the one hand executive and on the other hand supportive. This supportive role is currently not enough taken up by the FASFC, which is an important point of attention for the policy."⁵⁰

Knowledge transfer and advisory services

The importance of research institutes and advisory services in enabling the resilience of the Flemish dairy sector is largely emphasized by our respondents. Broad and profound knowledge about farm technical aspects, business strategies, farm legal constructions, fiscality, etc. is seen as a first step in increasing the general resilience of farmers and their farms. Respondents agree that the government is supporting different organizations that provide specific knowledge. Despite this variety of advisory systems, our respondents suggest that a neutral and comprehensive advisory system (providing a holistic analysis of a farm business, taking into account for example marketing, technical, fiscal aspects of implementation of a business plan) would have the potential to guide towards higher resilient farms. Respondents also have the feeling that peer-to-peer learing between farmers is insufficient due to large competitional spirit and that policy-makers have the power to stimulate farmers more to exchange knowledge and experiences (e.g. by organizing sessions during which farmers discuss their business results with each other in a confidential atmosphere).



⁵⁰ "Wat is hier de grootste drempel? Bij de boeren leeft dat idee, van het moment dat ik iets ga doen met verwerking, oei, ik ga daar weer een ganse kaft van administratie bij moeten kappen… Ja, de perceptie is dat dat een ongelooflijke barrière is. Ja dat is inderdaad ook zo. Dat heeft een beetje te maken met de mentaliteit waarop zo een controleur binnenkomt, iedereen die iets doet aan thuisverwerking en die controle krijgt gaat ook altijd een opmerking krijgen.[…] Het heeft misschien meer te maken met de manier waarop dat ze binnenkomen, heel streng, heel controlerend. En dat is eigenlijk maf voor een agentschap, een agentschap is enerzijds uitvoerend en anderzijds ondersteunend. Die ondersteunende rol neemt het FAVV op dit moment te weinig op, en dat is wel een belangrijk aandachtspunt voor het beleid."



Other policies

Fiscality appears to be an underestimated bottleneck, especially for farmers in our transformability case.

3.3.2 What changes were suggested to enhance the resilience of the farming system?

A very specific suggested change from some of the adaptability interviewees was to extend the time period for converting to organic dairy farming to two years instead of one and a half year, in order to prevent farmers to convert for solely monetary reasons. They think that converting to organic farming should mainly arise from vision and idealism additionally to the aim of creating added value. However, as this period has already been shortened from two to one and a half year in the past, respondents admit that changing it again would frustrate farmers as the perceived frequency of policy changes is already high. A second specific suggestion, also relating to the adaptability case, was to flexibilize the cross-compliance rules to receive funds as a result of cultivating papilionaceous flowers. Currently, farmers are not allowed to let this crop being grazed by their flock, a rule that farmers from the adaptability case reported to be inconsistent with their farming model. A third specific suggestion that appeared in some interviews was that policymakers should reconsider the effects of the current tenure legislation. A share of our respondents were of the opinion that the seasonal lease is hampering the land availability for younger, active farmers. However, no clear consensus was found regarding this topic. Another specific suggestion that was found in the sample relates to the organization of land consolidation. Currently, farm land in Flanders is strongly scattered. Some respondents indicated that there is a large potential for improving land use efficiency and that the government could take up a leading role in setting up a cooperation for this. A fifth specific suggestion that often recurred in the simple was to (re-)introduce a minimum price for agricultural products. Farmers do not like the current system of subsidies are perceived as a method of creating a viable income for farmers because food prices are insufficient in renumerating the farmers' work. A large share of our respondents find the idea behind this system wrong: they argue that subsidies should not be necessary, instead farmers should be able to be profitable without depending on subsidies. However, given the current system, respondents confirm that many farmers would not be able to survive without the current subsidies. From our data, it seems that the perceived room for manouvre would benefit from a simplification of the regulatory framework. More specifically, the rules and conditions (crosscompliance) that farmers need to meet to qualify for certain subsidies should be more transparant, without loosing diversity and tailor-made specificities.

A more general suggestion provided by respondents was to increase the role of the government in providing farmers with specific knowledge and skills, for instance by stimulating the supply of courses in management skills, marketing, enterpreneurial skills, risk management portfolio's.





Additionally, it seems like policy-makers should aim to increase room for experimentation. Currently, farmers who want to try out or switch to a new business model, are only left with the option to take the risk of largely investing as an entrepreneur. We suggest that the government could be a better enabler in stimulating enterpreneurship in the sector and the quest for new farming models by offering test opportunities.

Some perceived discrepancies in the policy framework lead to confusion among dairy farmers. The most important one is the general perceived inconsistency between the overall policy goal and the policy instruments. Most interviewees were of the opinion that the government, and the farming system actors in general, mainly supports the farming model of scale enlargement and increasing cost-efficiency. They have the feeling that it becomes harder for small farmers to survive. However, some respondents explain that some parts of the policy framework push towards scale enlargement, while other parts push towards alternative farming methods. They feel like policy-makers want to support different types of farmers, farming models and farming strategies, but they tend to agree that an overarching political vision – which they think is currently lacking – is necessary for (a) better implementation of certain farming models and (b) more radical transformation at the farming system level. In this context, it was remarked by some of our respondents that the definition of farming is too narrow in Flanders.

Related to this perceived inconsistency between political vision on agriculture and political support for agriculture, is the fragmentation of agriculture-related policies across different policy domains. Althoug respondents do not seem to think that different policy domains should not necessarily be conjoined, they suggest that more co-operation between policy-makers could enhance the creation of a more convenient and coherent regulatory framework for farmers. Similarly, some respondents suggested national governments should work together to harmonize policies across borders or to provide tailor-made solutions for a specific region and farming system.

Adaptability 4: "From the government, there is some steering but not a vision, in my opinion. They are gradually giving more attention to all kinds of broadening activities and divergent types of agriculture. But they are not really steering towards that direction or being pushed forward as model example. (...) I miss too less vision and too less feeling with practice. Those people taking the decisions often have substandard feeling with what really goes on in real life. (...) but it [referring to policy transitions] is not going fast enough for the context that we are in today."⁵¹



⁵¹ "Dus vanuit het beleid wordt er zo gestuurd maar er wordt te weinig visie meegegeven, in mijn ogen, he. Er wordt wel langzaamaan meer aandacht besteed aan allerlei vormen van verbreding of andere manieren van landbouw. Maar het wordt niet genoeg echt gestuurd in die richting en als voorbeeld naar voor geschoven. (...) Ik mis te weinig visie en te weinig voeling met de praktijk. De mensen die de beslissingen nemen, hebben soms zo weinig voeling met


Adaptability 3: "In my opinion, when it comes to agriculture, the government keeps favouring conventional agriculture and the scale enlargement. But on the other hand, you have nature and climate and air pollution etc. and those things are not compatible anymore. It are separate policy domains, but the government is yet the overarching whole but those two are standing next toe ach other and that is contradictory in my viewpoint."⁵²

3.4 Resources and network

The perceived availability of social networks and contacts to discuss policies varied across the interviewees. It seems like the degree of perceived availability of such contacts depends mostly on someone's personality: participation to information sessions, being member of a farmers association, attending networking and study events, etc.) and somewhat varies across regions, as some respondents declared that farmers from their village tend to seek each other's company and advice, while other farmers said that the feeling of competition between farmers prevents them to actively seek contact with each other (they would rather occasionally meet with farmers from other counties to discuss challenges they are confronted with).

The lionshare of our sample farmers and other stakeholders reported that the availability of information about (changing) policies is more than sufficiently high, freely available, and that farmers who subscribe for certain fora are even automatically updated. In other words, once they have found the right sources, they do not need to actively seek for policy information anymore. Most farmers learn about policy updates through targeted letters they receive and meetings they attend that are the result of memberships (advisory company, farmers organization), but also social media and agricultural literature were two important sources named by farmers. Other important sources to learn about specific policies or policies that are specifically important to understand for certain farming models are: conversations with advisors (for specific information that they actively seek to) and civil servants or researchers, and to a lesser extent via conversations with other farmers (peer-to-peer learning).

Although the respondents agree that governments actively keep farmers up to date about policy changes, some respondents think that policy-makers are not sufficiently supporting and supervising the implementation of (new) policies. Besides, respondents report a rather low tend



wat dat in de praktijk echt gaat. (...) Maar het [referring to policy transitions] gaat niet snel genoeg voor de context waarin dat we vandaag zitten."

⁵² "De overheid blijft in mijn ogen toch nog altijd, als het gaat over landbouw, heel hard de kaart trekken van de gangbare landbouw en ook die schaalvergroting. Maar anderzijds heb je het wel over natuur en milieu en luchtverontreiniging en dit en dat en dat gaat daar eigenlijk niet mee samen. Dus dat zijn wel aparte beleidsdomeinen, maar de overheid is toch wel het overkoepelende van het geheel dus die 2 staan naast elkaar en dat spreekt elkaar wel wat tegen, vind ik."



to agree that the availability of policy-makers through direct personal contact, or their openess for dialogue and specific discussions is rather low.

Access to credits appeared to be relatively easy, although some respondents reported that banks used to be keener to give loans to farmers. Nevertheless, automation and technology further increase the capital-intensive character of the farming occupation, which respondents frame as a major challenge for new entrants. In contrast to the production factor capital, the production factor management is perceived to being rather low and to vary more across farmers. Some respondents claimed that managerial capital and practical knowledge is substandard in the Flemish dairy farmers population compared to neighbouring countries.

Some stories of our respondents show that certain opportunities, that crucially influenced their farm's development, have been provided by their network (regarding the acquisition of land, cooperating with other farmers, etc.). Similarly, the role of neighbours and how they view the role of the farm in the rural community was indicated as an important network factor that could enable the development of the farm. At the same time, some respondents were of the opinion that there is an increasing need for more neutral advisory systems, as the advice that farmers receive from their suppliers is not independent. At the moment, farmers need to actively seek for the right sources when in need of strategic business advice.

3.5 Overall results

First, it should be noted that when conducting a study wherein the effectiveness of policy is questioned, informed by mainly farmers, the results need to be filtered from the abundancy of complaints that farmers put forward. However, after a careful analysis, one can discover that some of their frustrations may contain useful suggestions for policy improvement. Following the structure of the ResAT wheel (Termeer *et al.* 2018), results were clustered into themes, as illustrated by the statements in chapter 2. The discussion below follows the same structure and is explaining the colours in Figure 1.







Figure 1: the policy bottom-up analysis for the Flemish case study on dairy farming summarized by an adoption of the ResAT wheel





3.5.1 What is the perceived amount of policy support to robustness?

Farmers complained that receiving funding has become more difficult because of increasingly complex regulations (a lot of conditions one needs to comply with). This contributes to the perceived low room for manouvre and low flexibility of the policy framework that farmers are subject to. The analysis revealed that the CAP in practice predominantly supports farmers through direct payments and support for physical assets (executed by VLIF), thereby typically fostering farmers' buffering power instead of triggering them to look for alternatives. Therefore, *protecting status quo* and *buffer resources* were coloured dark green. Regarding the risk management theme, we considered the extence of information as insufficient to make thoughtful conclusions, hence this piece was left uncoloured. The *short-term focus* piece was coloured light green, following the reasoning of the long-term focus discussion in section 3.5.3.

Adaptability 4: "Sometimes, I find the policy goals weak. I think: what is the policy goal? In general, is there a strong vision? No. What is the vision? A bit of the same tomorrow and also a bit different, but not too much. Look at the agricultural policy of the previous 20 years, it always stayed mostly the same. There never was a minister saying: you know what, we are going to take a different approach. We are going to try out a different course."⁵³

3.5.2 What is the perceived amount of policy support to adaptability?

The interview data revealed that farmers have the perception that there is a lack of flexibility, variety, and tailor-made approaches in the policy framework. The lack of flexibility mostly refers to the limitation of spatial planning regulation, and to the requirements for VLIF investment support and the fact that this support can be retracted when requirements are not met anymore. Failure to meet requirments of VLIF investment support can be the result of unfortunate and very farm/family specific circumstances. The lack of variety and tailor-made approaches mostly refers to the legislation on manure and fertilizers that are perceived as inflexible, because not adapted to the complex Flemish context, nor towards a holistic approach, and also to the perceived unfair level playing field amongst farmers regarding the PAS categorization of farms. It can be summarized that the main barrier for farmers is the complexity and the lack of support for adaptability. However, these findings were considerably contested by the workshop stakeholders. Some key civil servants amongst them provided us an interesting insight about the process of



⁵³ "Soms vind ik de doelstellingen zwak. Dan denk ik van: wat is onze doelstelling eigenlijk van het beleid? In het algemeen is er een sterke visie? Neen, he. Wat is de visie? Een beetje van hetzelfde morgen en ook nog een beetje anders, maar niet te veel. Kijk naar het landbouwbeleid van de laatste 20 jaar, dat is altijd een beetje van hetzelfde gebleven, he. Er is nooit geen minister geweest die heeft gezegd van: weet je wat de visie, we gaan dat hier eens anders aanpakken. We gaan een andere koers proberen te varen."



policy making in Flanders. When confronted with the statements on flexibility and variety, the administrators replied that there already exists a lot of variety in the policy measures, policy instruments, and their associated conditions – as had already been acknowledged by a small share of our interviewees. When asking whether additional flexibility could be beneficial for the farmers' resilience, the administrators argued that they cannot make individual policy for 20.000 farmers. It thus seems that there is a crucial trade-off mechanism in the policy framework between giving flexibility to specific cases and being uniform and equally fair for all farmers. In addition, European regulations often enforce uniformity upon member states' policy instruments.

Nevertheless, they did acknowledge that farmers may be approached in an unpleasant way by auditors. Together with the increasing societal pressure, they understand why farmers often have the feeling to be treated as villains or criminals when audited by environmental administrators. As one of the workshop participants stated: *"Auditors are too much executing a controlling role in stead of an advisory role"*⁵⁴. We conclude that the fragmentation of policy domains across different departments results in a very complex tangle of interrelating legislations and rules that farmers are subject to. Farmers are not looked upon in a holistic way but in a fragmented way during evaluations. From the farmers' point of view, there is an urgent need for transparency and simplification. In other words, a lack of political attention for coherence and transparency across policies probably is the key problem behind this perception. Taking all the above arguments into account, we have chosen to colour the *variety and tailor-made responses* and *flexibility* piece of the ResAT wheel yellow and dark orange respectively, because the main aim of this research was to assess the perception of farmers on how different aspects of the policy framework impact the resilience of the Flemish dairy farming system.

The interpretation of the fragments regarding the abolishment of the dairy quotum system was somewhat ambiguous. On the one hand, the abolishment of the dairy quotum system was described by some farmers as a policy decision that expanded their ability to adapt their farm to modern agricultural practices. In this way, the abolishment can be interpreted as enabling adaptability. The result of the policy measure was that average farm size increased, thus the status quo was not maintained. On the other hand, the abolishment can also be evaluated as enabling robustness when taking into account the definition of our sample cases: it allowed for the scale enlargement strategy to be largely applied, thus feeding our original definition of robustness. Thus, depending on the point of view and which time scale is taken into account, a different interpretation of how this policy decision impacts the resilience of the Flemish dairy sector is defendable. Taking the ResAT wheel division into account, we decided that the main effect of the abolishment is the enhancement of the *middle-long term adaptive capacity* of dairy farms.



⁵⁴ "Er wordt teveel controlerend en te weinig adviserend opgetreden door de controleurs"



Regarding other policies; among which the legislation on manure and fertilizer use, the conditions for being able to qualify for VLIF investment support, and the support for the conversion of the organic production method; results implied diverse interpretations regarding the current middle-long term focus policy approach.

Farmers and other farming system stakeholders seem to agree that a certain amount of stability - and thus a certain amount of stiffness in policy - is needed, but at the same time, for certain policy measures a quicker adaptation of regulation is necessary to increase effectiveness. For example, whereas confirming that innovations are gradually but effectively incorporated in the VLIF investement support, respondents at the same time confirmed that adaptation in manure legislation are too frequent and abrupt to keep up with, and that refining European directives (e.g. on the period of conversion towards organic production method, or e.g. on the amount of income that can be from non-agricultural activities). To conclude, the adaptation frequency is too high in some domains and too low in other domains to stimulate adaptations of the farming system towards increased resilience. Therefore, the *middle-long term focus* piece of the ResAT wheel was coloured yellow, meaning that different specific policies were assessed to have either a low or high adaptability towards better stimulating farmers to either rapidly or gradually adapt to changing circumstances.

According to our respondents, the current VLIF system has the capacity of evolving along with (technological) innovations in the agricultural sector while limiting overly support to inefficient or redundant applications. VLIF is steering towards more modern and sustainable farming methods as VLIF innovation support investment applications are gradually incorporated in the standard VLIF investment support. Additionally, a lot of respondents (both farmers and other farming system actors) expressed their frustration about the lack of feeling with the agricultural sector of both consumers and policy-makers. They argue that it is also the role of the policy to raise awareness among consumers on playing a role in increasing the sustainability of the agri-food chain, and not only blaming farmers. Some respondents added that consumers have a wrong vision on modern agriculture, and that this is partly due to policy campaigns that support the idealistic/nostalgic view on farming. On the other hand, policy support for farmers who participate to education programmes enables social learning. Because of the described counteracting policy measures and implementations, a yellow colour was assigned to the *social learning* piece.

3.5.3 What is the perceived amount of policy support to transformability?

First, we elaborate on one of the insights that was provided by the civil servants who somewhat explained the process of policy-making in Flanders. The relatively new instrument of supporting project innovation (executed by the VLIF) has hardly been used by any farmer despite being implemented five years ago. It turned out that the administration delayed the implementation.





Therefore, this policy measure has not been able to enhance transformability due to implementation problems and politics.

A second point addresses the remark of some respondents that the main benefit of pillar one measures is that they provide absolute certainty that financial support directly goes to farmers, which is the main target audience of CAP fundings. However, we argue that pillar two measures hold the potency of deeply steering the farming system in its whole towards increased resilience. Many pillar 2 measures, for example LEADER, the rural development support by cooperation with the urban environment (Flemish government n.d.), imply co-operation between different farming system actors, thereby stimulating processes of social learning. Unfortunately, at least from our finding, it seems that uptake of Pillar 2 measures is far less common than receiving direct payments.

Third, our data show that farmers are not very keen to co-operate, both between farmers (especially with regard to sharing equipment), and with other farming system actors. Only a part of them seemed to understand the opportunities that could lie in it. For example, in the collapse case, a kick-off meeting was organized by an organization for innovation support, a spin-off of a farmers organization, with the aim of exploring the potential benefits of a regional label. Unfortunately, the plan was dismissed after this first meeting as a result of disinterest and distrust among local farmers towards other farming system actors. Other examples of unsuccessful cooperation initiatives occurred in the other cases. We argue that the agricultural policy is not actively encouraging co-operation between farmers because they can individually count on financial support when for example investing in machinery. In fact, one could argue that the agricultural policy in this way is passively disencouraging certain types of co-operation. However, parallel to the availability of financial investment supports for individual farmes, pillar two of the CAP also offers specific policy measures aimed at supporting co-operative processing and marketing (enhancing the environmental quality and vitality of the countryside through cooperation, support for the processing and marketing of agricultural and horticultural products, Support for the development of producers' organizations).

For the Flemish dairy sector, these measures seem to be not effective in reaching their aim, not because of ineffectiveness of the policies themselves, but because of low uptake as a result of farmers' mentality. To conclude on all the above, we argue that policy-makers could direct more attention of farmers and other farming system stakeholders to the potential value of partnerships and co-operation in order to enhance the overall impact of the agricultural policy. Likewise, policymakers should increase awareness amongst farmers on what policy instruments they can apply for, and how they can contribute to their farms' resilience, as has been discussed in section 2.2.3. Because of the above argumentations, the *in-depth learning* piece of the ResAT wheel was coloured yellow.





Fourth, the respondents generally agreed on a lack of long-term political vision. Due to the Belgian political system, the mindset of policy-makers is orentiented at the five-year time period, in between elections. Many and frequently changing rules and policies, as discussed in section 3.1, can demotivate potential successors, thereby potentially jeopardizing generational renewal in the sector. The policy *focus* on developing *long-term* resilience strategies is perceived as insufficient, thereby assigned the colour red in our ResAT wheel. The fragment below provides an illustration on this finding.

Transformability 5: "(...) I really don't know where they want to go with agriculture. Sometimes we have the impression, do they still want farms in Flanders? On the other side, we are convinced that they cannot do without agriculture in Flanders. Even if it is only to maintain open space. Because who will maintain it all otherwise?"⁵⁵

Last, a lot of respondents feel like the CAP and the policy framework in general is aimed at supporting scale enlargement and cost efficiency strategies of farmers rather than fostering atypical farm management decisions. The room for experimentation was considered as low. Section 2.2.3 clearly illustrates that, according to our respondents, the policy is only passively and to a limited extend providing incentives for the implementation and evolution of *niche innovations* and *the dismantling of the status quo*. The first topic was assigned a dark orange colour, because of the weight and the consistency of our finding that farmers have little room for manoeuvre; while the latter topic was assigned the color yellow, because the policy instruments that inable innovation are available in principle, but little used in practice because of insufficient awareness and implementation effort.

⁵⁵ "(...) weet ik totaal niet waar dat ze naartoe willen met die landbouw. Soms denken wij, willen ze eigenlijk wel nog landbouw in Vlaanderen? Langs de andere kant zijn we ervan overtuigd dat ze niet zonder landbouw kunnen hé in Vlaanderen. Al is het maar voor al die open ruimte te beheren. Want wie gaat dat anders allemaal onderhouden?"





4 Conclusion

The Flemish dairy farming system is increasingly challenged by complex and interfering influences that endanger its long-term capacity to withstand disturbing shocks and trends. Among the most important economic, environmental, social, demographic and institutional challenges perceived by Flemish dairy farmers are the increased price volatility, competition on land allocation for nature and agricultural purposes, low succession rates, high workload pressure, decreasing appreciation for farming from society, frequently changing policies, and a growing critique on climate impact, quality of products and animal welfare. Assessing the resilience of this farming system is crucial for understanding what factors can create a more enabling environment for improved resilience, and is one of the activities of the SURE-Farm project. This document reports on a bottom-up policy assessment, which is one of the analyses conducted for understanding how the farming system's resilience can be supported by policies in particular.

Drawing on data obtained from interviews and a validation workshop, the bottom-up assessment aimed to reveal farmers and other farming system stakeholders' perceptions on how the policy framework (that is, the combination of the CAP, national, and regional policies) impacts the farming system's general resilience by distinguishing between its impact on three resilience capacities; robustness, adaptability and transformability. The ResAT policy assessment wheel was used for visualizing and structuring the interpretation of the results.

The analysis demonstrated that current policies are perceived as predominantly supporting the robustness of the farming system, as direct payments and support for investments are perceived as the measures that have the largest implementation, and they increase buffering power of farmers and the maintenance of the status quo. Moreover, policy-makers are usually focussing on the execution of a short-term policy plan as a result of the legislative period in Belgium.

Furthermore, the analysis showed that the perceived policy impact on improving the adaptability and transformability of the farming system is moderate to low because of the following reasons. First, the variety in policy instruments was perceived as moderate, while the amount of tailormade approaches and flexibility was considered to be substantially low. Second, social and indepth learning were interpreted to be low due to deficient knowledge sharing stimuli and collaboration incentives. Despite measures aimed at challenging the status quo in the sector are available according to respondents, they are in practice not commonly requested. This can be a result from insufficient policy support for the implementation and dissemination of both new policies and innovative ideas (such as niche-innovations). Third, a beneficial balance between long-term focus and short- to middle-term flexibility needs to be pusued by policy-makers; as a trade-off between maintaining long-term stability of the policy framework and a sufficient amount of flexibility was found.





In conclusion, farmers generally perceive the policy framework that they are subject to as rather constraining their overall resilience. However, other farming system actors believe that the policy in its current form is capable of steering the Flemish dairy sector towards higher resilience despite its limitations that have been discussed in this document. To achieve this, attention to effective implementation of policy instruments is key to better ensure their pursuit of policy goals, for example by assisting farmers whom struggle with applying for financial support and/or complying with rules.





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6 Appendices

6.1 Appendix 1: Interview outline

Handleiding Interviews SURE-Farm taak 4.3: landbouwers

Voorbereiding

- Identificeer de belangrijkste uitdagingen/risico's maar ook opportuniteiten voor de melkveehouders die behoren tot deze *case* (zie ook rapport T4.2: inleiding). Deze meenemen naar het interview.
- Kijk welke types beleidsmaatregelen of wetgeving van belang kunnen zijn voor melkveehouders die behoren tot deze *case*

Vragenlijst

0. Introductie

- Stel het onderzoek voor, de doelstellingen, en vertel waarvoor de informatie die de respondent geeft gebruikt zal worden
- Vraag of het OK is om het interview op te nemen.

1. Situering bedrijf

- Wat doet uw landbouwbedrijf? Welke producten van uw bedrijf verkoopt u? Aan wie verkoopt u uw producten?
- Wat is volgens u de bredere functie van uw bedrijf?
 Anders verwoord: Wat zijn de functies van uw bedrijf naast de productie van melk? Denk aan zowel private als maatschappelijke functies. Hoe ervaart u de rol van uw landbouwbedrijf voor recreatie, landschapsbeheer, ...?
- Wat is de drijfveer van uw motivatie om dit werk te doen? Was het voor u van kinds af aan duidelijk dat u ging boeren? In welke mate speelt geld verdienen een rol in uw motivatie?
- Welke andere systemen zijn relevant voor de melkveehouderij in Vlaanderen, en specifiek voor bedrijven zoals het uwe? Het retailsysteem, het systeem van melkophaling en verwerking, het innovatiesysteem dat relevant is voor melkveehouders van het type van deze respondent, het samenspel van verschillende beleidsniveaus en –domeinen en





lobbygroepen, ...

- Meer concreet: bent u lid van een landbouworganisatie, wat vindt u daarvan?
 Komt u vaak in contact met natuurbeheerders; komt u vaak in contact met toerisme, ...?
- Adaptability case: hoe belangrijk is Biomilk.be voor uw bedrijf? Hoe zeker ben je dat je in de toekomst aan hen zal kunnen blijven leveren? Spelen zij een rol naast de afname van melk? Zou je via andere kanalen dezelfde volumes aan dezelfde prijzen kwijt kunnen?

2. Uitdagingen en risico's

- Wat zijn de belangrijkste ontwikkelingen van de laatste vijftien jaar (na 2000) die een invloed hebben op uw bedrijf? Denk aan economie (melkprijs), wetgeving, consumentengedrag, dierenwelzijn, milieu, ...
- Wat zijn de belangrijkste uitdagingen/risico's volgens u voor het voortbestaan van uw bedrijf? Welke is het belangrijkst? (schrijf apart op)
- Wat zijn de belangrijkste opportuniteiten volgens u voor uw bedrijf? Welke is het belangrijkst? (schrijf apart op)
- Is er een bepaald punt in de tijd dat de start vormde van deze risico's/opportuniteiten?
 - *Adaptability case:* was de situatie anders voordat de cooperatie Biomelk Vlaanderen opgericht werd?
 - *Transformability case:* welke gebeurtenis heeft u er toe aangezet om te beginnen nadenken over hoeveverwerking en thuisverkoop?
- Frequentie van deze *risico's/opportuniteiten*: hoe vaak komen ze voor?
- Verwacht u dat sommige van deze *risico's/opportuniteiten* zullen verminderen in de toekomst?
- Verwacht u dat de toekomst veranderingen zal brengen die kansen of bedreigingen vormen voor de melkveesector (en melkveehouderij binnen *deze case*)?





- Hoe zeker bent u dat u binnen vijf of tien jaar uw melk nog steeds op dezelfde manier zal verkopen als nu? En hoe verwacht u dat de prijs die u voor uw melk krijgt in dit afzetkanaal zal evolueren?
- Hebt u er al aan gedacht om uw melk op een andere manier te verkopen? Is dat een mogelijkheid voor u?

3. Resilience

- Voor de genoemde belangrijkste *risico's*: hoe gaat u daarmee om?
- Voor de genoemde belangrijkste *risico's*: brengen deze geen kansen met zich mee?
 Misschien zet het bestaan van deze risico's u er wel toe aan om nieuwe wegen in te slaan als bedrijfsleider?
- Voor de genoemde belangrijkste *risico's*: hoe gaan andere landbouwers zoals u daarmee om? Is de Vlaamse melkveesector klaar voor deze uitdagingen? Welke spelers zouden meer of anders moeten werken om de sector hiervoor in paraatheid te brengen (spelers uit de handel, de melkverwerking, landbouworganisaties, onderzoeksinstellingen of de politiek)?
- Is de Vlaamse melkveesector, en specifiek bedrijven *uit deze case*, klaar om de *opportuniteiten* die u vermeldde daarnet te grijpen? Waarom niet?
- Op welke manier helpen uw afnemers van melk u om te gaan met risico? Dit zijn ofwel:
 melkerijen Milcobel, FrieslandCampina of Danone, en de producentenorganisaties die daaraan gekoppeld zijn
 - Biomilk.be en haar afnemers
 - de klanten, in het geval van hoeveverwerking en rechtstreekse verkoop
- Resilience response: de uitbreiding van het bedrijf, omschakeling naar bio, opstart van hoeveverwerking, inkrimping van de veestapel, specialisatie of stopzetting van specialisatie in melkvee, overschakeling van zelf geteeld voeder naar aangekocht voerder of omgekeerd,
- Wanneer vond deze resilience response plaats?
- Hoe kijkt u nu aan tegen die keuze: zou u opnieuw dezelfde keuze maken, of een andere?
 Welke gevolgen van deze keuze had je verwacht en welke niet?





4. Netwerk

- Met wie praat je over de beslissingen die je neemt over het bedrijf?
 - Robustness case: met welke bedrijfsadviseurs praat je eventueel? LIBA?
 Boerenbond? Je producentenorganisatie (= melkerij Milcobel of PO DairyCam (Campina) of PO Beste Melk (Danone)?
 - Adaptability case: met welke bedrijfsadviseurs praat je eventueel? Wim Govaerts? Biomelk Vlaanderen? ILVO of Inagro?
 - Transformability case: wie bood ondersteuning bij het uitbouwen van de hoeveverwerking-activiteiten? Innovatiesteunpunt?
- Met wie praat je over de manier waarop je met de *risico's die je vermeldde* kan omgaan?
 - Wat is de rol van bedrijfsadviseurs hierin (LIBA, Wim Govaerts, ? Biomilk.be, Innovatiesteunpunt, ...)
- Met wie praat je over de manier waarop je met de *opportuniteiten die je vermeldde* kan omgaan?
 - o Rol bedrijfsadviseurs?

Bijvragen indien nodig:

- Spreek je soms met bedrijfsadviseurs over de beslissingen over je bedrijf die je neemt?
- Spreek je soms met andere landbouwers over ...
- Spreek je soms met familieleden over ...
- Spreek je soms hierover met de melkerij? Met de producentenorganisatie? Of met je klanten in het geval van thuisverkoop?

5. Beleid

- Wat is uw mening over de invloed van de overheid op de landbouw? En specifiek op uw melkveebedrijf? Vindt u dat de overheid de melkveesector *in deze case* sterker maakt of eerder zwakker?
- Op welke manier / op welk domein is de invloed van de overheid op uw bedrijfsvoering het grootst?
 - Welke beslissingen van een overheid, zij het EU, Vlaanderen, de provincie of uw gemeente, heeft uw bedrijfsvoering het meest beïnvloed in de laatste vijftien jaar?





- Belangrijkste *risico's die je vermeldde*: hoe gaat de overheid om met deze bedreigingen?
 Wat zijn de regels op dit vlak? Helpt de overheid jou om met *deze risico's* om te gaan of belemmert ze jou?
- Belangrijkste opportuniteiten die je vermeldde: hoe gaat de overheid om met deze kansen?
 Wat zijn de regels op dit vlak? Helpt de overheid jou om op deze kansen in te spelen of belemmert ze jou?

Bijvragen indien de respondent niet veel spontaan kan vertellen over beleid:

- Wat heeft de afschaffing van de melkquota betekent voor uw bedrijf?
- Hoe belangrijk is inkomenssteun voor uw bedrijf?
- Hoe belangrijk is investeringssteun van het VLIF geweest voor uw bedrijf?
- Zijn er bepaalde vormen van regelgeving die u belemmeren om uw bedrijf te laten ontwikkelen op de manier die u wil?
- Neemt u deel aan programma's voor natuurbeheer, zoals beheerovereenkomsten?
 - Zo ja, is de steun die u daarvoor ontvang significant? Percentage van bedrijfsomzet?
- Bent u actief in innovatienetwerken? Wie organiseert die netwerken?
- Is er bepaalde wetgeving specifiek voor bedrijven uit uw regio? Denk aan ruimtelijke ordening: het verlenen van vergunning voor gebouwen, eventuele conflicten tussen boeren en burgers over geurhinder door stallen of mestopslag (doel: vergelijkbaarheid respondenten binnen case)
- Ervaart u of melkveehouders in uw regio problemen met PAS (programmatische aanpak stikstof)? Dat zijn de boeren die een rode of oranje kaart ontvingen van de overheid. (doel: vergelijkbaarheid respondenten binnen case)
- Op welke manier helpt de organisatie van de melkveesector u om te gaan met nieuwe beleidsvereisten (bv. op vlak van productkwaliteit of milieu)? Dit is zowel de organisatie van
 - de belangenverdediging (Boerenbond/ABS, BioForum),
 - organisatie van afzetkanalen (melkerijen Milcobel, FrieslandCampina of Danone),
 - de producentenorganisaties verbonden aan deze melkerijen
 - de rol die adviseurs spelen bij het omgaan met beleidsveranderingen
- Vindt u het beleid van de overheid consistent? Of zijn er maatregelen die elkaar tegenwerken?





- Vindt u dat de manier waarop maatregelen van de overheid werken de doelstellingen die de politiek aanhaalt goed weerspiegelen? Of verschillen de maatregelen van de doelstellingen?
- Als u voor één dag de dictator van België was, wat zou u dan veranderen aan het bestuur of de wetgeving rond de landbouwsector? Op welke manier zouden die veranderingen de sector meer weerbaar of veerkrachtig maken?

6. Informatie en leren

- Waar haalt u uw informatie vandaan over het beleid van de overheid dat voor uw bedrijf relevant is?
- Waar halen andere landbouwers van *uw case* informatie vandaan? Doen zij dit op een andere manier dan u? Spreekt u met andere landbouwers over de beleidsvereisten waarmee jullie geconfronteerd worden?
- Welke rol spelen *de mensen of organisaties die als belangrijk werden aangeduid voor beslissingen op het bedrijf* in het verkrijgen van informatie over beleidsvereisten?

Bijvragen indien nodig:

- Spreek je soms met bedrijfsadviseurs over nieuwe eisen van de overheid?
- Spreek je soms met andere landbouwers over ...
- Spreek je soms met familieleden over ...
- Spreek je soms hierover met de melkerij? Met de producentenorganisatie? Of met je klanten in het geval van thuisverkoop?
- Heeft u het gevoel dat u een goed overzicht heeft van welke maatregelen van overheden van belang zijn voor uw bedrijf?

7. Toegang tot sociale en economische resources

- Heeft u het gevoel dat u voldoende toegang heeft tot kennis?
- Heeft u voldoende toegang tot kapitaal om de investeringen te doen die u nodig acht voor het bedrijf?
- Is de manier waarop u nu uw melk afzet ook de manier waarop u dit het liefste wil doen? Of zou u dit op een andere manier doen indien u andere afnemers ter beschikking had? Zou u aan hoeveverwerking en rechtstreekse verkoop kunnen doen indien u dat wou?





- Heeft u de mogelijkheid om uw activiteiten of onderdelen van uw bedrijf te verzekeren? Bv. gewasverzekering tegen droogte? Bv. verzekering tegen prijsschommelingen voor krachtvoer? Zou u daar gebruik van maken indien u de mogelijkheid had?





6.2 Appendix 2: Stakeholder check invitation

Workshop hoe beïnvloedt het beleid de weerbaarheid in de Vlaamse melkveehouderij?

Hoe weerbaar is de Vlaamse melkveesector tegen schommelende prijzen, nieuwe wensen en voorkeuren van de consument, veranderingen in het beleid, nieuwe regelgeving, weersomstandigheden en persoonlijke risico's? Dit is dé vraag die we binnen het <u>SUREFARM</u> project – een Europees onderzoeksproject waarin ILVO deelneemt – trachten te beantwoorden.

Binnen dit project onderzoeken we onder andere ook hoe het beleid de weerbaarheid, flexibiliteit en aanpasbaarheid van de Vlaamse melkveesector beïnvloedt. Hierbij denken we uiteraard aan het gemeenschappelijk landbouwbeleid (GLB), wat hier ongetwijfeld een belangrijke rol in speelt. Maar er is ook het Vlaams landbouwbeleid en daarnaast zijn melkveehouders onderhevig aan beleid dat te maken heeft met fiscaliteit, voedselveiligheid, ruimtelijke ordening, natuur en milieu. Slaagt het beleid erin om de weerbaarheid van de Vlaamse melkveehouders te ondersteunen? Zijn er beleidsmaatregelen die de melkveehouder net kwetsbaarder maken? Biedt het beleid voldoende omkadering voor melkveehouders om hun bedrijfsvoering aan te passen aan gewijzigde omstandigheden?

Om deze vragen te beantwoorden gingen we reeds in gesprek met 20 stakeholders uit de Vlaamse melksector, waaronder 13 melkveehouders, over hoe zij het beleid in de praktijk ervaren. Op basis van de ervaringen van die geïnterviewden, stelden de onderzoekers een beoordeling van het huidige beleidskader op, specifiek over de impact op de weerbaarheid en veerkracht van de melkveesector. Dit leverde enkele stellingen op die weergeven in welke mate en op welke manier het beleid de veerkracht van Vlaamse melkveehouders beïnvloedt. Nu organiseren we een workshop om onze onderzoeksbevindingen te valideren en verder te duiden. Stakeholders die als beleidsmaker, melkveehouder, adviseur, expert of op een andere manier een rol spelen binnen de melkveesector en ervaring hebben met de impact van het beleid worden hierop uitgenodigd. Wij zullen de stellingen aan u voorleggen en deze verder met u bespreken.

Praktische informatie

De workshop vindt plaats op **17 september 2019 van 9u30 tot 12u30**. Ontvangst is voorzien vanaf 9u, we starten om 9u30. De workshop eindigt om 12u30. Aansluitend wordt een broodjeslunch aangeboden door ILVO.

De locatie is het VAC Virginie Loveling gebouw, Kon. Fabiolalaan, 9000 Gent.

Mogelijk vindt u het interessant dat uw bedrijf/organisatie vertegenwoordigd is op deze workshop maar bent u zelf verhinderd. Aarzel in dat geval niet om deze uitnodiging binnen uw bedrijf of organisatie verspreiden.





Aanmelden doet u via deze link. Hier vindt u nogmaals alle informatie, het programma en kan u zich inschrijven door te klikken op 'ticket boeken'. Nadat u alle gegevens heeft ingevuld klikt u op "volgende stap" en u bent ingeschreven. Deelname is uiteraard gratis. We voorzien tevens de mogelijk om, voor de deelnemers die dit wensen, een verplaatsingsvergoeding aan te vragen. Ook dat kan u aangeven bij de inschrijving.

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Project acronym: SURE-Farm Project no.: 727520

Start date of project: June 2017 Duration: 4 years D4.3 Bottom-up analysis: How do stakeholders experience the influence of policies on the resilience of farming systems?

Case study report on: arable farming system in De Veenkoloniën, The Netherlands

Work Performed by Partner's No. 1, Wageningen University & Research (WUR)

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1 Methods & data

1.1 Farming system cases

De Veenkoloniën is a farming system located in the Northeast of the Netherlands, in the Provinces of Drenthe and Groningen. The system is largely characterised by large intensive arable farming businesses, mainly specialised in cultivating starch potatoes, sugar beets, and (winter) wheat (Smit et al., 2005; Prins et al. 2011; Immenga et al. 2012; Kuhlman, et al., 2014). During the 20th century, the region developed into an area of large-scale agricultural and agro-industrial production (Immenga et al. 2012). Currently, the area is still largely focused on agriculture, however only a small number of specialised agricultural cooperatives are present. Many farmers are member and supplier of these cooperative manufacturers (Immenga et al. 2012; Karel, 2012). These cooperatives became influential actors in the farming system as buyers and manufacturers of the harvested crops. Intensive arable farming in De Veenkoloniën faces several institutional, economic, social and environmental issues that challenges the resilience of the system, such as:

- High capital intensity of farming and high land prices;
- Located in a peripheral area of the Netherlands (relative lower economic activity, less employment possibilities, decreasing population density and aging farmer population);
- Changing policies, such as CAP reform (e.g. reduction of direct payments through the convergence mechanisms introduced in the 2013/14 CAP reform);
- Plant diseases (e.g. occurrence of nematodes in soils that limit the cultivation of certain potatoes - 'Aardappelmoeheid' - lit. tr. potato fatigue);
- Sensitive soils susceptible for more extreme weather conditions.

See also the other case-specific reports on <u>https://surefarmproject.eu/</u> for more information on De Veenkoloniën and its challenges.

Within the case study region, different regional farming system cases were identified that capture the diversity across the three resilience-capacities of robustness, adaptability and transformability, as well as low-resilience. The aim of this distinction is to ensure variation in terms of stability and change, practices and functions, which allows for better exploration of policy influences for different types of resilience. Importantly, this distinction was not made to shoehorn cases into the conceptual categories of resilience, it was merely to try find variation in farming system cases and resilience types. The distinction between the different farming system cases was made by evaluating the interview transcripts and identifying characteristics associated with the types of resilience (see Meuwissen et al., 2017; Termeer et al., 2018). This allowed for the positioning of the interviews into the different resilience types. Table 1.1 provides an overview of the interviews (actor number) and their positioning in the resilience type.





Farming system case (Actor No.)	low-resilience	Robustness	Adaptability	Transformability
1. Farmer		***		
2. Farmer		***		
3. Farmer		***	*	
4. Farmer		*	**	
5. Farmer		*	**	*
6. Farmer	**	*	*	
7. Farmer		* * *		

Table 1.1 – Overview of the different farming system cases and related interviews

1.2 Interviews

In total 22 actors were interviewed. The respondents cover a wide array of farming system actors, both farmers and stakeholders. It is noteworthy to mention that many of the respondents occupy multiple positions within the farming system (e.g. farmer and board member of a local farmers' union, or vice versa). We identified the respondents according to their main profession. Table 1.2 provides a detailed overview of the respondents.

Table 1.2 – Details on respondents

Actor No.	Description	
1.	Farmer	
2.	Farmer	
3.	Farmer	
4.	Farmer	
5.	Farmer	
6.	Farmer	
7.	Farmer	
	Stakeholders	
8.	Province of Drenthe	Member Executive Council
		(Agriculture)
9.	Province of Drenthe	Policy Maker (Agriculture)
10.	Province of Groningen	Policy Maker (Agriculture)
11.	Local municipality Drenthe	Committee Member
12.	Agricultural cooperative, starch-potato	Public Affairs Manager
	growers	





13.	Agricultural cooperative, arable farming	Sales Manager North East Netherlands
14.	Agricultural cooperative, sugar beet	District Head Agricultural Services
	growers	
15.	Agricultural nature management	Daily Board Member
	organisation (Drenthe)	
16.	Agricultural nature management	Project Assistant
	organisation (Drenthe)	
17.	Agricultural nature management	Daily Board Member
	organisation (East Groningen)	
18.	Nature and Environmental Federation	Project Developer (Agriculture)
	(Drenthe)	
19.	Bank	Account Manager (Agriculture)
20.	Accountancy firm	Business Advisor (Agriculture)
21.	Dutch Young Farmers' Union	Daily Board Member
22.	Regional Innovation Program	Program Manager

The first respondents were invited to participate after a SURE-Farm workshop held in the farming system's region. After each interview, respondents were asked to indicate other relevant and associated actors of the farming system that could be contacted to participate in the research (snowball sampling). This question helped to identify other relevant actors in the farming systems. The snowball sampling method was simultaneously complemented by an internet search on relevant stakeholders. For instance, when a specific actor was mentioned in multiple interviews, information was gathered on this actor and who could be contacted to arrange an interview. The other respondents were asked to participate by email and/or telephone. Despite several attempts, an interview with an actor from the national farmers' representatives union (specialised in the policy field) and the regional water board* could not be arranged.

The interviews were in-depth and semi-structured. An interview guide was developed based the template provided in the research protocol of T4.3. The interview guide was organised along six main topics: (1) Personal background; (2) Background and characteristics of the farming system; (3) Challenges – risks and drivers; (4) Resilience; (5) Policies; (6) Contact information and learning.



^{*}A representative of the regional water board participated in the stakeholder check



All interviews were conducted face-to-face and the duration of the interviews ranged between 1 hour to 2 hours. Permission was asked to record the interviews. These recordings were used to transcribe the interviews into written texts.

1.3 Coding & analysis

A code book was developed by the WP Leaders to guide the coding process for the analysis of the interviews. The code book contains a large set of codes that followed from the interview guide, i.e., the questions asked during the interviews. In addition, room was provided for inductive coding. This means that it was possible to develop codes that emerged from answers given by the respondents (the data set) to complement the code book. This also made it possible to develop case-specific codes relevant for the research.

The qualitative data analysis software ATLAS.ti was used to analyse and code the transcriptions of the interviews. The coding was conducted by one researcher during two coding rounds, one primary coding round and a second coding round as check. Discussion about the codes and coding process took place within the WP4 WUR team.

After the coding rounds, relevant text fragments were organised, critically observed and compared to analyse how farming system actors perceive the influence of policies on the resilience of the regional farming system (De Veenkoloniën). The analysis is based on the interpretation of the text fragments by the researcher. These interpretations were discussed within the WP4 WUR team. The analysis led to the main findings of the research and were presented during a regional stakeholder check.

2 Regional Stakeholder Check

2.1 Organisation of stakeholder check

A stakeholder check was organised to validate the findings of the research. The stakeholder check took place in August 2019 at the venue of *Innovatie Veenkoloniën*², located in the heart of the Veenkoloniën. Several interviewed respondents were contacted and invited to participate in the stakeholder check. This was done to ensure that the participating actors had the opportunity to discuss and reflect on the findings, and to complement the findings one last time. A total of 10 persons attended the check.



² Regional centre developed to kick-start farming-related innovation in the Veenkoloniën, to supply information, and to support projects and subsidy acquisition.



2.2 Summary of stakeholder check

The stakeholder check took the form of a presentation with open room for discussion. First, as part of the introduction, the research problem and relevant concepts were explained. This was followed by presenting the preliminary findings in three parts: (1) Challenges (discussion about identified challenges); (2) Policies considered to be having the most influence (discussion about how these policies influence De Veenkoloniën); (3) The influence of these policies on the robustness, adaptability and transformability of the farming system, and the coloured ResAT wheel (discussion about the resilience of De Veenkoloniën and the role of policies). The presentation ended with a preliminary conclusion to initiate further discussions and a last round to ask participants for their key insights obtained during the stakeholder check. During the preliminary findings at any time. This led to a check with ample room for discussion and interaction between both researcher – participant(s) and participant-participant.

Key discussion points of the stakeholder check were:

Challenges

- Identified key challenges were confirmed and added with commentary of participants.
- The image and social appreciation of agriculture in the Netherlands is felt to be changing negatively; however, the image of De Veenkoloniën changed positively.
- Relevance of water management issues (water supply and water drainage) was put forward.
- Explaining that there is a *fear of* increasing plant diseases, instead of an actual increase of plant diseases.
- The relevance of national transition issues and their local effects (e.g. energy transition, protein transitions).

Policies

- Identified key policies were confirmed and added with commentary of participants.
- Discussion about how policies should function integrate what is done right or determining the right course for the future? And are policies based on emotions or facts (e.g. banning of plant protection products)?
- The relevance of Water Framework Directive and "*Programma Aanpak Stikstof* (PAS)" (regulations on nitrogen emissions) and the Dutch national Climate agreement were put forward.
- The relevance of policies aimed at generational renewal of the farming population was put forward.





Resilience

- A part of the policies currently enhance the robustness of the system; however, it is argued that subsidies can enhance all three resilience-capacities depending on the goal(s). Policies can then become contradictory.
- The difficulties to come to more tailor-made policy options for farming system actors is mentioned. Also, the challenge of making an EU-wide uniform policy versus providing member states with flexibility was put forward.
- Discussion how diversification of farming practices or introducing new practices could enhance adaptability (e.g. agri-environmental management, energy production, introducing new crops). In the past, policies were more designed to protect De Veenkoloniën from shocks; currently, policies are more moving towards adaptation. Currently, policies are focused on improving the current system; it should not be disruptive.
- Discussion that transformation is better suited for creating a 'vision' instead of for policies. Also, transformability is determined by the area, not only by policies. Transformability is also happening at the starch potato industry (processing of plant proteins).

2.3 Integration of stakeholder check

The main findings from the stakeholder check are integrated in the Synthesis and Overall Results sections of the report. During the stakeholder check, participants expressed and discussed their opinions on the preliminary findings; and their argumentations were considered to confirm or nuance our findings. This was simply done by adding relevant comments to our findings, in which is declared that stakeholders confirmed or nuanced the findings; or by adding relevant citations.





3 Synthesis

3.1 Challenges

During the interviews, the respondents recognised several challenges for arable farming in De Veenkoloniën. From this, a set of main challenges was identified.

3.1.1 Economic and social challenges

De Veenkoloniën is strongly characterised by its (historical) development into a large-scale agricultural area. Intensive arable farming of starch potatoes, sugar beets and (winter) wheat became the core economic activity of individual farms and of the whole area. The starch potatoes and sugar beets are cultivated for non-direct consumption; making that the quality of the products can be slightly lower. The main priority of the system is to produce high quantities to sell to the co-operative manufacturers.

Stakeholder: "And we have the advantage that our varieties [of potatoes] do not have to taste good or can be easily baked. If they [potatoes] contain a lot of starch; and can be processed."³

Stakeholder: "It is more about the quantity then... they need to focus on the quantity. Quality is of less importance. You do, of course, want [good quality] (...) However, starch potato farming comes with, relatively to other potato farming, 'less precise' cultivation."⁴

This strong specialisation was, on the one hand, considered as a strength. It led to the fact that the farming system is totally equipped for intensive arable farming. Farms were able to grow and focus on arable farming. However, respondents also indicated that the strong specialisation could be considered as a weakness as it leads to dependency in the farming system: (1) dependency on a limited set of crops and the co-operative manufacturers. The harvested crops are sold to the co-operative for agreed-upon prices via contracts, making them less profitable; however, also less vulnerable to market fluctuations. (2) A strong regional dependency on a good functioning farming system – the agricultural sector is considered as the driver of the regional economy.

Stakeholder: "The farming system is a necessity for the local economy, quality of life in the area. It ensures that there are [economic] activities."⁵ And "Look, ask yourself the question



³ En wij hebben het voordeel dat onze rassen niet lekker hoeven te smaken of goed moeten bakken. Als er maar veel zetmeel in zit. Als ze maar verwerkt kunnen worden.

⁴ Het is meer massa dan.. Ze moeten het echt van de massa hebben wat dat betreft. Kwaliteit speelt een iets kleinere rol. Je wil natuurlijk wel [goede kwaliteit] (...) Maar de zetmeelaardappelteelt is relatief gezien, qua aardappels gezien, een hele lompe teelt natuurlijk.

⁵ Het landbouwsysteem is ook noodzakelijk voor de lokale economie, de leefbaarheid. Wat dus voor zorgt dat er activiteiten zijn.



'what will happen if the agricultural sector disappears?' From the perspective of an economist, maybe not that much. Perhaps some loses in income – it is about 5 à 10% of direct employment. But keep in mind that if all those farmers disappear – 25% of the population – that has quite some impact on the standard of services, how things are in villages, social cohesion. Those kinds of things." ⁶

A much-heard challenge during the interviews was the increasing input and maintenance prices, but mostly the increasing price for land. The Netherlands knows the issue of land scarcity that drives the price of land upwards. The rising prices make it very expensive for a farmer to buy land to upscale the farming business. This leads to long payback periods, requiring the farmer to increase its productivity.

Another risk identified by the respondents was that they experience that the image and appreciation for the agricultural sector are changing negatively. This is experienced by respondents through more negative attention for the agricultural sector in the media, less contact with others from society and a lack of agricultural knowledge within society; there is a feeling that society is getting further removed from agriculture. Respondents indicated that this issue needs to be solved collectively. During the stakeholder check it was mentioned that the image of De Veenkoloniën went through some positive changes the last years. Nationally, De Veenkoloniën are now seen as a region that is not standing still and where agricultural innovations are taking place.

Last, farm succession was considered as becoming more challenging. Young farmers are confronted with the high costs and capital that come with the actual succession; it becomes more and more difficult to finance the succession.

Stakeholder: "You see that farm businesses are becoming more large-scale, but also the land prices, for example, keep on rising. You need to be very well financed if you want to continue as a business and to make certain investments. And, therefore, it becomes more difficult for young people to take over the farm; and that is partially caused by the high land prices.⁷



⁶ Kijk stel jezelf de vraag wat gebeurt er als de hele landbouwsector weggaat? Als een econoom daar naar kijkt dan zegt die: 'niet zoveel'. Inkomen, gaat wat achteruit waarschijnlijk – het is een keer tussen de 5 en de 10 procent van de werkgelegenheid. Direct. Maar houd er rekening mee dat op het moment dat al die boeren zouden verdwijnen. Dan verdwijnt 25 procent van de bevolking. Dat heeft nogal wat gevolgen voor het voorzieningenniveau, hoe gaat het in dorpen, de sociale cohesie in dorpen. Dat soort zaken.

⁷ Je ziet dat bedrijven eigenlijk steeds grootschaliger worden, maar ook dat grondprijzen, bijvoorbeeld, blijven stijgen. Dat je behoorlijk gefinancierd moet zijn om te kunnen blijven voortbestaan en ook om bepaalde investeringen te kunnen doen. En daarmee wordt het ook steeds lastiger voor jonge mensen om het over te nemen; en dat zit dan met name dan voor een deel ook in die grondprijzen.



3.1.2 Natural resources and environmental challenges

A widely shared concern by the respondents was that the soil in De Veenkoloniën is degrading due to loss in organic matter. This soil depletion is a direct result of the high farming intensity in De Veenkoloniën. The challenge is, therefore, how to make sure that crops grow well, and yields remain the same, especially on the long-term.

Stakeholder: "It revolves around crops that demand a lot from the soil. Think of potatoes, but also carrots, onions, flower bulbs. For these crops, you want very good soils, because you deplete the soils. That does not echo with our current fertiliser policy; you cannot add what the soils requires. It is also a major impact on your organic matter. Actually, it is a vicious circle in which your soil quality is degrading, because you need to farm at high intensity (...) It is very worrisome, because land prices are undiminished high, and are rising. However, as a farmer, you are continuously forced to farm more intensive - to demand more from your soils – to generate higher yields; which is actually not possible anymore."⁸

This challenge was brought into relation with concerns about plant diseases – the 'continuous battle' against nematodes in the soil that affect the potato harvests; and the stricter regulation on the use of plant protection products and fertilisers. Respondents argued that the stricter regulations make it difficult to ensure that the soil and crops receive enough organic matter and to protect the crops from diseases.

Changing weather patterns were also regarded as becoming a bigger risk to De Veenkoloniën, which is beyond the control of the farming system. Respondents feel that the climate is changing; their concerns were with the increasing difficulty of managing increasing incidences of extreme weather events, such as severe precipitation or heatwaves and droughts (with the drought of 2018, of course, still fresh in mind).

During the stakeholder check, a participant argued that challenges related to water supply and drainage (i.e. water management) should not be ignored. The issue in De Veenkoloniën is then about 'how to get the right amount of water at the right location at the right time'. This challenge



⁸ Het gaat met name om teelten die heel veel van de bodem vergen. Dan denk ik inderdaad aan aardappelen, maar ook aan peen, uien, bollen. Waarvoor je eigenlijk juist ook goede grond nodig hebt, omdat je er ook heel veel uitrekt. Dat strookt eigenlijk helemaal niet met het mestbeleid dat we nu hebben - dat je eigenlijk niet altijd alles kunt aanvullen wat de bodem ook nodig heeft. Het is ook een grote impact op je organische stofgehalte. Het is eigenlijk een vicieuze cirkel waarbij de bodemkwaliteit steeds meer achteruitloopt, omdat je zo intensief moet telen (...) Dat is zo zorgelijk, want de grondprijzen zijn onverminderd hoog, die stijgen nog steeds. Maar als boer wordt je continu gedwongen nog intensiever, nog meer te vragen van die bodem, nog meer te gaan doen om een hogere opbrengst te genereren dat het eigenlijk helemaal niet mogelijk is.



is directly related to the national question about water distribution in the Netherlands; and the issue of peat oxidation and soil subsidence in the agricultural area.

3.1.3 Institutional and regulatory challenges

In broad terms, policies and regulations were mostly considered as challenges due to the feeling that they are constantly changing; and that it is not always clear why they are changing. Respondents (mostly farmers) commented that constantly changing policies and regulations make it unclear what is allowed regarding your farming activities; and are hampering their work. Changing policies obstruct a long-term stability on which you as a farmer can act and are, therefore, becoming impractical (e.g. can I still invest in new machines / nozzles, and will it not get banned after purchase?). Some respondents mentioned that the 'excess' of policies complicates matters.

Farmer: "Sometimes it feels like policies are changing constantly, and more often. This results in unclarity about what can or cannot be done, or what is going to happen. This reduces long-term stability that you need for your business to function properly."⁹

Moreover, an often-mentioned annoyance by the respondents is the disobedience to regulations by a small number of farmers that results in overly restrictive regulations; thus 'punishing' all farmers by limiting their work (even) more. This mostly regards the use of plant protection products.

Farmer: "The rules do help; however, the biggest problem is that there are 1 or 2 percent of 'bad apples' in the Netherlands. And policies are adapted based on those people. But that has consequences for us all."¹⁰

Last, several respondents (mainly farmers) told about how they experience a difference in policies and regulations between EU member states (e.g. EU differences in coupled support, regulations on plant protection products or fertilizer use). They argued that this contradicts the EU's idea of creating a common market with a fair level-playing field. Moreover, it is felt that the Netherlands



⁹ Soms voelt het alsof het beleid telkens en vaker aan het veranderen is. Dit zorgt wel voor onduidelijkheid over wat er nou wel of niet mag of wat er gaat gebeuren. Dit zit langdurige stabiliteit wel in de weg die je nodig hebt voor je bedrijf en om goed te kunnen werken.

¹⁰ De regels helpen wel, maar het grootste probleem is dat er 1% of 2% rotte appels zijn in NL. En daarop wordt het beleid aangepast. Maar dat heeft consequenties voor de rest.



aims to be the 'most virtuous' EU member state, leading to more strict regulations that affect farming activities.

Farmer: "And we share one European Common Agricultural Policy. Europe is one. However, when I cross the border, I can get certain products that I am not allowed to use here [in the Netherlands]. And that is weird, and I have trouble with that (...) That is distortion in competition, putting it simply black-and-white."¹¹

Farmer: "Well, if you are talking about 'one Europe'; then certain things are quite weird. Look, it [policies] is all directed from Brussels. And yet it provides possibilities [to vary from each other]; and sometimes that turns out positively for a country or for the sector, and sometimes it makes it more difficult. But, I think it is hard to explain sometimes."¹²

Stakeholder: "But I do not blame Brussels for this [differences in regulations between EU member states]. This is purely: who can be the 'best behaved pupil of the class', and what does it cost to get that title?"¹³

Note: differences in policies and regulations are experienced as more visible in De Veenkoloniën since the case study area is closely located to the border with Germany.

3.2 Resilience

3.2.1 Capability for dealing with risks and capturing opportunities.

Respondents shared their thoughts about the resilience of the Veenkoloniën by speaking about its capability for dealing with risks and capturing opportunities.

Several respondents told that De Veenkoloniën are becoming more resilient over the past decade. The general image is that the farming system did not sit still, e.g. investments have been made for upscaling or further specialisation of the farming businesses, or new crops (e.g. onions) are taken up in the business plans of farms. The farming system is becoming a bit more dynamic.

Stakeholder: "(...) However, I think that they [De Veenkoloniën] are more resilient than ever, because they did not sit still. A lot of investments have been made. Also, from Europe,



¹¹ En we hebben maar één Europees landbouwbeleid. Europa is één. Maar ik kan over de grens wel middelen krijgen, die ik hier niet mag gebruiken. En dat is raar en daar heb ik echt moeite mee (...). Concurrentievervalsing, in het heel zwart-wit.

¹² Nou ja als je het over één Europa hebt, dan zijn bepaalde dingen best vreemd. Kijk, het [beleid] wordt allemaal gedirigeerd vanuit Brussel. En toch worden er mogelijkheden gegeven [om af te wijken]. En soms pakt dat voor een land de positief uit of voor de sector en een andere keer wat lastiger. Maar ik vind het af en toe moeilijk uit te leggen.

¹³ Maar ik geef Brussel niet de schuld van dit [verschil in beleid en regels tussen EU-lidstaten]. Dit is gewoon puur: wie is er hier het braafste jongetje van de klas, en wat kost die titel?



with the subsidies that are available. I also see a lot of young farmers taking matters in own hands". $^{\rm 14}$

In contrast, some other respondents did indicate that De Veenkoloniën can also be considered as being conservative. One of the given reasons was that the fixed prices farmers receive for their harvested starch potatoes and sugar beets, which make them not directly dependent on market prices, do not necessarily encourage farmers to implement major changes. Moreover, the strong specialisation of the farming system on the intensive cultivation of three main crops (starch potatoes, sugar beets and wheat) makes the system dependent on a limited number of crops; while also making it more difficult to deal with the depletion of organic matter in the soils.

Stakeholder: "Is the farming system capable to deal with risks? The fact that we only cultivate three main crops – and wheat is an intermediate crop – makes it relatively vulnerable; that high dependency on a small number of crops. That it revolves around a 1:2 crop rotation"¹⁵

Stakeholder: "Can it [the soil] take hits? No, I do not think so, no. It can have a lot – the soil – however, it is true that what you messed up in 50 years, you do not easily fix it in the 1 year after."¹⁶

Multiple respondents did mention that in the past there was a general idea that De Veenkoloniën was 'sitting back' and eventually would 'disappear'. For instance, it was thought that the abolishment of specific support for starch potato production and processing in the CAP would hit De Veenkoloniën so hard that the sector would not be able to cope with this shock. However, the opposite turned out to be true; de Veenkoloniën were possible to overcome this shock. One of the reasons is that the starch potato co-operative was able to raise the prices for starch potatoes since this change in the CAP was announced. The starch potato co-operative needed to change their business model to overcome this change in policy; and their change of course turned out to be positive.



¹⁴ Maar ik denk dat ze veerkrachtiger zijn dan ooit omdat ze niet stil blijven staan. Maar dat er veel geïnvesteerd is. Ook vanuit Europa met de subsidies die beschikbaar zijn. Ik zie ook veel jonge boeren daar nog meer het heft in handen nemen. Ik weet niet wie jij gesproken hebt, maar ik spreek er wel een aantal die hebben er wel vertrouwen in.

¹⁵ Is het landbouwsysteem goed bestand tegen risico's? Het feit dat we maar 3 hoofdgewassen hebben. En graan is een rustgewas. Maakt het relatief kwetsbaar. Die grote afhankelijkheid op een klein aantal gewassen. Dat het draait op 1:2..

¹⁶ Kan het [de bodem] die klappen aan? Nee, ik denk het niet, nee. Het kan best veel hebben hoor - de grond - maar het is wel zo dat wat je in 50 jaar [kapot maakt], heb je niet in 1 jaar weer op orde.



Stakeholder: "Since 2012, the EU abolished the starch potato quota and starch potatospecific subsidies. Luckily, we [AVEBE] saw it coming; it did not happen unexpectedly. This abolishment became a blessing for the starch potato industry. On that moment, you must... Or you will perish, or you do something. 'Come up with a ruse'. Become a real entrepreneur (...) And that happened. AVEBE is doing better than ever. So, it is going better without support than with support."¹⁷

Stakeholder: "A lot of change was required, also from AVEBE. They needed to earn their money in a different way. They received a lot of subsidies from the EU, despite what they would do with the money. Now, however, they are required to really sell their products; and pay a good price for it. And that was a real development for them. About 10 years ago, they chose a certain path and that worked out well. They can now... last year as well... raise the prices for starch potatoes for farmers. While before it was always mediocre."¹⁸

This change in course of the starch potato co-operative was confirmed during the stakeholder check. It meant that farmers were still able to receive decent prices for their cultivated starch potatoes, despite losing crop-specific subsidies.

When talking about risks, respondents often referred to the period of severe drought in 2018. The drought had direct consequences for the farming system as it led to lower yields. At the individual farm level, this shock had financial consequences and every respondent was aware of this, especially the farmers. Yet, some respondents also admitted that they expected worse for the whole farming system. There was only a minor amount of farming businesses that needed financial aid from e.g. the bank, or farming businesses that went bankrupt. This was seen as a sign that in general farmers were able to (financially) absorb this shock through their individual buffer capacity. It was thought that the previous good years (high yields and prices) helped the farmers to overcome the lower income of 2018. Noteworthy is that farmers and others did indicate that another shock, following the drought, would have had severe consequences for individual businesses.



¹⁷ In 2012 is in Europa de aardappelzetmeelquotering en de specifieke aardappelzetmeel steun afgeschaft. Zagen we dat gelukkig aankomen. Dat is niet onverwachts gebeurd. Maar dat is voor de aardappelzetmeel industrie een zegen geweest. Dat het afgeschaft is. Op dat moment moet je dus... Of je gaat ten onder, of doe wat. Verzin een list. Wordt echt een ondernemer (...)En dat is gebeurd. Het gaat nu beter met AVEBE dan ooit. Dus zonder steun gaat het beter met steun.

¹⁸ Intussen heel veel omschakeling dat ook voor AVEBE. Dat zij toen hun geld op een andere manier moesten verdienen. Ze kregen heel veel subsidie van de EU, ongeacht wat ze nou exact mee deden met het geld. Ja, maar nu is het zo.. zij moeten hun product nu echt afzetten. En daar een goede prijs voor betalen. En dat is een ontwikkeling geweest. Ze hebben zo' n 10 jaar geleden een bepaalde richting ingezet die heel goed is uitgepakt. Waardoor ze nu gewoon... afgelopen jaar ook... elk jaar weer een stijging van de prijzen in voor de boeren. Terwijl het altijd maar 'zozo' was.



Stakeholder: "And then I refer to previous year [2018]. A very dry year with a lot of damage in this area [De Veenkoloniën]. If a have a look at the number of clients that came to us to indicate that they do not have enough space in terms of available liquidity; that number was very limited. Well, then I think: 'they have enough resilience to absorb this shock.' Thus, there was sufficient financial leeway to make certain decisions or to change. That they survived that year."¹⁹

In general, individual farmers were convinced that their own farming business was resilient. During the interviews it was mentioned that capturing opportunities as a farmer also depends on the farmer's individual qualities: do you have an eye for new developments and do you dare to invest; or are you more of a wait-and-see farmer? Or how idealistic are you, especially regarding greening of agriculture? Interesting is that, on the one hand, it was mentioned that a younger generation of farmers is perhaps more willing to invest in innovations and change their farming activities. On the other hand, it was also mentioned that the financial situation of young farmers after succession not always allows them to make investments. Lastly, the willingness to capture opportunities also depends on whether the opportunity would lead to economic benefits for the farming business.

3.2.2 Strategies for coping with mentioned risks and capturing opportunities

Respondents were asked to elaborate on the different strategies that would help the farming system to cope with risks and/or to capture opportunities. Various strategies were mentioned and can broadly be understood as follows:

First, farmers likely invest in enlarging their farms and further specialisation of their current farming activities. The goals of these strategies are to produce higher yields and to further lower the cost of production.

Second, the diversification of farm activities was discussed. Respondents mentioned that diversification by introducing new crops to the system is happening more than in the past. Several farmers are growing different crops (e.g. onions, seed or ware potatoes) as part of their business plan. Still, the search for a so-called 'fourth crop' in De Veenkoloniën continues; it is still unclear which crop is the best option to include in the crop rotation plan. The main given reason for the fact that this search is still ongoing is the concern about the profitability of new crops: if every farmer in de Veenkoloniën will start to cultivate this new crop, prices would probably drop. The



¹⁹ En dan kijk ik even naar het afgelopen jaar [2018]. Een ontzettend droog jaar met gigantisch veel schade in dit gebied. Als ik kijk naar het aantal klanten dat zich op dit moment gemeld heeft en aangeeft dat ze qua liquiditeit niet voldoende ruimte hebben voor dit jaar, is heel beperkt. Nou ja, dan denk ik: 'Dan hebben ze voldoende veerkracht gehad om dit op te kunnen vangen.' Dus er is voldoende financiële ruimte geweest om bepaalde keuzes te maken of te veranderen. Dat ze dit jaar doorkomen.


focus of arable farming in De Veenkoloniën remains on the cultivation of starch potatoes and sugar beets.

Stakeholder: "Yes and you should have a crop rotation of 1:3. Some people even say – from a biological perspective – that it should be 1:4, 1:5, or 1:6. I challenge them to come up with a fourth crop. Agronomically, I'm also in favour of a fourth crop; but very simple, money still needs to be earned. We must – within the system of De Veenkoloniën – it needs to come from the current crop rotation. Now, and probably also tomorrow and the day after tomorrow."²⁰

Agri-environmental management is seen as an opportunity to introduce new activities in De Veenkoloniën. It is seen to produce income in a less labour-intensive manner. It was argued that agri-environmental management should be (more) profitable than current practices to be considered as a serious option for most farmers. The downside is that not every area in De Veenkoloniën is designated to become 'nature', only specific locations; making it that not every farmer can participate.

Farmer: "The same goes for natural fields. We have, I think, 40 ha natural fields meant for field birds. I think that is nice to do, but I perceive it as being a crop field. I think it is good that something is happening, and that money is available to do so. However, I have to be able to do it economically."²¹

Another way for farmers to diversify is through renewable energy by investing in solar panels and solar parks. It is regarded as a safe investment that leads to a secure income without much labour. Diversifying through renewable energy also led to concerns, such as that the functions of renewable energy production and food production will be competing for available land, possibly driving up land prices even further; and that the current electrical grid is not designed for multiple-way power flows, i.e. supplying large quantities energy would overwhelm the electrical grid.

Third, after the multiple weather-related shocks in 2018, it was mentioned, especially by farmers, that it triggered thinking about and implementing water management plans to anticipate future shocks. A stable financial basis was thought to be most necessary to cope with weather shocks. Some farmers did say that this becomes more difficult due to the current tax system. There was,



²⁰ Ja en je moet 1:3 gewassen hebben. Sommige mensen zeggen vanuit biologische oogpunt, dat moet naar de 1:4, 1:5 of 1:6. Ik daag ze uit om met een vierde gewas te komen. Ik ben ook landbouwkundig voor een vierde gewas, maar heel simpel moet er wel geld verdiend worden. We moeten - binnen het systeem dat er in De Veenkoloniën is - vanuit deze gewassenrotatie moet het komen. Nu, waarschijnlijk morgen ook en overmorgen ook.

²¹ Hetzelfde geld eigenlijk voor natuurakkers. We hebben, denk ik, 40 ha natuurakkers. Dat is voor akkervogels. Dat vind ik prima om te doen, maar ik zie het als gewas. Ik vind het goed dat er iets gebeurd en dat daar geld voor ter beschikking is gekomen. Maar ik moet het wel economisch kunnen draaien.



therefore, the desire for a change in the current tax system or for fiscal instruments that would make it better possible for farmers to safe profits to function as buffer resource.

Farmers can also take up a weather insurance. Opinions are divided about the usefulness of this insurance scheme: some argue that the insurance is a useful risk management tool and gives a 'safe feeling', whereas others argue that the benefits of the insurance do not outweigh its costs. Taking up weather insurance remains an individual choice.

Fourth, reaching out and getting in contact with other farming system actors to talk, learn and to initiate collaboration is another important strategy. Actors seem to meet each other via meetings, consultations or other events. A good example is the development of *Innovatie Veenkoloniën*, a specialised innovation and development programme for the region made possible through the collaboration between farming system actors to further innovate the agricultural sector in the region.

Last, introducing more organic farming activities was hardly seen as an option by some respondents. It was namely argued that the cost of organic farming is too high to maintain a profitable farming business. For instance, organic farming requires a different approach to weed control, which is seen as costly, labour intensive and even ineffective in an area as De Veenkoloniën. In addition, farmers in De Veenkoloniën mainly produce for the food processing industry, not for direct human consumption. This means that the cost price of producing organically is hardly passed on in the prices payed by consumers. So, the added value for the farming business of organic farming is being questioned. The Provinces of Groningen and Drenthe do have programmes in place to stimulate farmers to change to more organic farming practices, partially by setting-up learning groups.

3.3 Policy

3.3.1 Influential policies for the farming systems

Respondents were asked to indicate which policies they experience as influencing the farming system and its resilience. When talking about policies during the interviews, two things became clear that make it difficult to discuss specific policy assets in detail: (1) policies are often experienced as a whole, and not through specific policy goals or instruments alone; (2) in-depth knowledge of every aspect of every policy would be required - which is tough for the majority of the people, especially if you are not fully emerged within the policy field. Despite these observations, very useful insights have been gained about the role that policies play within De Veenkoloniën.





The farming system is influenced by the CAP through the direct payments. The direct payments provide the farmers with income support, ensuring a guaranteed amount that flows into the farming business. Some respondents also argued that the direct payments should be regarded as a compensation for the increasing requirements imposed on agricultural practices. However, several respondents felt that the direct payments are in the way of fair market competition; or that it ensures that development is stifled. For instance, it was mentioned that developing a profitable farming business is now less dependent on an individual's own entrepreneurship and business decisions, as a specific amount of income is guaranteed anyway through owning land.

Stakeholder: "Of course, they do want to reduce expenses for direct payments. And that has also a downside. I think that the direct payments should stay, because there are rules, and these are imposed on us by the government. And, for this, we should just receive compensation. I think that is a fair basis."²²

Stakeholder: "Well, what we see is that, for example, entrepreneurship is not necessarily rewarded in the current CAP; but, the fact that you own land is rewarded. And that is something on which some farmers dependent (...) Dependency – in any form whatsoever – ensures that you can insufficiently innovate or do business that would be better for you, or your business, for the future, for your surroundings and those kinds of things."²³

Specifically, the internal convergence mechanism for direct payments introduced in the last CAP reform would have a drastic effect on the income of starch potato farmers, as they would receive less direct payments. Respondents indicated that the effect of the internal convergence was less severe than expected, thanks to the gradual convergence and the merits of the starch potato co-operative Avebe. The co-operative was forced to change their business plan due to the change in direct payments and decided to invest in high-quality potato starch and other products. This made it possible for Avebe to pay the starch potato farmers high prices for their products, even when starch potato prices dropped (see also 3.2 Resilience).

Regarding the direct payment scheme, several respondents specified that they would favour a shift in how the payments are allocated: instead of being based on the number of hectares one



²² Ze willen natuurlijk minder aan directe steun uitgeven. En daar zit ook wel een keerzijde aan. Ik vind dat die directe steun ook wel moet blijven bestaan, omdat er zijn gewoon regels en die worden gewoon opgelegd door de overheid. En daar moeten wij gewoon vergoeding voor krijgen. Vind ik gewoon een hele faire basis.

²³ Nou wat wij zien in het huidige GLB is dat ondernemerschap, bijvoorbeeld, niet per se beloond wordt, maar wel het feit dat je eigenaar bent van grond. Dat is iets waarvan, ook een deel van onze leden [boeren], van afhankelijk is (...) Een afhankelijkheid - in wat voor vorm dan ook - zorgt ervoor dat je eigenlijk onvoldoende kunt innoveren of de zaken kunt doen die misschien wel beter zijn voor jou, voor je bedrijf, voor je toekomst, voor je omgeving en dat soort zaken.



owns, it should be more based on one's performance. This change in allocation of direct payments would feel as fair, as the income support would then become a reward for the way you farm.

As mentioned, sugar beets have a large part in the cropping plan of the farmers. Hence, the abolishment of the sugar quota had a major effect on the farming system. After the EU's decision to abolish the sugar quota, sugar beet cultivation in the EU expanded and led to an oversupply on the market. The oversupply caused that sugar prices dropped, directly affecting the income of sugar beet farmers, also in De Veenkoloniën. Some of the respondents did mention that the sugar co-operative did not anticipate this change well enough.

Generally, respondents felt that the greening measures of the CAP were not very effective, as it hardly changed anything to how farmers work; farmers in De Veenkoloniën already implemented these measures themselves. It hardly affects how the farming system is functioning.

Farmer: "Yes, those [greening measures] are now included in the direct payments. But, in practice, nothing really changed for me. I already implemented greening measures. It was just a shift [in policy], but nothing really changed in practice."²⁴

Some farmers did mention that the greening measures limit possibilities to 'green' their practices in other ways, as they need to comply to the greening measures. In addition, the effectivity of these greening measures, for instance regarding improving biodiversity, is questioned by nature organisations. During the stakeholder check, the question that was asked regarding the greening measures was: if policy was meant to secure things that are going well; or is policy all about directing the course of agriculture? Currently, the greening measures seem to opt for the first situation.

The Dutch implementation of the CAP's Rural Development Programme (Plattelandsontwikkelingsprogramma 3 – POP3) allows farming system actors to apply for a subsidy to develop, innovate or increase the sustainability of the agricultural sector and rural areas. Yet, most of the respondents felt that the POP3 was an ineffective policy aspect. The main issues appeared to be: the bureaucratic, slow and inefficient way of applying for subsidy; the large capital and time investment required for application; and experiencing that only a small amount of subsidy applications is accepted. These issues made it that many of the respondents indicated to be demotivated to apply for POP3 subsidy. In addition, many of the farmers experience that POP3 subsidy does not end up at the farmers at all.



²⁴ Ja nou, die zitten nu bij de toeslagrechten in, inderdaad. Maar in de praktijk is er voor mij niets veranderd. Vergroeningsmaatregelen deed ik altijd wel. Het is gewoon een verschuiving, maar er is in de praktijk niks echt veranderd



Farmer: "The second pillar are POP3 subsidy. I'm, I think, less in favour of them [the subsidies], because they are hardly distributed... There are many... people from different sides and the province are involved... But everyone tries to get its share out of it. But they [the subsidies] are hardly distributed, because the procedure to get the money is very difficult. There have been many projects initiated, such as Innovatie Veenkoloniën. However, the effects of these [projects] are, I think, not yet how they should be."²⁵

Stakeholder: "In principle, the measures [POP3 subsidy] are not suitable for innovation. Because they take way too long. It goes too slow. This means that someone who has a good idea has to wait for 2 years before he or she can get the money."²⁶

A major policy influence comes from regulations related to plant protection products and the use of fertilisers. In general, the experience is that these regulations are becoming stricter; therefore, constraining farming practices more than in the past. Most of the respondents indicated that farmers strongly rely on plant protection products to maintain and increase the quality and quantity of their crops. These respondents showed their concern about whether farmers can continue to protect their crops well-enough and how this would affect their yields. An issue that comes with these increasing regulations appears to be that farmers question if the regulations are based on facts or emotions. Moreover, the speed with which these regulations are implemented is experienced as being too fast: products are banned, without offering alternatives or time for alternatives to be developed. Regarding use of fertilisers, farmers experience that the current regulations do not allow optimal fertilisation of their fields to provide the soils with enough nutrients (also on the long-term); resulting in lower yields and lower crop quality.

Of course, it should be mentioned that when you are in favour of reducing chemical use in the agricultural sector, the stricter regulations are not a bad development. This was also said by respondents that this depends on one's personal view on the situation.



²⁵ De tweede pijler is de POP-gelden. Daar ben ik, denk ik, wat minder positief over, omdat die erg moeilijk loskomen. Daar zit zoveel... daar zitten van allerlei kanten wel mensen op en de provincie... maar uit die pot probeert iedereen te graaien. Maar die is moeilijk los te krijgen, want de procedures om er geld uit te krijgen zijn erg lastig. Er zijn heel veel projecten opgezet, waaronder Innovatie Veenkoloniën. Maar de effecten daarvan zijn, denk ik, nog niet zo zoals ze horen te zijn.

²⁶ De maatregelen [POP3] op zichzelf zijn niet geschikt voor innovatie, in principe. Omdat het veel te lang duurt. Het gaat veel te traag. Dat betekent dat wie een goed idee heeft. Die is 2 jaar verder voordat die daar geld voor kan krijgen.



Next to agricultural-related policies that affect the farming systems, other policies also influence the farming system. These policies can mainly be categorised as transition policies and were mainly mentioned and discussed during the stakeholder check (e.g. energy transition policies, the national climate agreement, policy on stimulating nature inclusive and circular agriculture).

Recently, the Dutch Council of State (highest general administrative court) declared the Dutch policy programme to reduce nitrogen emissions (PAS) invalid. This judgement has and will have consequences for developments in the agricultural sector of the Netherlands. Participants of the stakeholder check also referred to this development, indicating to not know how this would play out.

3.4 Resources & Network

3.4.1 Comprehension of relevant policies?

Despite the previous statement that it was sometimes difficult to discuss specific policies in every detail, respondents in general indicated themselves to have an adequate overview of current policies that influence the farming system. The reasons and relevance for implementing specific policies was, however, less clear to multiple stakeholders, especially farmers. The reason given is that it is experienced that policies change often and that their large numbers sometimes overwhelms them.

Farmer: "I do have a good overview of current policies. Sometimes, however, it is difficult to find out why one has chosen for a certain policy. It's [policy] underlying logic sometimes escapes me."²⁷

It was indicated by both farmers and other stakeholders that getting a right overview and understanding of relevant policies is an active task, i.e. you should search for the right information yourself, or maintain contact with relevant people. A respondent's professional network plays an important role in how he or she gets an overview of the relevant policies. For instance, it was indicated that the professional position of the respondent made it possible for him or her to talk to different people about policies to get an overview; or that he or she had access to the firm's research department.



²⁷ "Ik heb een goed overzicht van het beleid. Alleen het is wel eens lastig na te gaan waarom men voor een 'x' beleid heeft gekozen. En die logica ontgaat je wel eens."



3.4.2 Availability of information on policies?

Respondents indicated that they receive their information about relevant policies from different sources. It was already mentioned that a respondent's professional network plays a major role on how information about policies is accessed; and that gaining information about policies requires the respondents to actively engage in this network. One way of accessing information about policies that was mentioned often, both by farmers and other stakeholders, was to actively engage in the many meetings or workshops that are available.

Farmer: "That [provision of information] is very well organised here in the agricultural sector. You can, especially this time of the year [winter], go to meetings where you are told about... is it policies, about fertilising... well then policies are also a conversation topic. Because how to fertilise also depends on the policies. Informative meetings about plant protection product, which are also dependent on policies. There are thus many things in which policies are interwoven."²⁸

It became clear through the answers of the respondents that the farming system's network is characterised by deliberation and collaboration, especially on organisational level. Organisations often meet each other at meetings where they discuss recent development regarding agriculture and agricultural policies.

Stakeholder: "And that is something we are already trying in De Veenkoloniën for a long time. Here, the government collaborates with businesses to get certain developments started. Businesses take their responsibility in this. At a higher scale – Provinces of North-Netherland – collaboration is happening between governments, businesses and NGO's. That whole group comes together."²⁹

Provincial actors have their own governmental network in which they can access information about the CAP and its national implementation. This network includes the national government, Ministry of Agriculture, Nature and Food Quality and all twelve provinces of the Netherlands. This governmental network was considered useful to gain and share relevant information about



²⁸ "Dat [informatievoorziening] is hier in de landbouw goed georganiseerd is. Je kunt ook, zeker in deze tijd van het jaar, elke dag wel naar een bijeenkomst waar iets verteld wordt over.. of het nou beleid is, of over bemesting is.. Nou dan wordt er altijd wel een stuk verteld over beleid. Want bemesting hangt ook af van een stuk beleid. Gewasbeschermingsmiddelen infobijeenkomsten, dat hangt ook allemaal samen met beleid. Zo zijn er heel veel dingen waar dus dat beleid al in verweven zit."

²⁹ En dat proberen we in De Veenkoloniën nou eigenlijk al behoorlijk lang. Daar wordt samengewerkt tussen overheden en bedrijven om bepaalde ontwikkelingen op gang te krijgen. Daar nemen dus bedrijven hun verantwoordelijkheid in. Op wat grotere schaal zie je dat binnen Agro-Agenda Noord-Nederland.. Daar wordt ook samengewerkt tussen overheden en het bedrijfsleven en NGO's. Die hele groep bij elkaar.



agricultural policies. Moreover, the link with the national level also allowed them to have a better overview of what is happening at EU-level.

Stakeholder: "As Provincial government, you are part of inter-provincial meetings [Interprovenciaal Overleg]. And there you meet as the twelve Provinces of the Netherlands, but you also have a direct link to the national government. And via the national government, you also have a link to changes that happen at European-level."³⁰

These examples show that one's professional network determines how information is accessed. Someone's professional function influences his or her ability to access (inside) information about policies, and at higher levels (national or EU). Moreover, it provides possibilities to discuss policies within the organisation. It was several times mentioned that individual farmers, therefore, not necessarily have the same access to information as other (larger) farming system actors do.

Farmers talk to their (financial) advisors or suppliers to gain information about how policies would apply to their individual situation; advisors or suppliers are 'sparring partners'. Farmers are also a source of information for other farming system actors (e.g. civil servants, advisors, co-operatives) to learn about what plays at the farm-level. Sharing information is, therefore, a mutual exchange. A major role in information sharing about policies was allocated to the Dutch Farmer's Union by most respondents. This sharing of information happened through events, collaboration or personal contact.

Stakeholder: "We collaborate a lot with an organisation as the Farmer's Union [LTO] and that is mostly a good collaboration; because they are an organisation with more 'effectiveness' and a certain reputation. Moreover, they can join in on a lot of dossiers (...) They are also an important source of information, because – as I already told - they are active on multiple dossiers."³¹

Traditional media, such as newspapers or professional journals (e.g. "*Boerderij*", "Akkerwijzer", "Nieuwe Oogst", "Veldpost"), are mentioned by many of the respondents as useful sources to learn more about policies. Information about policies is also sought for on the internet; however, specific websites were not explicitly mentioned by respondents.



³⁰ Je bent als provincie aangesloten bij het IPO [Interprovinciaal Overleg]. En daar zie je elkaar als 12 provincies, maar daar heb je ook weer de verbinding naar het Rijk. En via het Rijk heb je ook weer de verbinding naar de wijzigingen die in Europa plaatsvindt.

³¹ We werken veel samen met een organisatie als bijvoorbeeld LTO [Land- en Tuinbouw Organisatie] en dat is vaak ook een goede samenwerking, want dat is natuurlijk een organisatie die ook meer slagkracht heeft, en ook een bepaalde reputatie heeft. Ook mogelijkheden heeft om op heel veel dossiers mee te draaien (...) Overigens LTO is voor ons ook wel een belangrijke informatiebron, omdat zij - wat ik al zei draaien op vrijwel alle dossiers mee.



Note: some respondents carefully indicated that it was sometimes difficult to make sense of all information available about policies.

3.5 Overall results

In this section, the findings of the research are brought together, leading to an overall assessment of the resilience of the arable farming system De Veenkoloniën. The assessment is based on how farming system actors perceive the influence of policies on their farming system's resilience. Table 3.2 sets out the assessment by providing a score (table 3.1) with justification on the extent the policies are perceived as enabling or constraining the farming system's robustness, adaptability and transformability, per resilience characteristics. Consequently, a coloured ResAT wheel is used to provide a visual overview of the assessment (see also: SURE-Farm D4.1 ResAT - Termeer et al. 2018 for more information on the ResAT).

Table 3.1: Likert scale used for scoring resilience-enhancing or -constraining effects of pol	icies
---	-------

Legend ResAT wheels						
Colour	Grey	Red	Orange	Yellow	Light green	Dark green
Score	0	1	2	3	4	5
Answer:		Not enabling	Slightly	Fairly enabling	Enabling	Very enabling
enabling	Not		enabling			
Answer:	clear	Very	Constraining	Fairly	Slightly	Not
constraining		constraining		constraining	constraining	constraining

 Table 3.2: Assessment of farming system actors' perception of the extent policies enable or constrain the resilience of arable farming in De Veenkoloniën

Question	Score	Arguments
	(scale: 0-5)	
	ROBU.	STNESS
1. To what extent is a focus on the short-term enabled or constrained by polices?	4	A short-term focus is enabled by policies. Many respondents indicated that policies often seem to change, making it tough to plan for the long term. The farming system mainly functions based on the idea of producing the most yields for the least costs, making sure the farm can continue to exist; current policies facilitates this short-term thinking.





		A different example: the direct payments are rewarding owning land; indirectly increasing land prices. This has negative effects on the long term. For instance, farm succession become an expensive affaire. And there seem to be hardly policies in place that better the situations for farm succession.
2. To what extent is protection of the status quo enabled or constrained by policies?	3	The protection of the status quo is fairly enabled. On the one hand, policy instruments, such as the basic payments, promote business-as-usual and ensure that farms can continue to exist. Moreover, the greening measures ensured the incorporation of existing measures in policies. On the other hand, stricter regulations on plant protection products or fertilisers make it harder for farmers to continue with their farming activities as how they always have done. Also, the internal convergence mechanism caused prices for starch potatoes to become more dependent on innovations at the starch potato co-operative.
3. To what extent is the development of buffer resources enabled or constrained by polices?	2	The development of buffer resources is constrained by policies. Farming system actors argued that it is difficult for farmers to save profits that could later act as a financial buffer due to the taxation system. It was mentioned that farmers were able to buffer the impact of the drought in 2018. However, this was seen as one-time only, as farmers have had several good years before the drought. Policies were not felt as contributing to overcoming this shock.
4. To what extent are other modes of risk management enabled or constrained by policies?	2	Modes of risks management are slightly enabled. Shocks caused by extreme weather conditions are a risk in the area. There exists the possibility to take out a weather insurance as a farmer to recover from damage by weather events. Yet, this weather insurance





		was not seen as beneficial by all respondents. Moreover, it is a farmer's individual choice if they want to take out the insurance. It, therefore, only slightly enables risk management.
	ADAPT	ABILITY
1. To what extent is a focus on the middle-long term enabled or constrained by policies?	3	A middle-long term is fairly enabled by the policies. For instance, the gradual convergence of the direct payments in the Netherlands provided farming system actors a bit more time to get used to the new situation. Moreover, there was a certain realisation with respondents that many agri- environmental-related policies were now in place to adjust current practices towards the near future.
2. To what extent is flexibility enabled or constrained by policies?	1	Respondents feel that current policies very much constrain them to respond in flexible ways. Mentioned examples are: regulations on plant protection products and not offering alternatives is largely felt as limiting farmers' possibilities to protect crops. The CAP's greening measures can limit other possibilities for greening. The current application procedure for POP3 subsidy constrain more flexible ways of receiving funding for innovation. The farming system itself seem to not allow for much flexibility either. Mainly due the
		system's strong dependency on the farming of three main crops.
3. To what extent are variety and tailor-made responses enabled or constrained by policies?	2	Variety is slightly enabled by policies, mainly through the possibility to participate in agri- environmental management, or by producing renewable energy. Variety within the farming system is also slightly enabled via the large possibilities for farming system actor involvement. Yet, it is questionable if this





		overcomes silo mentality, as actors are mainly
		part of the same system.
		, ,
		Tailor-made responses are felt as constraining
		by many respondents. It was mentioned often
		that the Dutch implementation of certain CAP
		aspects and national regulations are
		experienced as strict or unsupportive.
		Moreover, policies and regulations are felt to
		he based on non-compliant actors: leading to
		strict regulations that then apply for all
		farmers. Respondents made clear that this
		does not enhance the impression that policies
		are context-dependent.
4. To what extent is social learning	4	Social learning is enabled within the farming
enabled or constrained by		system. The interviews with farming system
policies?		actors provided information about their
		personal networks and how information is
		gained about for instance, policies. The
		findings indicate that interaction at different
		indings indicate that interaction at different
		levels is key to learning; and is easily taking
		place between different actors, at least when
		they actively participate. A lot of events for
		social learning are initiated and taking place.
		Policies do not obstruct social learning to take
		place. It is mostly encouraged by policies to
		engage with others to share knowledge
		engage with others to share knowledge.
	TRANSCO	
1. To what extent is a facus on the		Delicies de not enchle a lang tarm facus. First
1. To what extent is a focus off the	T	Policies do not enable a long-term locus. First,
long term enabled or constrained		changes in policies are experienced by
by policies?		respondents as suddenly, without taking
		longer-term effects in account, e.g. bans on
		plant protection products without offering
		alternatives. Second. the farming system is
		very focused on producing high yields with
		negative effects on the soil quality. Current
		fortilization regulations do not allow formars
		refunsation regulations do not allow farmers
		to take care of their soils to cope with these
		effects on the long-term. Generally, the policy
		environment was experienced as





		unpredictable and constraining long-term planning.
2. To what extent is the dismantling of incentives that support the status quo enabled or constrained by policies?	2	Several policy instruments have a dismantling effect on the status quo. Examples are the internal convergence mechanism or the abolishment of the sugar quota. However, these policy changes do not necessarily enhance transformability, but rather constrain the robustness of De Veenkoloniën. One could think that this would be an incentive for the farming system to change. However, the policy changes are more experienced as shocks that need to be overcome to continue functioning as usual. The internal convergence mechanism did make that starch potato co-operative needed to change their business model. It is, therefore, felt as a large change. Yet, the farming system itself largely functions the same as in the past.
		Some policies initially did affect the status quo, however they did not necessary lead to transformation of the system. It was more an incentive to make sure to find ways to make sure the system can continue to function as usual.
3. To what extent is in-depth learning enabled or constrained by policies?	0	It was not clear if policies enable or constrain in-depth learning.
4. To what extent is the enhancement and acceleration of niche innovations enabled or constrained by policies?	2	The enhancement and acceleration of niche innovations is constrained by current policies. POP3 was specifically installed to enable innovation to take place in rural areas through subsidies. However, respondents indicated that POP3 subsidies are hard to access and are characterised by a slow and bureaucratic process. This constrains innovations to take-off. Moreover, direct





payments currently rewards farmers to continue business-as-usual, instead of innovative activities.



Figure 3.1: ResAT wheel for experienced policy influence on the resilience of De Veenkoloniën





4 Conclusion

To conclude, the research provided insight in how farming system actors perceive the resilience of arable farming in De Veenkoloniën, and how policies influence this resilience. These insights led to a set of key conclusions, presented below:

- 1. De Veenkoloniën is a strong specialised arable farming system. The strong specialisation in the farming of starch potato, sugar beet and wheat is both a strength and a weakness regarding resilience. On the one hand, the strong specialisation led to a farming system that performs very well regarding food production; and can continue to exist in its current form despite several shocks, i.e. is robust. On the other hand, De Veenkoloniën's strong specialisation also leads to a farming system that is to some extent characterised by dependency and conservatism, which limits the adaptive and, even more, the transformative capacity of the farming system.
- 2. Discussions about the resilience of De Veenkoloniën were not new for the farming system actors. The resilience of De Veenkoloniën has already been on the (political) agenda several times before. The farming system actors, however, perceived the farming system as more resilient than in the past. Strategies used to cope with risks and capture opportunities varied from upscaling, diversification, anticipation shocks and social learning. Each of these strategies have their advantages and disadvantages. Concerns about the resilience in the future remain.
- 3. In the past, policies were mainly designed to protect De Veenkoloniën from shocks; currently, policies are more moving towards trying to stimulate adaptation to improve the current farming system. Several policy measures are implemented to stimulate adaptation or led to that adaptation became necessary. Yet, adaptation seems not to be an overall aim of the policies. Interesting is that farmers expressed the feeling of needing to manage their farming business in spite of policies; instead of feeling supported by the policies in their farming activities. Policies seem to be constantly changing, standing in the way of longer term planning at the farm level. Policy interventions that, at first sight, seem small, are experienced by farmers as large changes in how they need to act. Moreover, it is most of the time not clear to farmers why policies or regulations change. This is problematic, as policy interventions ideally should contribute to creating a resilience-enabling environment within farming systems.





- 4. A farming system actor's professional network determines strongly how (new) information about policies is accessed. Active engagement in this network is a requirement to be up-todate about recent policy and regulatory developments; this is done via social events, meetings or discussion boards. Social learning is key to gaining policy information and consists of mutual knowledge exchange. There is a difference between how farmers and other actors (such as regional governments or the agro-industry) gain information about policies.
- 5. The ResAT wheel made visible to what extent policies are perceived as enabling or constraining the resilience of arable farming in De Veenkoloniën. The ResAT wheel shows no clear pattern in that one resilience-capacity is perceived as being more enabled by policies than another resilience-capacity. What is noticeable is that in general policies are hardly perceived as enabling the robustness, adaptability or transformability of the farming system (indicated by a lack of green colours).





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Start date of project: June 2017 Duration: 4 years

D4.3 Bottom-up analysis: How do stakeholders experience the influence of policies on the resilience of farming systems?

Case study report on: fruit and vegetable farming system in Mazovia and Podlasie, Poland

Work Performed by Partner 15, Institute of Rural and Agricultural Development, Polish Academy of Sciences, Poland

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1 Methods and data

1.1 Farming system cases

The selection of the research sample was made after consultation with the employees of the Lublin Agricultural Advisory Center (Lubelski Ośrodek Rolniczy - LODR) and the National Union of Fruit and Vegetable Producer Groups (Krajowy Związek Grup Producentów Owoców i Warzyw - KZGPOiW). In the first phase, specialists from both organizations selected farms that met the conditions of robustness, adaptability, transformation or low-resilience. The address data of these farms were transferred to the organizer of these consultations, who was responsible for conducting the interviews. Potential respondents were initially contacted by phone (they were previously informed by LODR or KZGPOiW advisers about the possibility of choosing their farms for research conducted within SURE-Farm project). During telephone conversation, potential respondents were provided information about the purpose of the study and asked for the opportunity to meet. Out of 12 identified potential respondents, only 7 farmers expressed their will to make an initial "face to face" meeting in the proposed dates. Others motivated their refusal by the lack of time, or reluctance to give interviews, which would have to be recorded. After the visits and the discussions held with these 7 farmers, farms that met the conditions of robustness, adaptability, transformation or low-resilience to highest extent were selected. After that, interviews were conducted.

The robustness case was a farm with both fruit (22 ha) and vegetable (10 ha) production, which contained of 22 ha of own land and 10 ha of rented land.

The adaptability case was a family farm of 5.39 ha, focused on vegetable and cereals production, with plans of starting fruit production (plum orchard). The owners adapt to the market by, for instance, reducing the amount of fertilizers, but they did not plan to start organic farming, due to the costs of certifications.

The transformability case was a farm of 25 ha, focused on vegetables and cereals, co-owned by the father and the son. The wife of the farmer worked outside of agriculture. The farmers changed the farming practices into organic. The owners also rented out rooms for tourists. Farming accounts for about half of the income, and agrotourism for another half.

The low-resilience case was a farm of 24 ha, focused on fruit and cereal production, however only 14.5 ha were cultivated by the owner and the remaining part was rented to another farmer. Because the owner was 72 years old and had no successor, he started downscaling the production in recent years and did not conduct investments in the farm. The owner of the farm is also an owner of a shop.



1.2 Desk research

Supplementary documents were used to become acquainted with the main farming system specific challenges (see: Czyżewski, Bieniek-Majka, Czakowski, 2018; Klepacka, Florkowski, 2016; Stolarska, 2014; Wąs, Kobus, 2018).

1.3 Interviews

During interviews with selected farmers, the guidelines from the Protocol 4.3 were used. During these interviews, apart from the recording, notes were kept, mainly regarding people influencing the decisions made in the surveyed farms. Most often they were family members (spouses, children), advisers, other farmers, suppliers of means of production, recipients, representatives of local authorities. Based on interviews and notes, lists of 7-10 people were set in each case, who, according to respondents, had a big impact on decisions undertaken in the researched farms or had a very good understanding of the problems of functioning of agricultural farms and the fruit and vegetable farming system in Poland. The surveyed farmers provided contact details to those persons and informed them about the possible contact from the researchers. During the initial contact, half of the potential respondents did not agree to participate in the interview. For example, bankers justified this with professional secrecy. The representatives of fruit and vegetable purchasers were also reluctant to give interviews, which they justified with lack of time or the fact that such research is not useful for them. Also, the children of farmers from two farms did not agree for the interview. Their justification was that they were not interested in agriculture and they plan to carry on other occupational activities than farming.

In the case of these 16 respondents, the approach to interview was individualized and depended on their role in the system. Nevertheless, always discussed were issues related to the assessment of the condition and development prospects of farms, with particular emphasis on the fruit and vegetable sector, the most important risks to which the sector is exposed, ways of dealing with these challenges by the farms, assessment of the case study farms relevant to the respondent (respondents were not always referring to a given farm, but they were characterizing problems of the whole group of similar farms) and the policies affecting the farming system.

In total, there were 20 interviews performed. Among the respondents, there were nine farmers, including two involved in ecological farming, four advisors, two sons of farmers, two public administration officials, one land tenant, one representative of the Local Action Group, and one supplier.



1.4 Coding & analysis

For coding of the interviews, a pre-defined general code book was used (deductive coding) In addition, case-specific codes were developed by using an inductive approach to complement the general code book. It consisted of codes related to challenges (lack of workforce) and the ways of coping with mentioned risks and developments. The coding took place with the usage of the qualitative data analysis software ATLAS.ti. The coding was conducted in two rounds – the first round was focusing on challenges of the sector and the ways of coping with challenges, policies affecting as well as resources and networks used to learn about policies by the respondents. The second round of coding was focusing on influence of policies on resilience of the farming system.

2 Regional stakeholder check

2.1 Organisation of stakeholder check

The stakeholder check was organized in the library of the Institute of Rural and Agricultural Development, Polish Academy of Sciences. It took place at 16.09.2019 and took two hours. There were twenty stakeholders invited, including three representatives of the Ministry of Agriculture and Rural Development, three representatives of the Agency for Restructuring and Modernization of Agriculture, two members of the Institute of Agricultural and Food Economics - National Research Institute, three members of horticulture organizations, three farmers, three academic experts in the Common Agricultural Policy and three academic experts in horticulture. Eight people attended the meeting, including two representatives of the Ministry of Agricultural and Food Economics - National Research Institute, two experts in horticulture and two experts in the Common Agriculture, two experts in horticulture and two experts in the Common Agriculture, two experts in horticulture and two experts in the Common Agriculture, two experts in horticulture and two experts in the Common Agriculture.

2.2 Summary of the stakeholder check

The stakeholder check started from the presentation including information about SURE-Farm project, goals of the meeting, definition of the farming system used in the research, literature review regarding challenges of the Polish horticulture system, and the chosen approach to the resilience of farming systems (see: Meuwissen et al., 2019), including the capacities of robustness, adaptability and transformability. The types of policies supporting those capacities and the main characteristics of such policies were also presented (see: Termeer et al. 2018). After that the research goal, method and techniques were described. The results were presented in separate sections: challenges and risks, ways to cope with challenges, policy elements influencing the resilience of the farming system, changes in policies proposed by respondents, influence of the policies on each of the three capacities of resilience. After each section of results, the



discussion on them took place. At the end of the stakeholder check the participants were asked to rate the level of policy support for each capacity on a sheet of paper – on a scale from 1 (not enabling) to 5 (very enabling).

The participants agreed with the main risks and challenges indicated by the respondents, related to income and fair prices, lack of labor force, weather events and climate change, water supply, market and competition, input and maintenance prices and cooperation with other farmers. The main discussion points related to the risks and challenges were related to the market. It was pointed out that the Russian embargo was the reason for shrinkage of the market. It was stressed that the Ministry does not plan to regulate the market, so the farmers cannot count on that. It was also stated that farmers are afraid of overregulation, especially in the organic farming. Another important challenge stressed by stakeholders was the problem with the insurance system, which is highly inefficient.

The main responses to challenges and risks indicated in interviews, namely diversification of practices, intensifying of farming business, reaching out to farming systems actors and upscaling of farming business, were considered by participants as very typical responses. Participants considered diversification as a good strategy, because the specialization in one product is more difficult. It was stressed that the quality of production is very important, more important than quantity. The important point was for stakeholders that farmers have a demanding attitude and even young farmers often see themselves as victims of the market. However, it was also noted that the whole value chain is dominated by the big capital. An important point was also that the fruit and vegetable production have bit different problems, for example, regarding the need of labor force. The strategies that were lacking or not enough visible, according to participants, were professionalization of the profession of farmer, obtaining of knowledge, branding, innovations, searching for own niche, use of agrotechnics to deal with drought and insurance.

The key point related to the policies influencing resilience of the system was that the broad range of stakeholders is not included in the process of policy creation. The problem for farmers to meet the requirements of RDP programme instruments, such as the requirement of 10% increase of production, was stressed. It was pointed out that there is a need for spatial development and improvement of the policy of land management. In addition, the insurance system needs a reform, according to stakeholders. Participants considered the importance of increasing the flexibility of policy important, as well as rationality of regulations. More important should be the goal, not the separate actions. The important notion was that the direct payments are not as important for Polish horticulture as for other sectors, because it consists of 14-15% of the income, compared to around 50% for many other sectors. It was suggested that innovations



should be mostly supported by Regional Development Funds, not the Rural Development Programme, which is already too complicated.

At the end of the meeting, the level of support for robustness of the farming system was estimated by participants on average at the level of 2,86 (on a scale 1-5), for adaptability it was on average 2,29, and for transformability - 1,86. It suggests that, although none of resilience capacities is very enabled, relatively the policy enables robustness the most, and transformability the least.

2.3 Integration of stakeholder check

The results of the stakeholder check were integrated in the results of the analysis by adapting the ResAT wheel colors after the discussion with stakeholders. There were no adaptations of the wheel regarding stability or transformability. In the case of adaptability, the middle-term focus was changed from the level 3 to level 2. The change amounted to one point on a scale and was the result of the recognition of participants' arguments regarding the difficulties to create not only long-term, but also middle-term plans by the actors.

3 Synthesis

3.1 Challenges

Income and fair prices were considered by around 3/4th of the respondents as a very important challenge – *"First and foremost - concerns about prices"*¹. The respondents were pointing out that the prices of their products are not rising – *"The price of vegetables has remained practically unchanged for 20 years"*². Also, the fluctuations of prices are a challenge – *"So that this price jump would not be so drastic that profitability, even minimal, would be in every year, not the frenzy that once cauliflowers are PLN 5 each, and in the second year PLN 0,80"*³.

Another very important challenge is lack of workforce, which is increasingly problematic in recent years – "As far as employees are concerned, it is getting harder"⁴. The problem can be so serious, that farmers resign from particular crops, because of this issue – "We

^{1 &}quot;przede wszystkim - obawy o ceny" (Interview 1, pp. 4)

² "cena warzyw praktycznie nie zmieniła się od 20 lat" (Interview 2, pp. 2)

³ "żeby ten skok cen nie był taki drastyczny, żeby opłacalność, choćby minimalna, była w każdym roku, a nie szał, że raz kalafiory są po 5zł, a w drugim roku po 80 groszy." (Interview 5, pp. 2)

⁴ "Jeżeli chodzi o pracowników jest coraz ciężej" (Interview 2, pp. 2)



resigned from broccoli this year because of a lack of hands to work. This is a huge problem"⁵. The problem seems to be especially serious in the vegetable production – "It seems to me that the labor market is the biggest challenge at this point in particularly vegetable segment"⁶. One of the reasons for this challenge, according to the respondents, is the emigration of Polish workforce abroad, where the salaries are higher – "our people work hard in the West, but the money they receive there … here is the clue"⁷. Another indicated factor is the ageing of the population – "In agriculture, it is always said that the village is aging, and it is true that when you drive around the village you see abandoned farms, you see a small number of people, you see very little young people involved in production"⁸.

Another main risks are weather events and climate change. The main problem is drought – "This is specifically about rainfall"⁹; ""Floods are not scary for us in our area, only drought"¹⁰. However, other weather events can be also problematic – ""There was frost last year. It froze a lot"¹¹. The related challenge is water supply – "Now we have a large water shortage. Now winter this year has not been kind to us in terms of the amount of snow cover remaining and like no year, as I noticed, there is no water supply now. And this will definitely be a problem for the current season of 2019"¹².

Many respondents indicated challenges related to market and competition. One of the problems are low prices in years, when there is a lot of product on the market – "Lots of commodities and low prices should be expected."¹³ The international competition is increasing the pressure on producers – "There are many orchards in Ukraine and they have their apples. And they have of course cheaper. We can slowly forget about this market. They are about to sell to

⁵ "Z brokuła żeśmy w tym roku zrezygnowali ze względu na brak rąk do pracy. To jest ogromny problem." (Interview 3, pp. 2)

⁶ "Wydaje mi się, że rynek pracy jest największym wyzwaniem w tym momencie w tym segmencie szczególnie warzywniczym." (Interview 3, pp. 3)

⁷ "nasi pracują na zachodzie ciężko, ale te pieniądze, które tam otrzymują… tu jest clue." (Interview 5, pp. 2)

⁸ "W rolnictwie ciągle się o tym mówi, że wieś się starzeje i to jest prawda, że jak się przejedzie po wsi to widzi się opuszczone gospodarstwa, widzi się niewielką ilość ludzi, mało się widzi ludzi młodych zaangażowanych w produkcję." (Interview 9, pp. 2)

⁹ "Tu chodzi konkretnie o opady." (Interview 9, pp.3)

¹⁰ "Powodzie nam niestraszne na naszym terenie, jedynie susze." (Interview 14, pp.9)

¹¹ "W ubiegłym roku były przymrozki. Wymroziło bardzo dużo." (Interview 1, pp.3)

¹² "teraz mamy duży niedobór wód. Teraz zima w tym roku nie była łaskawa dla nas pod względem ilości zaleganej pokrywy śnieżnej i jak żadnego roku, jak zauważyłem, nie ma takiego zasobu wód w obecnym czasie. I to będzie na pewno bolączką na obecny sezon 2019." (Interview 18, pp.1)

¹³ "Należy się spodziewać mnóstwa towaru i niskich cen." (Interview 1, pp.4)



us.^{"14} It is also difficult for farmers to supply big supermarket chains – "It doesn't make sense to deliver to the market for half free. They pay no one knows when. They only pay back if it sells. There is an uncertain situation, that's why I'm withdrawing from it^{"15}.

Increasing input and maintenance prices bring other challenges – "Costs increase every year. This is inevitable"¹⁶. Respondents indicate that the relation between costs and income is less and less profitable – "Already skipping the machines themselves, which are expensive, need a lot of investment. All fertilizers and means of protection, means of production - their prices are rising when prices of crops fall."¹⁷ The cost of labor force is for many respondents also very high – "There are people available for work, only the money they want to get is not the money we can pay."¹⁸.In addition, costs of insurances are considered very high – "Very high insurance costs for vegetable crops or even too high prices, barrier rates"¹⁹.

The collaboration, both horizontal and vertical, is problematic due to lack of trust and will to cooperate. Respondents suggest that it might be related to mentality - "Maybe it results from the mentality that it's better if your neighbor has it worse. God forbid, if he has it better, then he is already an enemy. There is too little neighborhood exchange"²⁰. They point out also the lack of local leaders - "We lack leaders to pull it. Each of us is an individual. Everyone would like to work on their own, everyone would like to work for themselves. We are socially very poorly developed"²¹.

Another challenge for some respondents is farm succession – *"There is no successor"²²*. The paradox was indicated, that the farmers who invested in education of their children, currently have problems with farm succession because of that – *"Let's not kid ourselves,*

¹⁴ "na Ukrainie jest mnóstwo sadów i mają swoje jabłka. I mają oczywiście tańsze. O tym rynku możemy pomału zapominać. Oni zaraz zechcą nam sprzedawać." (Interview 1, pp.4)

¹⁵ "Do marketu też za pół darmo bez sensu oddawać. Pieniądze też oddają nie wiadomo kiedy. Raz oddają, raz jak się sprzeda. Jest niepewna sytuacja, dlatego się z tego wycofuję." (Interview 20, pp.3)

¹⁶ "koszty wzrastają co roku. To jest nieuchronne" (Interview 2, pp.2)

¹⁷ Już pomijam same maszyny, które są drogie, dużo nakładów potrzebują. Wszystkie nawozy i środki ochrony, środki do produkcji to ich ceny rosną przy spadku cen płodów." (Interview 9, pp.2)

¹⁸ "Ludzie są do pracy, tylko pieniążki jakie chcą uzyskać nie są pieniędzmi, które my jesteśmy w stanie zapłacić." (Interview 11, pp.6)

¹⁹ "Bardzo wysokie koszty ubezpieczenia upraw warzywnych czy nawet zaporowe ceny, zaporowe stawki." (Interview 11, pp.4)

²⁰ "Może to wynika z mentalności, że najlepiej jak sąsiadowi jest gorzej. A już nie daj Boże, jak jest lepiej, już jest wróg. Za mało jest wymiany międzysąsiedzkiej." (Interview 9, pp.8)

²¹ "brakuje nam liderów, którzy by to pociągnęli. Każdy z nas jest indywidualnością. Każdy chciałby działać na własny rachunek, każdy by chciał pracować dla siebie. Bardzo słabo jesteśmy rozwinięci społecznie." (Interview 19, pp.11)
²² "Nie ma następcy" (Interview 8, pp.2)



that big farmers who thought about the future, educated and gave a good school to their children, gave a good background. These children went, studied, and graduated from good universities and good faculties. At this point, we have a paradox. Farmers have educated their children; they are well prepared to present times and have gone away. They see no future in agriculture. They went further, to the others."²³

Respondents point out also to the challenge of plant diseases – "The pressure of pests and plant diseases is also considerable"²⁴. Some farmers had in the past problems with obtaining plant protection products, which put their crops at risk – "Two years ago there was a lack of plant protection products."²⁵

3.2 Resilience

Results of the research suggest that according to respondents the farming system is partly capable of dealing with risks. On the one hand, some respondents point out that the farming system can cope with difficulties, and even develop - *"This sector is even developing recently in these areas."*²⁶. On the other hand, some respondents are pessimistic about the chances of the sector to deal with risks – *"I think, at least it seems to me that with the current fruit production market we have no chance"*²⁷. There were also opinions, which suggested that the system would change, because some farmers will manage to deal with risks, and others will not – *"I think it will change slowly and it will be like in the West. Larger farms will absorb the smaller ones. Small farms can't do it. It will be like in the West, in one village there will be two, three farmers who will absorb these smaller farms."*²⁸

According to respondents, the farming system is partly capable of capturing opportunities. Some respondents indicated that it is easy to conduct production - "It's easy to survive and save money to invest in machinery and equipment that will facilitate undertaking of

²³ "Nie oszukujmy się, że duzi rolnicy, którzy myśleli o przyszłości wykształcili i dali dobrą szkołę swoim dzieciom, dali dobrą szkołę. Te dzieci poszły, studiowały, skończyły dobre uczelnie, dobre kierunki. W tym momencie mamy paradoks. Rolnicy wykształcili swoje dzieci, te są dobrze przygotowane do dzisiejszych czasów i poszły sobie. Nie widzą przyszłości w rolnictwie. Poszły dalej, do innych." (Interview 19, pp.9)

²⁴ "Presja szkodników, chorób roślin też jest spora." (Interview 2, pp.2)

²⁵ "Dwa lata temu wystąpił brak środków ochrony roślin." (Interview 16, pp.5)

²⁶ "Ten sektor nawet ostatnio się rozwija na tych terenach." (Interview 5, pp.1)

²⁷ "Ja sądzę, przynajmniej tak mi się wydaje, że przy obecnym rynku produkcji owoców nie mamy szans." (Interview 19, pp.3)

²⁸ "Myślę, że powoli będzie się zmieniać i będzie jak na zachodzie. Większe gospodarstwa będą wchłaniać te mniejsze. Małe gospodarstwa nie dają rady. Będzie jak na Zachodzie, w jednej miejscowości będzie dwóch trzech gospodarzy, którzy wchłoną te mniejsze gospodarstwa." (Interview 10, pp.5)



some kind of production"²⁹. Others point out on chances, which are not sufficiently captured, in their opinion – "We certainly do not take advantage of the opportunities provided by organic production"³⁰. Risk aversion was stressed as an important factor which makes it difficult for some farmers to capture opportunities –

"There is a group of people who are afraid of risk. This can be seen especially when investing in farm development. If there is a 60,000 bonus, then farmers would be more willing to apply, because it is a bonus, they get this money, spend it and there is no problem. However, it is known that it is for a certain group of a certain economic size. If later the farmer is already a larger farmer and he qualifies for modernization, for example, there are other rules, because you must first spend your money or use a loan and submit a payment application. The agency then refunds part of the costs. When it comes to specifics, some withdraw, because they are afraid of loans that they thought through, because it's different if they get money first, and different if they must spend and apply for a refund. Some are giving up at that moment, almost at the final, because they are determined first, that they will invest, they will apply, and then they are afraid of it."³¹

There are multiple ways for respondents and the farming system to cope with mentioned risks and developments, as well as to capture opportunities. Many respondents indicate the diversification, especially of non-agricultural practices, as the important strategy. Especially processing and packaging was considered an important activity – *"The most important is the processing of what we produce"*³²; *"Only with this packaging we can exist."*³³. However, other means of diversification are also used – *"And an additional source of income is agritourism, renting*

²⁹ "łatwo jest przeżyć i zaoszczędzić środki na zainwestowanie w maszyny, w sprzęt, który ułatwi podjęcie jakiejś produkcji" (Interview 9, pp. 1)

³⁰ "Nie wykorzystujemy na pewno szans, jakie niesie produkcja ekologiczna" (Interview 5, pp. 7)

³¹ "Jest pewna grupa osób, która obawia się ryzyka. Można to zauważyć szczególnie przy inwestycjach w rozwój gospodarstwa. Jeżeli jest premia 60 tysięcy, to wtedy rolnicy chętniej by się o to ubiegali, bo to jest premia, oni dostają te pieniążki i wydają i jest bez problemu. Tylko wiadomo, że to jest dla pewnej grupy o określonej wielkości ekonomicznej. Jeżeli później rolnik jest już większym rolnikiem i on się kwalifikuje do modernizacji na przykład, są inne zasady, bo trzeba najpierw wydać swoje pieniążki albo posiłkować się kredytem i złożyć wniosek o płatność. Agencja wtedy refunduje część kosztów. Jak przychodzi do konkretów, to niektórzy się wycofują, że oni się boją kredytów, że oni przemyśleli, że jednak nie, bo co innego, jeżeli dostaną te pieniążki najpierw, a co innego, jeżeli mają swoje wydać i ubiegać się o refundację. Niektórzy w tym momencie rezygnują. Prawie przy finale, bo najpierw są zdecydowani, będą inwestować, będą się ubiegać, a później obawiają się tego." (Interview 17, pp. 5)

³² "najważniejsze jest przetwarzanie tego, co produkujemy" (Interview 12, pp.4)

 $^{^{\}rm 33}$ "Tylko z tego pakowania możemy egzystować." (Interview 4, pp.4)



rooms^{"34}. Diversification of agricultural practices is also used – "We have it all, just like at the zoo, a little bit of everything^{"35}. It is common to combine fruit and vegetable production – "There are two branches of production, fruit and vegetable growing^{"36}. One of the advantages of diversification is the possibility of collecting crops in different times, which diminishes the number of workers needed at one particular time – "We harvest vegetables sooner and later orchard, the apples"³⁷. Farmers also combine horticulture with cereal cultivation – "Garlic, pumpkin, potatoes, triticale."³⁸

Another strategy is to intensify farming business. It is used to cope with lack of workforce – *"Farmers have greater access to the machinery park, to appropriate machines that replace manual work"*³⁹. It plays also an important role in coping with drought – *"There must be irrigation"*⁴⁰. Both conventional and organic farming is using intensification – *"Organic farming is also not an old-fashioned agriculture, it is modern farming. People invest in tractors, equipment, and sprayers"*⁴¹. Respondents pointed out also the importance of the facilities to store the products – *"They must have a storage room, they must have a warehouse"*⁴².

Reaching out to farming system actors is another way to cope with challenges – "The future is in group actions"⁴³. Being part of a producer group is helping farmers to sell their product – "This is probably the most important element of the group, that this infrastructure allows that a person with this good does not get lost in the field. Especially wanting to do a commercial crop, which is large"⁴⁴. Cooperating with other farmers can be a way to deal with lack of workforce - "They can borrow these people from each other"⁴⁵. Cooperation allows also sharing knowledge - "A lot of farmers come all the time to get advice if they could produce something there. Everyone

³⁴ "A dodatkowym źródłem dochodu jest gospodarstwo agroturystyczne, prowadzenie wynajmów pokoi." (Interview 11, pp.3)

³⁵ "To mamy tego wszystkiego, tak jak w zoo, wszystkiego po troszeczku." (Interview 6, pp.15)

³⁶ "są dwie gałęzie produkcji, sadownicza i warzywnicza." (Interview 1, pp.1)

³⁷ "warzywa zbieramy wcześniej a później sad, później jabłka." (Interview 1, pp.6)

³⁸ "Czosnek, dynia, ziemniaki, pszenżyto." (Interview 14, pp.1)

³⁹ "Rolnicy mają dostęp większy do parku maszynowego, do odpowiednich maszyn, które zastępującą pracę fizyczną" (Interview 5, pp.2)

⁴⁰ "Musi być nawadnianie." (Interview 7, pp.6)

⁴¹ "Rolnictwo ekologiczne też nie jest rolnictwem zaściankowym, tylko jest rolnictwem nowoczesnym. Ludzie inwestują w ciągniki, w sprzęt, w opryskiwacze." (Interview 13, pp.7)

⁴² "Muszą mieć przechowalnię, muszą mieć magazyn" (Interview 19, pp.12)

⁴³ "przyszłość jest w grupowych działaniach" (Interview 5, pp. 2)

⁴⁴ "To jest chyba ten najważniejszy element grupy, że ta infrastruktura pozwala na to, że człowiek z tym towarem nie przepada na polu. Szczególnie chcąc robić uprawę towarową, czyli dużą." (Interview 3, pp.10)

⁴⁵ "Pożyczają może sobie tych ludzi jedni drugim" (Interview 3, pp.5)



is looking for something"⁴⁶. Cooperation with family members help to ensure the succession of the farm – "In 2018, we gave our son part of the farm. We are working together at the moment"⁴⁷.

Upscaling of farming business is a strategy used by many farmers. It can be related to buying or renting land - "I would definitely like to enlarge my area, which I cultivate."⁴⁸; or to making other investments, in machines or facilities – "We built the greenhouse ourselves"⁴⁹.

Respondents see the importance of anticipating events, especially in relation to weather events and plant diseases – *"The farmer also predicts. Whether it can be frost, hail or drought, everyone is trying to save their plants in some way. They may not foresee everything, but they predict certain things. They introduce varieties that show resistance to diseases, pests and tolerance to weather conditions. Not everything can be predicted, but from what I see, it is so. They try to utilize various streams and rivers. There are not many of these streams or rivers, but they introduce these varieties, where there is water close by, which could be quickly hydrated. Rather, there is this awareness of it"⁵⁰.*

The important strategy is searching for new markets to sell the products. Some of them search for international markets – "Cauliflowers and broccoli are sold very well abroad. We have good customers who pay well and good prices, much higher than in Poland"⁵¹. Others decide to sell in retail - "Only the retail. We analyze the market, what the customer is interested in and whether it is possible to sell in retail. With our quantities, only retail saves us, wholesale is the cost of preparing large quantities of goods, and we do not have such."⁵² There are also initiatives of creating a brand - "We want to bring together many producers under one common brand, to promote it and to associate with one, not with many with products, make a product basket.

⁴⁶ "Cały czas bardzo dużo rolników przyjeżdża po porady, czy mogliby coś tam produkować. Każdy poszukuje czegoś." (Interview 13, pp. 4)

⁴⁷ "W roku 2018 przekazaliśmy synowi część gospodarstwa. W tej chwili pracujemy wspólnie." (Interview 11, pp. 2)

⁴⁸ "Chciałbym na pewno powiększyć swój areał, który uprawiam." (Interview 14, pp. 3)

⁴⁹ "szklarnię sami zbudowaliśmy" (Interview 7, pp. 3)

⁵⁰ "Rolnik też przewiduje. Czy to może być przymrozek, czy grad, czy susza, każdy stara się w jakiś sposób swoje rośliny ratować. Może nie wszystko przewidzi, ale pewne rzeczy przewiduje. Wprowadzają odmiany, które wykazują odporność na choroby, na szkodniki czy tolerancję na warunki pogodowe. Nie wszystko się da przewidzieć, ale z tego co ja widzę to tak jest. Starają się zagospodarowywać różne strumyki, rzeczki. Tych strumyków, rzeczek to dużo nie ma, ale żeby też wprowadzać te odmiany, gdzie jest blisko woda, które można byłoby szybko nawodnić. Tutaj raczej jest ta świadomość tego." (Interview 13, pp. 6)

⁵¹ "Kalafiory, brokuły sprzedają się bardzo dobrze za granicą. Mamy dobrych odbiorów, którzy dobrze płacą i dobre ceny, dużo wyższe niż w Polsce." (Interview 4, pp. 3)

⁵² "Tylko detal. Analizujemy rynek, tym czym klient jest zainteresowany i to czy jest możliwość sprzedania w detalu. Przy naszych ilościach ratuje nas tylko detal, hurt to są koszty wyjazdu na giełdę i przygotowania dużych ilości towarów, a my takich nie mamy." (Interview 6, pp. 15)



Secondly - we want to make a local shelf with local products. Small but nevertheless that the brand should also be visible to our inhabitants"⁵³.

Respondents indicated also innovations as a strategy to cope with challenges – "We, as a farm or a company, are very much in favor of this type of thing. We try to introduce as much innovation as possible. It is not an art to work hard, but you also have to do it smartly, which is what we can mechanize - we do it"⁵⁴.

Many respondents indicate that additional income helps to deal with challenges – "There are few who only do farming, because they won't survive. All our neighbors additionally work. They treat work in agriculture as an addition"⁵⁵. Some farmers travel abroad for work – "Me too, there was a time when I went abroad to make some extra money. I went to Paris to make some extra money."⁵⁶

Taking out insurances is a strategy used by some farmers, although the prices are considered very high – "I try. Cereals I insure, vegetables - I try. But the rates are prohibitive. The maximum rate for vegetables is calculated at 170 thousand times 5%. 8,000 per hectare means very high rates"⁵⁷. Therefore, some farmers insure just part of their business – "They use it. Only sometimes, it may be not necessarily in full, comprehensively, only partially. But those crops on which farms highest income is based, they insure it."⁵⁸ However, others do not take any insurance, in some cases because of negative experience in the past - "We've insured for 15 years, maybe more. We have not been insuring for some time. There was hail and we did not receive compensation."⁵⁹

⁵³ "chcemy skupić wielu producentów pod jedną wspólną marką, żeby ją promować i żeby kojarzyła się jedna, a nie z wieloma produktami, zrobić koszyk produktowy. Po drugie – chcemy zrobić półkę lokalną z produktami lokalnymi. Małą, ale jednak, żeby marka się opatrzyła też naszym mieszkańcom" (Interview 12, pp.8)

⁵⁴ My jako gospodarstwo czy firma jesteśmy bardzo za tego typu rzeczami. Staramy się wprowadzać na ile to możliwe te innowacyjności. To nie sztuka się napracować, tylko też trzeba to robić z głową, czyli co można sobie maksymalnie zmechanizować to robimy." (Interview 13, pp. 10)

⁵⁵ "Mało jest takich co się tylko rolnictwem zajmują, bo się nie wyżyje. Wszyscy nasi sąsiedzi dodatkowo pracują. Pracę w rolnictwie traktują jako dodatek." (Interview 6, pp.23)

⁵⁶ "Ja też, był taki czas, że na saksy jeździłem, żeby dorobić. Jeździłem do Paryża, żeby dorobić." (Interview 6, pp.23)

⁵⁷ "Próbuję. Zboża tak, warzywa próbuję. Ale stawki są zaporowe. Stawka dla warzyw maksymalnie jest wyliczona na 170 tysięcy razy 5%. 8 tysięcy za hektar to bardzo wysokie stawki." (Interview 11, pp. 4)

⁵⁸ "Korzystają. Tylko czasem może nie konieczne w całości, kompleksowo, tylko połowicznie. Ale te uprawy, na których bazują gospodarstwa, na których największy mają dochód to ubezpieczają." (Interview 18, pp. 3)

⁵⁹ "Ubezpieczaliśmy przez 15 lat, może więcej. Od jakiegoś czasu nie ubezpieczam. Był grad i nie dostaliśmy odszkodowania." (Interview 1, pp. 7)



3.3 Policy

The policy that respondents most often indicated as influencing the farming system was investment in physical assets within Pillar II – "People have better equipment. If it wasn't for this funding, they wouldn't have bought it for cash, they wouldn't be able to afford it"⁶⁰. Some respondents used these funds already multiple times – "Within the modernization, we used two; even now we have signed a contract for the third modernization"⁶¹. However, some respondents indicated the lack of flexibility of this instrument, which is problematic for them – "Each action is a five-year commitment, which means that a committing person, who wants to use these programs, must develop a business plan, which is often a theoretical business plan. Because life really, especially in agriculture, is so changeable and dynamic that it is difficult to persevere even in an optimistic and seemed real intentions, because life is life."⁶² Another problem is the requirement of increasing production or acreage, mostly due to lack of land available for purchase – "There is one problem, or production must be increased or the acreage increased within 5 years. With today's land prices, it is difficult. In addition, no one wants to sell the land"⁶³. Also, extensive controlling system is negatively perceived by respondents – "I have the impression that we are treated as fraudsters, as people who need to be bombarded with controls"⁶⁴.

Knowledge transfer and advisory services were considered important for the system. Many farmers indicated, that they use the services of public advisors – *"From the Agricultural Advisory Center. I was also privately, but it's expensive, and here I am content. They prepared not only the application but also the business plan. They helped me a lot, because this business plan had to be improved, adapted to the prices of machines. It was corrected 7 times. They are very scrupulous there. Because if you order a machine for PLN 3800 and it costs 4200, you have to change. And such small changes are time consuming."⁶⁵ However, some respondents*

⁶⁰ "Ludzie mają coraz lepszy sprzęt. Gdyby nie to dofinansowanie, to nie kupiliby tego za gotówkę, nie byłoby ich stać." (Interview 3, pp.9)

⁶¹ "W ramach modernizacji skorzystaliśmy z dwóch, nawet teraz podpisaliśmy umowę na trzecią modernizację." (Interview 13, pp.4)

⁶² "Każde działanie jest zobowiązaniem pięcioletnim, czyli taka osoba zobowiązująca się, która chce skorzystać z tych programów musi opracować biznesplan, który często jest teoretycznym biznesplanem. Bo życie naprawdę, szczególnie w rolnictwie jest tak zmienne i dynamiczne, że trudno jest wytrwać nawet w optymistycznych i jakby się wydawało prawdziwych zamierzeniach, bo życie jest życiem." (Interview 15, pp.5)

⁶³ "Jest jeden problem, albo w ciągu 5 lat należy zwiększyć produkcję albo zwiększyć areał. Przy dzisiejszych cenach ziemi to jest trudne. Ponadto nikt nie chce sprzedawać ziemi." (Interview 10, pp.4)

⁶⁴ "Ja mam wrażenie, że jesteśmy traktowani jako oszuści, jako ludzie, których trzeba bombardować kontrolami." (Interview 13, pp.6)

⁶⁵ "Z ODR. Byłem prywatnie, ale raz że drogo, a tam jestem zadowolony. Sporządzili nie tylko wniosek ale i biznesplan. Bardzo mi pomogli, bo ten biznesplan musiał być poprawiany, dostosowywany do cen maszyn. Był poprawiany ze 7



complained about the too narrow scope of the advisory, focused mostly on administrative issues – "I've always thought and now think that this advice has gone the wrong way. It used to be said and only this probably remained that this consultancy is an extended arm of the administration and it is only dealing with it at the moment. It does not take care of the farmer enough to help him."⁶⁶

Small farmers support within Pillar II was also indicated as an instrument, which is important for the sector. However, the regulations are considered too detailed, which makes it more difficult for farmers to use the funds in the most suitable way – "I would like to buy a small tractor that enters everywhere, into an orchard, into crops, but I can't. Because according to the official, this is not a typical agricultural machine, and I gave up because he didn't like it. Well, I don't understand it."⁶⁷

Young farmers support is considered a means to increase the acreage - *"He utilized a "young farmer". As a result, he expanded the farm by 3 ha."*⁶⁸; or make investments, although it does not affect the decision of young farmers to start working in agriculture. The support is considered too small to be significant – *"The support for the young farmer is negligible"*⁶⁹.

Social security policy is considered by respondents as negatively affecting the availability of labor force – "Now they have 500+ and there is no one to collect raspberries. It really is so."⁷⁰ It is also considered a factor, which stops small farmers from selling their lands – "We have another aspect, because we have the next thing like social security. It also holds this land close to these people."⁷¹

Weather risk management was considered by respondents as inadequate – "Local governments support farmers in draining water that flows away irreversibly, and they do not think

razy. Oni są tam bardzo szczegółowi. Bo jak maszynę zamówi się za 3800 zł, a ona kosztuje 4200, to trzeba zmieniać. I takie drobne zmiany są czasochłonne." (Interview 6, pp. 19)

⁶⁶ "Od zawsze, jak i teraz uważam, że to doradztwo poszło w złą stronę. Kiedyś się mówiło i chyba tylko to zostało, że to doradztwo to jest przedłużone ramię administracji i ono tylko tym się zajmuje w tej chwili. Za mało zajmuje się rolnikiem, żeby mu pomóc." (Interview 9, pp.11)

⁶⁷ "Chciałbym kupić mały traktor, który wszędzie wjedzie, w sad, w uprawy, to nie mogę. Bo według urzędnika to nie jest maszyna typowo rolnicza, no i zrezygnowałem, bo jemu się nie podobało. No choroba, nie mogę tego zrozumieć." (Interview 6, pp.24)

⁶⁸ "Skorzystał z młodego rolnika. Dzięki temu powiększył gospodarstwo o 3ha." (Interview 11, pp.2)

⁶⁹ "Premia dla młodego rolnika jest znikoma." (Interview 19, pp.9)

⁷⁰ "Teraz mają 500+ to nie ma komu zbierać malin. Tak naprawdę jest." (Interview 7, pp.14)

⁷¹ "Mamy jeszcze następny aspekt, bo mamy następną rzecz jak ubezpieczenia społeczne. To też trzyma tą ziemię przy tych osobach." (Interview 19, pp.7)



about collecting it. And we need to gather it."⁷² The insurance systems are not considered reliable – "We do not insure for another one because insurance costs and insurers are dishonest. This is one more point. I do not insure. I have not insured for many years."⁷³

Respondents do not consider the basic payment scheme as especially important for the horticulture. They rely more on the Pillar II – *"under the RDP there is quite a lot of money to support farmers"*⁷⁴. Pillar one is not supported by respondents. Many of them consider them a way to maintain the status quo, where the land is kept by small farmers just to obtain the payments – *"Sometimes subsidies are important, but in this case it is more damaging. A farmer with the equipment he has is able to cultivate several times more land than he has, but the amount of available land is limited. And the circle closes. In agriculture, there is really a large number of people who are not associated with this agriculture, and these subsidies keep them. They don't sow, don't plow"⁷⁵.*

Respondents suggested different changes to enhance the resilience of the farming system. A common suggestion was diminishing the bureaucracy – "I don't know how realistic it would be, I'd rather like to de-bureaucratize it all."⁷⁶ Respondents complained that the bureaucracy is so complicated that it is not possible to deal with the procedures by themselves – "I want to write such an application. If I sit down to such an application, I will not write it in my life, I have to go to the company or a friend who deals with it professionally, pay him, because that is how it works in Poland"⁷⁷. It is also a reason for delays in receiving funds, which is problematic – "Even the worst - it takes so long. This is due to all this paperwork, because you have to go through everything. And to put it through, you need a lot of time and it all slips away"⁷⁸.

⁷² "Samorządy wspierają rolników w zakresie osuszania, spuszczania tej wody, która odpływa niepowracalnie, a nie myślą o zatrzymaniu. A nam trzeba ją gromadzić." (Interview 5, pp.10)

⁷³ "Nie ubezpieczamy o następne, bo koszty ubezpieczeń i ubezpieczyciele są nieuczciwi. To jest jeszcze jeden punkt taki. Ja nie ubezpieczam. Od wielu lat nie ubezpieczam." (Interview 16, pp.16)

⁷⁴ "w ramach PROW-u są dosyć duże pieniądze na wsparcie dla rolników" (Interview 5, pp. 4)

⁷⁵ "czasami dopłaty są ważne, a w tym wypadku to bardziej szkodą. Rolnik mając ten sprzęt, który ma, jest w stanie uprawiać kilka razy nawet więcej ziemi niż posiada, ale ilość dostępnych gruntów jest ograniczona. No i kółko się zamyka. W rolnictwie jest naprawdę duża ilość osób, która nie jest z tym rolnictwem związana, a trzymają ich te dopłaty. To takie nie sieje, nie orze." (Interview 5, pp. 8)

⁷⁶ "Nie wiem na ile by było to realnie, chętniej chciałbym odbiurokratyzować to wszystko." (Interview 3, pp.8)

⁷⁷ "Ja chcę sobie napisać taki wniosek. Jeżeli ja siadam do takiego wniosku, ja go w życiu nie napiszę, muszę sobie iść do firmy bądź do znajomego, który się tym zajmuje specjalistycznie, zapłacić mu, bo tak to funkcjonuje w Polsce." (Interview 3, pp.8)

⁷⁸ "Jeszcze najgorzej - to tyle trwa. To jest spowodowane tą całą papierologią, bo to trzeba wszystko przerzucić. A żeby to przerzucić, trzeba kupę czasu i to wszystko ucieka" (Interview 3, pp.9)



Many respondents indicated that the policy should ensure sales of agricultural products – "Ensure the market, first of all. This is the basic thing. The most important thing is to ensure sales"⁷⁹. However, those respondents do not indicate how such policy change should be executed – "I think that the state would care, to some extent, I am not saying entirely, about this price. There is a chance. I do not know the procedures, how it would look, but I see it as a chance to somehow this market, so to speak, stabilize at some price level as it should be"⁸⁰.

Some respondents suggested that credits are a better solution than subsidies, because they require to think the projects through and increase the chance for success of projects – "even my colleague and I came to the conclusion that maybe it was better not to give these subsidies, but to give such good loans properly. Let it not be that this is a free subsidy, only a loan. It may have lower interest rates, but the loan must always be paid back. Maybe these groups would work a little better"⁸¹.

Some indicated, that the subsidies should be abolished altogether – "this interventionism is very big. I have always been of the opinion that the Union as a whole is very good, i.e. without borders, capital flow, etc. - it should be. On the other hand, to abolish agriculture subsidies altogether, but everywhere"⁸².

Other respondents point out that it might be hard to encourage new entrants to agriculture without subsidies – "But the farmer must also feel the money. If the farmer feels a bit of this money, that something is from this job, he will do it. In this way, the young must be encouraged. We will not do everything just for the glory of our homeland. Firstly, the monetary effect of the incentive that a few pennies stays, that you can invest in new equipment, in new technologies"⁸³.

⁷⁹ "Zapewnić zbyt przede wszystkim. To jest podstawowa sprawa. Najważniejsze jest zapewnienie zbytu." (Interview 9, pp.9)

⁸⁰ "Ja myślę, że państwo miałoby pieczę, w jakimś stopniu, nie mówię, że w całości, nad tą ceną. Jest szansa. Nie znam procedur, jak by to wyglądało, ale ja to widzę w tym szansę żeby właśnie w jakiś sposób ten rynek tak, że tak powiem, ustabilizować na jakimś takim poziomie cenowym, na jakim powinien być." (Interview 18, pp.2)

⁸¹ "nawet żeśmy z kolegą sobie doszli do wniosku, że może lepiej było nie dawać tych dotacji, tylko dać porządnie takie korzystne kredyty. Żeby to nie było, że to jest za darmo dotacja, tylko to jest kredyt. Może on jest niżej oprocentowany, ale kredyt trzeba zawsze zwrócić. To może te grupy by trochę lepiej działały" (Interview 4, pp.9)

⁸² "ten interwencjonizm jest bardzo duży. Ja byłem zawsze tego zdania, że Unia jako całość jest bardzo dobra, czyli bez granic, przepływ kapitału itd. – to powinno być. Natomiast w ogóle, żeby znieść całkowicie dotowanie rolnictwa, ale wszędzie." (Interview 4, pp.10)

⁸³ "ale rolnik też musi czuć te pieniądze. Jeśli rolnik poczuje troszkę tego grosza, że coś z tej pracy jest, on będzie to robił. W ten sposób tych młodych trzeba zachęcać. Ku chwale ojczyzny wszystkiego też nie będziemy robić. Najpierw



It was also noted that the differences between policies in EU countries make it difficult to compete on international market – "In general, apparently Germany, France and other member states of the European Union have higher subsidies than Poland, higher subsidy rates. If these subsidies were to remain or Poland were to remain in the European Union, it would be appropriate to equalize these subsidy rates so that they would be the same throughout the European Union"⁸⁴.

Other respondents suggested to increase the support for group actions, to avoid the inefficient use of funds – "Support should be directed towards helping groups of small farmers, larger ones too. Producer groups, cooperatives. For example, the expensive equipment we talked about is bought by a farmer who cannot afford it; this equipment will sometimes work for him a few hours a year and stand there"⁸⁵.

The lack of a clear national strategy for agriculture was considered a weak point of the policy – "Our national strategy like organic farming or high-quality food should be a priority and should be our national good that we can offer all over the world"⁸⁶. Another suggestion was related to the time scope of actions, which is currently too short – "We should go in the direction that let there be fewer farmers, but let them be permanently connected with this land and let their thinking be long-term, multi-generational. Let us reach up to our grandchildren, and not only what will happen in the sixth year"⁸⁷.

Respondents noticed also, that the amount of trainings is not sufficient and should be increased – "There is some training there. However, there should also be more. It boils down to organizing some training. But no matter how many people are in this training. A few or a dozen people will come and the training will be done. It should be more massive, to reach more people,

ten efekt pieniężny zachęty, że parę groszy zostaje, że można zainwestować w nowy sprzęt, w nowe technologie." (Interview 13, pp.9)

⁸⁴ "Ogólnie to podobno Niemcy, Francja i inne państwa członkowskie Unii Europejskiej mają od Polski większe dopłaty, większe stawki dopłat. Jeśli te dopłaty by miały w dalszym ciągu zostać albo Polska w Unii Europejskiej miałaby zostać, to wypadałoby wyrównać te stawki dopłat, żeby w całej Unii Europejskiej były takie same." (Interview 14, pp.3)

⁸⁵ "wsparcie powinno być ukierunkowane w kierunku wspierania grup małych rolników, większych również. Grup producenckich, spółdzielni. U nas na przykład sprzęt drogi o którym mówiliśmy, kupuje rolnik, którego nie stać na to, to ten sprzęt czasami będzie u niego pracował parę godzin w roku i stoi." (Interview 5, pp.6)

⁸⁶ "Taka nasza narodowa strategia jak rolnictwo ekologiczne czy żywność wysokiej jakości powinna być priorytetem i powinna być naszym dobrem narodowym, które możemy oferować na cały świat." (Interview 13, pp.6)

⁸⁷ "My powinniśmy iść w kierunku, że niech tych rolników będzie mniej, ale niech oni będą na trwale związani z tą ziemią i niech to takie ich myślenie będzie długofalowe, wielopokoleniowe nawet. Żebyśmy sięgali aż do swoich wnuków, a nie tylko, co będzie w szóstym roku." (Interview 5, pp.4)


not a handful. I see in it, that the policy of the administration or the state does not go in this direction"⁸⁸.

3.4 Resources & Network

The availability of social networks and contacts to discuss policies was considered sufficient by most of the respondents - *"We also get a lot of knowledge from others"*⁸⁹.

The respondents access information and learn about policies mainly via organizations and memberships ("conferences, fairs, meetings"⁹⁰), media (mostly Internet and agricultural magazines, such as "Działkowiec, "Owoce, warzywa, kwiaty", "Hasło ogrodnicze" or "Lubelskie aktualności ogrodnicze") and conversation with advisors - "If necessary, we use the services of a private consultant, mainly in the field of legal and economic advice"⁹¹. Less common ways to learn about policies are conversations with farmers - "You can learn a lot from other farmers"⁹². Or civil servants and scientists - "Limanowa, we went to Limanowa very often, to the Agricultural University of Lublin - the professor organized conferences, seminars and other meetings"⁹³. None of the respondents indicated conversations with clients as a way to access information about policies.

The respondents often considered the availability of information on policies as sufficient – *"If someone wants to acquire knowledge, they will acquire it"*⁹⁴. However, some respondents indicated, that learning about policies and legal issues requires the initiative of the farmer – *"We have all kinds of restrictions, even water law, and of course a farmer must intervene to find out what it is at all."*⁹⁵

⁸⁸ "Tam trochę szkoleń jest. Ale też powinno być więcej. Sprowadza się to głównie do tego, żeby zorganizować jakieś szkolenie. Ale nieważne ile ludzi jest na tym szkoleniu. Przyjdzie kilka, kilkanaście osób i odfajkowane jest szkolenie. To powinno być, żeby było bardziej masowo, żeby dotrzeć do większej ilości ludzi, ale nie do garstki. Ja to widzę w tym, że polityka administracji czy państwa nie idzie w tym kierunku." (Interview 9, pp.12)

⁸⁹ "My też czerpiemy dużą wiedzę od innych." (Interview 15, pp.8)

⁹⁰ "konferencje, targi, spotkania." (Interview 1, pp.9)

⁹¹ "W razie potrzeby korzystamy z usług prywatnego doradcy, głównie w zakresie porad prawno-ekonomicznych" (Interview 6, pp.18)

⁹² "Dużo można się dowiedzieć od innych rolników." (Interview 11, pp.16)

⁹³ "Limanowa, do Limanowej bardzo często jeździliśmy, do Akademii Rolniczej w Lublinie - pan profesor organizował konferencje, seminaria i inne spotkania." (Interview 1, pp.9)

⁹⁴ "Jeśli ktoś chce wiedzę pozyskać, to ją pozyska." (Interview 14, pp.8)

⁹⁵ "Mamy wszelakiego rodzaju obostrzenia, chociażby prawo wodne, no i siłą rzeczy rolnik musi sam zainterweniować, żeby się dowiedzieć co to jest w ogóle." (Interview 18, pp.1)



The own comprehension of relevant policies differed between the respondents. Some of them assessed it relatively highly - "What interests me, which is relatively important to me, I try to deepen and expand this knowledge"⁹⁶. Other respondents indicated that they could not say much about agricultural policy.

The comprehension of relevant policies with other actors was assessed highly – *"Farmers are interested in what is happening on the market, use these aid funds, modernization and restructuring."*⁹⁷. Respondents were aware of the learning process and the improvement of the comprehension of policies – *"Only a few years ago there were people who applied for this payment for the first time. Now probably everyone knows that it is all to be fulfilled"*⁹⁸. However, some respondents were pointing out, that the extensive bureaucracy makes it difficult for farmers to comprehend all the rules – *"I would still like to raise such a thing as bureaucracy. There really is a lot of it when it comes to the order, the procedures associated with it, to get some profit for the damage. I will say that, because there are a lot of them. A farmer, as a person himself, is not able, I do not say everyone, but for the one unaware of these administrative procedures fully, it really is hard for the farmer, maybe I will put it this way".⁹⁹*

The availability of capital to manage challenges was assessed differently between respondents. Some of them pointed out, that it is not easy to obtain funds - "I started in three programs, but in two I didn't get on these lists. Once there were no points, once there were no funds. I was able to take it for the third time. It wasn't easy."¹⁰⁰ Others highly assess the availability of capital and its' influence - "This is a chance for farmers, because they get money for development, for the opportunity to invest in machinery. With some activities, from the "Young

⁹⁶ "To, co mnie interesuje, co jest w miarę istotne dla mnie, to staram się tę wiedzę pogłębiać i poszerzać." (Interview 11, pp.20)

⁹⁷ "Rolnicy interesują się tym, co się dzieje na rynku, korzystają z tych funduszy pomocowych, z modernizacji, z restrukturyzacji." (Interview 17, pp.5)

⁹⁸ "Jeszcze parę lat temu były osoby, które po raz pierwszy ubiegały się o tą płatność. Teraz już chyba raczej każdy wie, że jest to wszystko do spełnienia" (Interview 15, pp.6)

⁹⁹ "Ja bym jeszcze chciał podnieść taką rzecz jak biurokracja. Naprawdę jest tego mnóstwo jeśli chodzi o kolejność, procedury z tym związane, żeby uzyskać jakieś profity za szkody. Ja to tyle powiem, bo naprawdę tam jest mnóstwo. Rolnik, jako sama osoba, nie jest w stanie, nie mówię wszyscy, ale tak nieuświadomiony w pełni tych procedur administracyjnych, naprawdę jest rolnikowi ciężko, może tak to ujmę." (Interview 18, pp.2)

¹⁰⁰ "Ja startowałem w trzech programach, ale w dwóch nie załapałem się na te listy. Raz zabrakło punktów, raz zabrakło środków. Mi się po raz trzeci dopiero udało to wziąć. To nie było tak łatwo". (Interview 20, pp.5)



farmer" they can buy a field for this money. It is a chance; it supports their development, because thanks to that their market position increases^{"101}.

3.5 Overall results

Policies support different capacities of resilience of farming systems to a different extent. Relatively the highest support is directed to robustness. Adaptability was considered less supported than robustness. Stakeholders considered transformability as the least supported. These results are presented in a ResAT wheel (see: Fig. 1). Table 3.1 sets out the assessment in more detail. A score is given to the extent the policies are perceived as enabling or constraining the robustness, adaptability and transformability of the farming system, per resilience characteristics (See also: Termeer et al., 2018).

Tabel 3.1: Assessment of farming system actors' perception of the extent policies enable or constrain the resilience of fruit and vegetable farming system in Mazovia and Podlasie, Poland.

Question	Score (scale: 0-5)	Arguments
	ROBUS	STNESS
1. To what extent is a focus on the short-term enabled or constrained by polices?	3	Short-term focus was assigned the level 3 (see: Fig. 1 – yellow color) – fairy enabling, because there is short-term support, but frequently it is not sufficient. There is also yearly allocation of the direct payments; however, they are not very important part of the income of horticulture farms in Poland. They are also not always considered beneficial for the system, because short-term profits for small farmers discourage them from selling their lands to commercial farmers – "Payments destroy our agriculture, direct payments" ¹⁰² .
2. To what extent is protection of the status quo enabled or constrained by policies?	4	Protecting status quo was assigned level 4 (see: Fig. 1 – green color) – enabling, due to existing support for small farms, direct

¹⁰¹ "To jest szansa dla rolników, bo dostają pieniążki na rozwój, na możliwość inwestowania w maszyny. Z niektórych działań, z "Młodego rolnika" mogą kupić pole za te pieniążki. Jest to szansa, wspomaga ich rozwój, bo dzięki temu zwiększa się ich pozycja towarowa." (Interview 17, pp.2)

¹⁰² "Dopłaty rozwalają nasze rolnictwo, dopłaty bezpośrednie." (Interview 1, pp. 16)



		payments and the favorable social insurance for farmers. There is also some coupled support still existing, although in a very limited level – "We now have funding for a particular crop in the area" ¹⁰³ .
3. To what extent is the development of buffer resources enabled or constrained by polices?	4	Buffer resources were assigned the level 4 (see: Fig. 1 – green color) – enabling, due to availability of funds for investments in physical assets, small farmers support, young farmers support or direct payments. However, some respondents pointed out to inequalities in relation with buffer resources support in different EU countries – <i>"For example, farmers get direct payments. It has to be everywhere evenly. And why do farmers in the West get a higher subsidy? We can't compete in this way."</i>
4. To what extent are other modes of risk management enabled or constrained by policies?	3	Other risk management strategies were assigned the level 3 (see: Fig. 1 – yellow colour) – fairly enabling, due to the fact, that despite the existence of risk management instruments, they do not always work properly, for example insurances – <i>"We've</i> <i>insured for 15 years, maybe more. We have not</i> <i>been insuring for some time, there was hail and</i> <i>we did not receive compensation."</i> ¹⁰⁵

 ¹⁰³ "Teraz mamy dofinansowanie do danej uprawy w obszarówce." (Interview 15, pp. 6)
¹⁰⁴ "Na przykład rolnicy dostają dopłaty bezpośrednie. Ma być wszędzie równo. A dlaczego rolnicy na zachodzie dostają większą dopłatę? Przecież my nie możemy w ten sposób konkurować." (Interview 3, pp.7)

¹⁰⁵ "Ubezpieczaliśmy przez 15 lat, może więcej. Od jakiegoś czasu nie ubezpieczamy, był grad i nie dostaliśmy odszkodowania." (Interview 1, pp. 7)



ADAPTABILITY			
1. To what extent is a focus on the middle-long term enabled or constrained by policies?	2	Middle-term focus was assigned the level 2 (see: Fig. 1 – orange color) – slightly enabling, due to the time-scope of the Pillar II instruments. However, respondents find it difficult to meet the requirements set by the funding agency – "Once I went to ask, but you have to meet a lot of different conditions. There is one problem, or production must be increased, or the acreage increased within 5 years. With today's land prices, it is difficult. In addition, no one wants to sell the land." ¹⁰⁶	
2. To what extent is flexibility enabled or constrained by policies?	2	Flexibility was also assigned the level 2 (see: Fig. 1 – orange color) – slightly enabling, because of the focus on means of achieving goals more than necessary and the lack of flexibility of procedures, with little regards to the situation of the system and the market – "Why are we not flexible in some way and this whole common policy is also not flexible. The farmer and producer should decide what is better for him and not some official will tell me what to do. There can't be such a thing" ¹⁰⁷ .	
3. To what extent are variety and tailor-made responses enabled or constrained by policies?	3	Variety was assigned the level 3 (see: Fig. 1 – yellow color) – fairly enabling, due to the existence of different instruments within the Pillar II for modernization of farms and supporting young farmers, as well as advisory	

¹⁰⁶ "Kiedyś poszedłem zapytać ale trzeba spełnić bardzo dużo różnych warunków. Jest jeden problem, albo w ciągu 5 lat należy zwiększyć produkcję albo zwiększyć areał. Przy dzisiejszych cenach ziemi to jest trudne. Ponadto nikt nie chce sprzedawać ziemi." (Interview 10, pp.4)

¹⁰⁷ "Dlaczego nie jesteśmy w jakiś sposób elastyczni i ta cała wspólna polityka też nie jest elastyczna, że rolnik, producent powinien decydować, co jest dla niego lepsze, a nie mi jakiś urzędnik będzie mówił, co ja mam robić. Nie może czegoś takiego być." (Interview 13, pp.14)



		services, but there are not many instruments dedicated to horticulture. There are some available, though – <i>"There were probably</i> <i>resources for fruit growers who could get extra</i> <i>big money for the preparation of these storage</i> <i>rooms and activities. However, I can't tell you</i> <i>so much in detail. It is the most supportive for</i> <i>groups and it is not a small amount of</i> <i>money."</i> ¹⁰⁸
4. To what extent is social learning enabled or constrained by policies?	3	Social learning was assigned also level 3 (see: Fig. 1 – yellow color) – fairly enabling, because there are advisory services provided, however they are not sufficient, according to some respondents – "There is some training there. But there should also be more" ¹⁰⁹ . There is also support for groups of producers, which can be a platform for social learning – "Certainly much progress has been made through these investment subsidies. Even this group is also an example of this. I don't know if it would have been created had it not been for these subsidies." ¹¹⁰
	TRANSFO	RMABILITY
1. To what extent is a focus on the long term enabled or constrained by policies?	1	Long-term focus was assigned the level 1 (see: Fig. 1 – red color) – not enabling, due to lack of long-term strategies for the system – "We should go in the direction that let there be fewer farmers, but let them be permanently

¹⁰⁸ "Były środki bodajże dla sadowników, którzy mogli uzyskać dodatkowe duże pieniądze na przygotowanie tych przechowalni i działalność. Aczkolwiek nie potrafię Panu tak szczegółowo powiedzieć. Jest dla grup jak najbardziej wsparcie i to nie są małe pieniądze." (Interview 17, pp. 10)

¹⁰⁹ "Tam trochę szkoleń jest. Ale też powinno być więcej." (Interview 9, pp.12)

¹¹⁰ "Na pewno duży postęp został zrobiony poprzez te dopłaty do inwestycji. Chociażby ta grupa też jest przykładem tego. Nie wiem, czy by powstała, gdyby nie było tych dotacji." (Interview 4, pp. 9)



		connected with this land and let their thinking be long-term, multi-generational, that we reach to our grandchildren. Not just what will be in sixth year." ¹¹¹
2. To what extent is the dismantling of incentives that support the status quo enabled or constrained by policies?	2	Dismantling status quo was assigned the level 2 (see: Fig. 1 – orange color) – slightly enabling, because of the direct payments, which are still keeping the status quo, although they are not as important for the horticulture system as for other farming systems. The coupled support is diminishing, although still existing in a limited level - "We now have funding for a particular crop in the area" ¹¹² .
3. To what extent is in-depth learning enabled or constrained by policies?	1	In-depth learning was assigned the level 1 (see: Fig. 1 – red color) – not enabling. the respondents could not indicate any policy instruments supporting in-depth learning.
4. To what extent is the enhancement and acceleration of niche innovations enabled or constrained by policies?	2	Niche innovations were assigned the level 2 (see: Fig. 1 – orange color) – slightly enabling, due to the possibility of getting funds for innovations from the Regional Operation Programme, however the process is characterized by extensive bureaucracy and it is hard to gain funds for experimental projects. In the Rural Development Programme the definition of innovation allows broad range of activities to be treated as innovative, which allows to spend the money on project which are characterized by low level of innovation –

¹¹¹ "My powinniśmy iść w kierunku, że niech tych rolników będzie mniej, ale niech oni będą na trwale związani z tą ziemią i niech to takie ich myślenie będzie długofalowe, wielopokoleniowe nawet, żebyśmy sięgali aż do swoich wnuków. A nie tylko, co będzie w szóstym roku." (Interview 5, pp.4)

 $^{^{\}rm 112}$ "Teraz mamy dofinansowanie do danej uprawy w obszarówce." (Interview 15, pp. 6)



"For example, if there was no tractor on a given farm and you bought it, it is already an innovation. There was no particular crop. The entire RDP is an innovation. Whatever that means. [laughs] "(Interview 15, pp. 11)"¹¹³.



Fig. 1: The Resilience Assessment Tool wheel for the Polish horticulture farming system (own study).

¹¹³ "Na przykład jak w danym gospodarstwie nie było traktora, a zakupił to już jest innowacja. Nie było danej uprawy. Cały PROW stoi innowacją. Cokolwiek to nie znaczy. [śmiech]" (Interview 15, pp. 11)



4 Conclusion

- The main challenges for the Polish fruit and vegetable farming system are related to income and fair prices, lack of workforce, weather events and climate change, market and competition, input and maintenance prices, water supply, horizontal and vertical collaboration, farm succession and plant diseases.
- The farming system is partly capable of dealing with risks and of capturing opportunities.
- Respondents and the farming system cope with mentioned risks and developments mainly by diversification of non-agricultural and agricultural practices, intensifying and upscaling of farming business, reaching out to farming systems actors, anticipating events, trying new selling practices, innovations, additional income and taking out insurances.
- The policies, which influence the farming system the most are related to Pillar II of the CAP, such as investments in physical assets, knowledge transfer and advisory services, small farmers support, young farmers support. In addition, other policies affect the system, such as social security or weather risk management. Farmers use the basic payment scheme, but it is less important for this sector than for others.
- The respondents access information and learn about policies mainly via organizations and memberships, media (mostly Internet and agricultural magazines) and conversation with advisers. Less common ways to learn about policies are conversations with farmers, civil servants and scientists. None of the respondents indicated conversations with clients as a way to access information about policies.
- Policies support different capacities of resilience of farming systems to a different extent. Relatively the highest support is directed to robustness (especially protecting status quo and buffer resources), and the lowest to transformability (least to long-term focus and indepth learning).



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D4.3 Bottom-up analysis: How do stakeholders experience the influence of policies on the resilience of farming systems?

Case study report on: extensive sheep farming system in Hoya de Huesca (Aragon), Spain

Work Performed by Partner's No.9, Universidad Politécnica de Madrid (UPM)

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1 Methods and data

1.1 Farming system cases

The Spanish case study focuses on the extensive sheep farming system of Hoya de Huesca, located in the region of Aragon, North-eastern Spain. The rural area of Hoya de Huesca is undergoing an intense process of depopulation (Bosque & Navarro, 2002). Its territory comprises a more mountainous geomorphology to the North, and a mainly flat area in the South. Such geographical characterization implies different farming: more extensive and livestock-oriented in the North, and more intensive and crops-oriented in the South. However, the province knows a long history of ovine production and the practice of transhumance (Navarro, 1992). The extensive sheep farming system in Huesca comprises mainly medium-sized, extensive or semi-extensive farms (300- 800 ewes). Often, farms are diversified in other productions such as almonds, olive trees, cereal crops and, in a few cases, vineyard (Aragón Government Statistical Database; Pardos et al., 2008).

Following the indications given by the protocol (T4.3), our methodological approach involved the selection of four farming system cases under the same policy regime, in order to capture variation in terms of stability/change of practices and functions in the system.

The four cases are addressed to robustness, adaptability, transformability, and non-resilience (Meuwissen et al., 2017). However, those cases are not intended to be definitely embedded in such categories, but they are supposed to bring evidence of diverse aspects. Regarding the categories of robustness, adaptability, and transformability, the cases have been chosen between previous open interviews conducted within WP 2 and 3 of the SURE-Farm project. The researchers' knowledge of those cases has allowed for positioning those interviews into the categories. In their former work with those interviews, the researchers classified strategies implemented at farm level depending on the extent to which they led to robustness, adaptability, and transformability.

Based on the definitions of resilience within the theoretical framework of the SURE-Farm project (Meuwissen et al., 2017), 14 farmers have been grouped in the three proposed farming systems cases. For instance, those farmers who cope with different pressures (e.g. low profitability, wolves' attacks) by using the aid offered by CAP were considered addressed to robustness. But farmers who, for example, were able to adjust their on-farm structure by introducing novel management techniques in pastures, or by introducing the Unifeed system, were comprised into adaptability. Deeper changes, such as starting agro-tourism, planting almond trees or switching to other livestock production were linked to transformability.



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In addition, two farmers for the case of non-resilience have been interviewed: they are farmers that left the system. In addition, five policy-expert stakeholders have been interviewed out of the farming system cases in order to enrich findings about policies.

1.2 Desk research

The contextual 'policy environment' in which the farming system is embedded has been studied. Several policies are influencing the farming system; therefore, as a first step, potential influencing policies and regulations have been identified and collected. The desk research involved policies at all levels (from local to European), and across different fields, not strictly focused on agriculture, but anyway related to it like as environmental policies. The aim was to build a wide and deep understanding of policy-related issues to conduct better-addressed interviews, and to increase the researchers' comprehension of the emerging information. As following, the list of selected policy documents and sources:

General review of policy-measures from EU and local level implemented in the region

- Aragón Government web site (accessed on March 2019). LINK: <u>https://www.aragon.es/-/ganaderia</u>
- Aragón Government web site (accessed on March 2019). LINK: <u>https://www.aragon.es/-/ayudas-pdr-2014-2020-</u>
- European Commission (2013). Overview of CAP Reform 2014-2020. Agricultural Policy Perspectives Brief nº5/December 2013. <u>https://ec.europa.eu/agriculture/sites/agriculture/files/policy-perspectives/policy-briefs/05_en.pdf</u>

Review of sanitary, food safety and quality, and animal welfare normative in Aragón

• Aragón Government web site (accessed on March 2019). LINK: <u>https://www.aragon.es/-/seguridad-alimentaria</u>

Regional legislation on parks and natural reserves

• DECRETO 204 /2014, de 2 de diciembre, del Gobierno de Aragón, por el que aprueba el Plan Rector de Uso y Gestión del Parque Natural de la Sierra y los Cañones de Guara. Boletín Oficial de Aragón, Núm.248, 19/12/2014.

Leader+ Programme normative

• http://aragonrural.org/leader/normativa-leader/preparacion-de-la-normativa-leader-2014-2020-gobierno-de-aragon/

Local policy on Urban-Rural areas and livestock activities

ORDEN de 13 de febrero de 2015, de los Consejeros de Obras Públicas, Urbanismo, Vivienda y Transportes, de Política Territorial e Interior, y de Agricultura, Ganadería y Medio Ambiente, por la que se sustituyen varios anexos de las Directrices sectoriales sobre actividades e instalaciones ganaderas, cuya revisión se aprobó por el Decreto 94/2009, de 26 de mayo, del Gobierno de Aragón. Boletín Oficial de Aragón, Num. 55, 20/03/2015.

CAP 1º Pillar – Payment scheme

 Gobierno de Aragón (2017). Modernizar y simplificar la PAC para hacerla más social y eficaz. Gabinete del Consejero de Desarrollo Rural y Sostenibilidad del Gobierno de Aragón. <u>https://www.aragon.es/documents/20127/674325/REFORMA_PAC_PROPUESTA_CONSEJERO_201710.pdf/6f121f34-</u> <u>dc07-784c-e6d4-25838fe42232</u>



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- Informe sobre la aplicación del Régimen de Pago Básico en España, 2017. Ministerio de Agricultura, pesca y alimentación. <u>http://publicacionesoficiales.boe.es/</u>
- MAPAMA (2015) Los pagos directos de la política agrícola común (PAC) 2015-2019 en el sector ovino y caprino. Ministerio de Agricultura, Pesca, Alimentación y Medio Ambiente. <u>https://www.mapa.gob.es/es/ganaderia/temas/produccion-y-</u> mercados-ganaderos/lospagosdirectosenelovinoycaprino tcm30-58890.pdf

CAP 2nd Pillar

- European Parliament (2018). Second Pillar of the CAP: Rural Development Policy. http://www.europarl.europa.eu/ftu/pdf/en/FTU 3.2.6.pdf
- EVALUACIÓN POSTERIOR DEL PROGRAMA DE DESARROLLO RURAL DE ARAGÓN 2000-2006 DIRECCIÓN GENERAL DE DESARROLLO RURAL, GOBIERNO DE ARAGÓN (2007) <u>https://www.mapa.gob.es/es/desarrollo-rural/temas/programasue/aragon_tcm30-151804.pdf</u>
- EVALUACIÓN FINAL DEL PROGRAMA DE DESARROLLO RURAL DE ARAGÓN 2007-2013 (2016). LINK: <u>https://www.mapa.gob.es/es/desarrollo-rural/temas/programas-ue/informe_evaluacion_final_pdr_aragon_2007-2013_tcm30-380361.pdf</u>
- Gobierno de Aragón (2018) ORDEN DRS/1247/2018, de 5 de julio, por la que se establecen las bases reguladoras para la concesión, en régimen de mínimis, de subvenciones para la adaptación de la ganadería extensiva a los retos ambientales y a los desafíos socio-territoriales. Boletín Oficial de Aragón. <u>http://www.boa.aragon.es/cgi-bin/EBOA/BRSCGI?CMD=VEROBJ&MLKOB=1032972823333</u>
- Gobierno de Aragón (2016) ORDEN DRS/57/2016, de 28 de enero, por la que se aprueban las bases reguladoras de las subvenciones en materia de pagos a zonas con limitaciones naturales u otras limitaciones específicas, en el marco del Programa de Desarrollo Rural para Aragón 2014- 2020. Boletín Oficial de Aragón. <u>http://www.boa.aragon.es/cgibin/EBOA/BRSCGI?CMD=VEROBJ&MLKOB=894059043838</u>
- Informe anual de ejecución (2017) Programa de Desarrollo Rural de Aragón (2018). https://www.aragon.es/documents/20127/674325/PDR INFORME EJECUCION 2017.pdf/dd3bd96a-c608-9051-112c-5a80017506ab
- Rural Development Programme (Regional) Aragón 2014-2020. Gobierno de Aragón. <u>https://www.aragon.es/documents/20127/674325/AGMA PDR 2014 2020 MODIFICACION 20181022.pdf/3541a17</u> <u>3-d725-7aa3-51d6-110032c5ee89</u>





1.3 Interviews and FoPIA workshop

In the Spanish case study 21 stakeholders have been interviewed. For each case a number of farmers have been chosen: 6 for robustness, 8 for adaptation, 4 for transformation, and 2 for non-resilience. Table 1 reports the interviews' information. The 14 interviews reported by Id. from G1 to G28 have been performed within work package 2 and 3 of SURE-Farm. In this case all the interviewees were farmers. The interviews have been conducted as semi-structured interviews. The interviews lasted about 1 - 1.5 hours. They were conversations with a general degree of openness (or freedom) for the interviewee's telling. Additional addressing questions have been asked to obtain insightful answers to the main research questions, and on new interesting emerging evidences. The 'openness' of interviews allowed for collecting a breadth information, whereas following-up questions are useful to obtain in-depth knowledge of emerging issues.

For instance, in 'learning capacity' (T2) mainly social networks, learning process and information exchange were targeted, whereas in 'farm demography' (T3) the main goal was to explain dynamics of farm entry and exit. However, in both cases, challenges and strategies were deeply and widely treated. Those interviews can bring several findings to the points 1 and 4 (among the others) of the provided codebook in for T4.3.

In order to gather a wider range of information, further interviews were performed: two interviews with farmers who exited the sector (as mentioned above in chapter 1.1), and five were conducted with policy-expert stakeholders such as farmers union' and associations' members, policy-makers, and academics. Through those interviews, policies influencing the farming system were specifically targeted to enrich findings from previous interviews.

Those interviews, identified in table 1 by Id. from P1 to P7, were conducted following a policyoriented interviews' protocol. Exceptions were made in the cases P3 and P4 in which, besides policies, the focus was also on non-resilience issue. The interviews' objectives were 1) to identify the main challenges for the farming system, 2) to define implemented strategies and the capacity to cope with challenges, and 3) to understand the interviewees' perception about policies' effects.

All influencing policy-tools and measures were targeted, in particular: the CAP (1st and 2nd pillar), environmental policies, animal health and welfare legislation, legislation on municipal pastures, fiscal and labour rules, Natural Parks and urban zones legislation. The researchers' knowledge on such policy framework was built through desk research (reported above in chapter 1.2), and the FOPIA workshop (SURE-Farm work package 5).





No.	Id.	Interviewees	Cases
1	P1	Farmers Union's member (UPA-Aragón)	-none-
2	P2	Farmers Union's member (UAGA)	-none-
3	P5	Policy-maker (Regional Government)	-none-
4	P6	Policy-maker (Regional Government)	-none-
5	Р7	Researcher – University of Zaragoza	-none-
6	Р3	Farmer	Non-resilience
7	Ρ4	Farmer	Non-resilience
8	G3	Farmer	robustness
9	G5	Farmer	robustness
10	G6	Farmer	robustness
11	G7	Farmer	robustness
12	G9	Farmer	adaptation
13	G13	Farmer	adaptation
14	G14	Farmer	adaptation
15	G24	Farmer	adaptation
16	G26	Farmer	adaptation
17	G28	Farmer	adaptation
18	G1	Farmer	transformation
19	G2	Farmer	transformation
20	G23	Farmer	transformation
21	G27	Farmer	transformation

Table 1. Interviews' info.

Within the WP5 of SURE-Farm, a workshop was convened. A final and concluding activity was performed in the workshop to investigate influencing policies and their effects on the farming system's resilience, as well as to highlight potential policy changes. In this focus group the main policy issues were identified and deepened throughout a participatory approach and debate between different stakeholders (farmers, academics, associations' members, policy-makers). The discussion was recorded, permitting researchers to subsequently analyze the argumentations exposed in the workshop.

The researchers found the results of the focus groups important to complement the findings presented in this report. Therefore, findings from FOPIA have been added to explain the policy influence on resilience and relative dynamics.

1.4 Coding and analysis

Once conducted and recorded, the interviews have been literally transcribed. Then, the interviews' transcripts were imported into the qualitative data analysis software NVivo[®] to be analyzed. The codification followed the methodology of qualitative content analysis (Hsieh & Shannon, 2005; Schreier, 2012). The codification process was carried out iteratively in two phases





by two researchers, working separately. A first-round codification has been conducted by a researcher; then the second researcher carried out a codification and checked it with the first-researcher's codes. Finally, the researchers have jointly concluded the codification processes by comparing their work. The codification has been performed on the base of the main codebook provided; nevertheless, room for inductive analysis was left open as it was possible to complement the main code book with case-specific codes.

Fragments of text that refer to the research concerns addressed by the provided codebook were coded. Besides, the researchers have coded all fragments of text which, in their opinion and knowledge, bring useful or significant information to the analysis. Therefore, new codes have been added in Risks & challenges, Strategies & captured opportunities, and Policies (respectively the points 1, 4 and 5 in the codebook). In addition, a general code (point 14 in codebook) has been created to collect information about access to information, learning process, and social networks not specifically related to policy.

Both manifested and latent fragments of text have been selected (Bengtsson, 2016). The length of the fragments is variable, depending on the "self-explicability" of the text. At this point, the first-round codification (protocol T4.3) was concluded.

Subsequently, the content of the codebook (in particular policies in point 1.q, 5 and 6 of the codebook) was re-coded based on the policies' influence on robustness, adaptability and transformability, and considering all potential policy implications.

The content of codes in point 5 of the codebook (policies influencing system's resilience) was recoded a third time to divide information and relate them to specific tools and measures. To fill the RESAT wheel, each policy-measure was scored in a 1-5 Likert scale, by the work of three researchers. Jointly, the researchers defined the argumentations based on codes for which scores were given and conclude an overall score for each characteristic of the wheel.



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2 Regional stakeholder check

Once the first version of the report was ready, it was sent by email to CAP policy experts with proved experience in CAP instruments and their implementation at European level and national/regional level. Two policy experts actively participated in this check process, key insights. The following insights followed from the stakeholder check.

When assessing CAP instruments and impact on resilience greater focus should be given to the wrong prioritisation of the Member States-MS (Spain) and regions (Aragón). All the "critical" impacts of measures and the lack of instruments already exist in the CAP but it is up to the MS/region to prioritise among these. The issue is that MS almost always prefer higher direct payments rather than measures that would have an impact in the long run. Sometimes the expected technical difficulties related to implementing new measures (mainly those in Pillar II) leads the regional / local authorities to limit the instruments to direct payments instead of measures more suitable for the region. There is a wide available range of Rural Development Programme measures that should be prioritized to enhance the sheep extensive farming resilience capacities (in terms of budgets) such as advisory services (M1 and M2), LEADER (M 19), cooperation measure (M16), investment support for diversifying businesses (M4.2), village development (M7). Thus, the goal is to facilitate the implementation of the Rural development programmes by the regional leaders.

The assessment of the farming system resilience requires to differentiate between: i) the individual actions performed by farmers (intensification versus extensification, on-farm diversification and unified machines): and ii) the collective actions (innovation, geographical protected indication, new products (meat cuts) development, new contracts with distributors and new exports channels with adapted breeds to consume needs, new technologies (robots) to herd cattle) performed by the actors who belong to the farming system. A wide variety of individual and collective actions have been identified that have been successful in turning the downward trend of national sheep meet consumption and consolidating the exports.

As cited by one the policy makers, extensive farming systems are badly treated by the current CAP. Everything is based on eligible area and direct payments. The decoupling of direct payments based on historical entitlements has constrained the sector because the shepherds do not have (enough) land to receive enough direct payments and, therefore, need to find new territories. The historical payments have also restricted the sector, because many farmers receive payments without having sheep. This has influenced the prices of the sheep.

Some of the solutions proposed by the farmers and other actors in the sector, seem logical but are difficult to implement, e.g. increasing the eligibility of sheep farmers to take into account the areas they use for grazing for financial support; however, this means a huge area used for extensive





farming practices that would result in a massive transfer of support from current beneficiaries (farmers and regions) to new actors . Politically, also from small and medium farmers to large landowners of, for instance, "dehesa's" (cultural landscape type on the Iberian Peninsula).

The proposed new CAP includes eco-schemes. An eco-scheme specifically designed to address extensive animal farming systems would be an appropriate instrument. It should be financed removing the remaining current support to intensive meat and milk livestock producers.

The new CAP proposal gives also the possibility to MS who wish to mobilize 3% of the envelope for direct payments to finance operational programmes of producer's organisations and their associations, as it is the case today in the fruit and vegetable sector (García Azcárate, 2018). The margin of flexibility left by the Community regulations to the MS is sometimes reinterpreted with retroactive effect by the commission auditors, sometimes disagreeing with the opinions of the unit responsible for the management of the markets in the same General Directorate of Agriculture and rural development. Once the regulation is in place, the audits turned out to be very strict instead of allowing flexibility and creativity.

Regarding the collective actions, the development and consolidation of producers' organizations (PO) require real and deep change of the auditor's control. Retroactive interpretations of the regulations should not have been allowed. Auditors should generalize best practices and anticipate possible problems.

The Commission's new approach opens a window via its Strategic Plan. But, as it sadly happened with the national strategy in the fruit and vegetable sector, it can only work if the Commission audit services do not come later with their retroactive interpretation and understanding. If this is the case, the opportunity will be lost, and the regulation complexity will skyrocket.



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3 Synthesis

3.1 Challenges

The challenges are the main concerns of interviewees, as most of the interviews are prominently focused on economic, social, environmental and institutional shocks, risks and pressures. The most challenging issues that were identified are low incomes and prices and problems related with changes in policy and legislation.

"Because, above all, the price is not enough, I am 36 years old (he is farming since he was 20) and I have always seen the same price. The current price is equal to the price of lamb when I was a child. Therefore we are sustained because of policy aids." [G24-25]¹

Entering the details, low profitability is generally caused by factors such as: persistently low prices of lamb meat and increasing feeding and labour costs; an increased competition from imports; intensive agricultural sectors and other sectors that increase the competition over land; a decreasing consumption of lamb meat; a changing value chain in which local markets (local slaughterhouses) are disappearing and farmers have decreasing bargaining power.

Several other issues emerged, such as differences in policies among countries and within Spain, land acquisition prices and abandonment, and conflicts with wild fauna (especially wolves). In addition, although less mentioned, other statements suggested emerging concerns on low bargaining power, lack of services and rural knowledge, and weather-related issues

"We still have a gasoline-train, and not an electric one. It runs at 40 km/h. That means, communications are complicated here, despite the relatively-close highway. This also is an impediment (rural activities)." [P1]²

There is a general lack of human resources and an overall phenomenon of leaving the sector and rural areas. Specifically, there is a lack of skilled workers and people interested in working in the livestock sector. The sheep sector is very labour intensive, and it does not allow a balance between work, family and personal life. The lack of interest in the sector is constraining the transmission of

^{1.} Porque encima el precio no lleva... Yo es que tengo treinta y seis años siempre lo he visto valor lo mismo. Al precio que se venden ahora ya lo vendíamos cuando yo era bien chiquirrín. Entonces pues vives de... pues casi de las ayudas.

^{2.} O nosotros tenemos todavía un tren que va desde Huesca, que es el Canfranero hasta Teruel, a gasoil. O sea, no está electrificado. A cuarenta por hora. O sea, las comunicaciones son complicadas, por mucho que tenemos una autovía de arriba abajo. Pero bueno, al final eso frena.



nowledge to new entrants. Next to this, there is an evident lack of successors willing to take over the farm business.

"Then there is the issue of labour force: it's hard to find people (to work) now, to find professionals" $[G6]^3$

"You need to be born for it (livestock). You need to know that on Sunday you must feed sheep and for Christmas too. The night when they (sheep) give birth you must stay there till 3 a.m. in the stable." $[G26]^4$

The change in the policy setting has led to distortions, asymmetries and inequalities within the farming system, and between sectors. It regards particularly the decoupling of 1st pillar CAP, and the introduction of the new payment scheme.

"Now they (policies) are supporting farmers who do not own sheep." $[P2]^5$

Wolves' attacks and the more frequent droughts have been identified as growing challenges in the future.

"The issue of wolves and bears is increasingly relevant. This will be a problem, a very hard problem." [G26]⁶

Due to labour costs, lack of people interested in long working hours, and the increasing land prices, in many cases herd management tends to be less extensive (the pastoralism limits to a low number of hectares). As a result, the herd grazes fewer hectares which leads to land abandonment and more likely forest fires.

3.2 Resilience

System's actors, and in particular farmers, are acting to cope with challenges by implementing a number of actions, generally referable to fewer main strategies. Many respondents referred to the reduction of costs, this usually occurs by reducing labour costs (not employing workers and using more intensively family labour) or feeding costs. Then, interviewees refer to the opportunity to push production towards intensification or extensification, but there is no agreement on which way is better. Cooperatives and other forms of associations seem to be a relevant strategy in the interviewees' opinion. Further, the interviews reveal a trend of

^{3.} Luego también el tema de la mano de obra, encontrar gente ya, encontrar profesionales pues, pues, pues ha sido complicado.

^{4.} Hay que nacer para esto. Hay que saber que el domingo hay que dar de comer y que el día de Navidad también las ovejas comen. Y que por la noche cuando paren a lo mejor hay que estar a las tres de la mañana en... en la nave atendiendo partos.

^{5.} Antes... ahora se está cobrando gente por no tener ovejas.

^{6.} El problema del lobo, el problema del lobo es el que vendrá. El problema del lobo y del oso es el que vendrá. Ese será un problema, un handicap muy... importante.



diversification to cope with challenges. This refers especially to within-farm diversification of production or agricultural practices. Last, experimentation or innovation strategies emerge, and generally refer to novel ways to manage pastures and related activities.

"To reduce costs....try to get pastures in Autumn...try to decrease feeding and labour costs." [G2]⁷

"Cooperatives are very important. For example, they are important in relation with trade/marketing and consulting. In my experience, the cooperative is very important." [G26]⁸

Despite the varying strategies implemented by farmers, it is not evident from the interviews whether or not the overall system is capable of dealing with risks. The general decline in farm numbers could suggest a 'non-capability', but it is worth noting that many farmers are implementing strategies that allow them to cope with challenges. For instance, in some cases forming co-operatives and entering GPI markets imply cost reduction, better promotion and higher sale prices to cope with the low profitability. In other cases, the introduction of novelties and experimentation in pasture management has allowed to reduce the intensity of work.

The implementation of those strategies can give a measure of the capability of the sector to capture opportunities; in particular, diversification and experimentation regarding innovative practices, activities or farm models to be implemented to cope with specific challenges. Some of the main challenges faced by farmers are low profitability and intensive work commitments, therefore many 'captured opportunities' are represented by the novelties to reduce time commitments in pastures, costs of production, and new productions to enhance farm profitability. Some examples could be the implementation of electric virtual shepherd by means of a research project, or the idea to diversify the production by introducing almond trees (a product with good market prices), or the introduction of a novelty (Unifeed machine) to reduce feeding costs. However, there is not enough evidence to state a general capacity of the system to capture opportunities against challenges.

"We moved (the farm business) towards further investments, such as almonds." [G6]⁹

« So, we bought a Unifeed car and, therefore, we adapted the farm to this new more automatic system... And now we are still carrying on this system. » [G6]¹⁰

^{7.} Bueno, y hemos reducir gastos, reducir costes, intentar aumentar por ejemplo, pues intentar el subcontratar pues donde queda disponibilidad, subcontratar pastos de estos que te comento, de otoño a... Intentar bajar coste de alimentación fundamentalmente y costes de mano de obra.

^{8.} Las cooperativas son muy importantes porque... Yo por ejemplo en... en temas de comercialización, de asesoramiento, de... Yo la experiencia que tengo, por ejemplo de la cooperativa del Sobrarbe, para mí es muy importante, claro.

^{9.} Nos hemos pasado a lo mejor a otro tipo de inversiones pues como por ejemplo era poner almendros.

^{10.} Pues compramos un, un carro unifeed y entonces adaptamos la explotación a, al carro unifeed de una manera más automática, más automatizada; y entonces pues, pues también ahí vimos que con el carro también se podía economizar bastante las raciones de las ovejas que iban a parir y las paridas; y bueno, aún ese sistema aún lo estamos..., seguimos usando



3.3 Policy

Regarding policies influencing the system, the main interviewees' concern was related to the direct payments, comprising the basic scheme, greening and young farmer aids. Next to this, agroenvironmental payments of the Rural Development Programme seem to be influential and complementary with direct payments. Farmers generally refer to those measures as subsidies, without making relevant differences between them. The policy-measures provided in the form of payments are the most relevant in the interviewees' opinion.

"Because if there aren't aids (CAP payments) this sector does not run neither this nor other sectors." [P5-6]¹¹

Some more measures are mentioned, such as: legislation on trade liberalization, animal welfare, support to organic farming, the coupled payment, aids for less favoured areas, structural investments, support to young farmers, and support for promotion and quality regime.

"There are agro-environmental aids from the second pillar of CAP, and then the one for the extensification of pastures that is the measure 13 about mountainous areas." [P1]¹²

"Of course, measures to support and subside investments have been set." [P5-P6]¹³

There is a concern about the impact of national and local legislation. This regards mainly legislation on urban areas, sanitary rules, and environmental protection. Policies related to the compensation for wolves' attacks are particularly debated.

"When you (policy-maker) discuss a law for to introduce wolves and to set a protected area in the mountains, no economic compensation is comprised in that law." [G26]¹⁴

The interviewees' opinions about policies were concentrated on the payment schemes and not very differentiated across the varying tools provided by national and European policies. Nonetheless, from the interviews emerged strong interest about possible policy changes. Some interviewees suggested for example: to increase the amount of payment both for coupled and

^{11.} porque si no hay ayudas esto no va, bueno ni este sector ni nadie, ni ningún sector.

^{12.} Y el resto son ya ayudas agroambientales que vienen del segundo pilar. De la de la extensificación del pastoreo, ¿vale? Que es la medida uno tres, la de las zonas de montaña.

^{13.} Claro, se han puesto en marcha medidas de apoyo, de subvención de instalaciones.

^{14.} Cuando haces una ley 'no, es que vamos a introducir el lobo, vamos a introducir... vamos a prohibir tal cosa pero os ayudaremos en... en... en lo que hagáis en extensivo'. Sí, sí los... Tú me vas a prohibir porque vas a poner una ley, lo que me prohíbas ¿eh? En la montaña, un espacio protegido, lo que sea, pero la compensación económica no me la vas a poner en una ley.



decoupled aids, to address the payments' support to the production, eliminate the historical right system which implies deep distortions and to enlarge the admissible land for CAP aids.

"I believe it would be important an economic aid linked to sheep, I mean an aid linked to production, the lamb." [P4]¹⁵

Moreover, the reduction of bureaucracy at local and national policy level, and the decrease of fiscal pressure are concerned issues. Due to the negative trends related to the rural community (depopulation, lack of services etc.), some interviewees generally refer to an increase of measures for the rural areas. Besides, it has been argued that more measures for promoting products are needed, because of the reduction of demand in the market and the high competition with other sectors. In relation with the lack of successors, some proposed an increase in resources dedicated to young farmers. Finally, about the new CAP post 2020, some interviewees argued that it is necessary to adapt the new eco-scheme to the extensive sheep system, since this farming system is strongly related to the ecosystem services.

3.3.1 Evidences from FoPIA workshop

In the FoPIA workshop, evidences about policy influence and potential policy changes emerged. The findings widely confirm what is shown in the interviews' content and codification, but they also add further information.

In particular, further policy changes are proposed. First, policies should favour wider use of pastures. For example, the administration could permit the access to public mountainous pastures and recognizing them as eligible for payments. Policy should also grant payments for pastures just to those who are effectively extensive. Besides, other proposals are to modulate aids basing on livestock size, and to add an additional aid when a minimum livestock size is achieved. Requirements for animal welfare and sanitary legislation should be differentiated among intensive and extensive farming.

Policy should also support interprofessional associations for promotion and consumption and support higher prices for sheep meat. A stronger support for young farmers is claimed, and also a support for early retirement of farmers. Trade policy should also address the abatement of duties in Arab markets which are an important opportunity for the system. Finally, the policy should enhance rural vitality and community, by increasing social services (schools and hospitals

^{15.} yo creo que sería más importante, más que una ayuda económica sobre... sobre oveja, tendría que ser una ayuda económica sobre la producción, o sea sobre el cordero.



for example), reducing fiscal pressure, increasing technologies and innovations (for instance in communication), and generally through a higher budget for the Rural Development Programme.

3.4 Resources & Network

Informal farmers' network and formal associations and cooperatives, represent the main vehicle to access information and discuss policies. Farmers seem to have wide interconnections among them, also supported by new social networks and mobile phones.

"I had good friends (farmers)...I am lucky because I follow their good suggestions." [G13]¹⁶

In addition, farmers' associations represent a source of information and a room for discussion and learning. There is a general tendency of an increase of access to information due to the presence of competent local public officers, trade unions that provide support in this sense, and internet, whose role is generally recognized as growing.

"Here we are lucky because we have very capable people (in public administration), at the Provincial level as well as at lower level." [G26]¹⁷

However, there are few indications about scarcity of information and the comprehension of policy.

"The farmers do not know what are the aids they recive. This is a failure. If you ask them, many do not know what and why they are gaining aids." [P7]¹⁸

At last, there are not direct evidences concerning the availability of capital to manage challenges besides the general low profitability and the progressive reduction of the amount of policy aids. For example, access to credit generally is not directly treated in the interviews. However, a related issue is the impossibility for people out of farm business to enter the sector due to the huge amount of capital required to obtain land, machineries, and infrastructure: people from out of family-farms are unlikely to own such amount of capital.

^{16.} tenía buenos amigos y algunos me... Y he seguido, y he tenido la suerte de seguir el consejo creo que que el bueno, que me han dado.

^{17.} Aquí que tenemos la suerte de que tenemos gente muy competitiv... muy competente, tanto a nivel provincial..., no todo el mundo, pero a nivel provincial como a nivel comarcal.

^{18.} No, los ganaderos no saben las ayudas que reciben. Es que eso es un fracaso. O sea, tú les preguntas y no… a ver, alguno sabrá pero no saben muy bien por qué les estás pagando.



"You cannot come here and buy 15 hectares all at once, or 20, and also buythe tractor....Or you own a lot of money, or is too hard to start a farm business. This is a problem." [G13]¹⁹

^{19.} no puedes llegar y comprar quince hectáreas de golpe, o veinte, comprar también el tractor, necesitas... O eres... Tienes un montón de dinero o es muy difícil incorporarte. Eso es un problema.



3.5 Overall results

3.5.1 Interpretation of results

The extensive sheep farming system of Hoya de Huesca has suffered a number of pressures over the last two decades. This condition has evidently led to changes at both farm and system level. However, the policy-tools provided during the years, as well as the deep changes in policy-setting that have occurred, contributed to the dynamics of the farming system's resilience. In the first place, one of the most affecting challenges is the low profitability of the sector.

« Let's see, the main issue in extensive livestock, in particular the sheep farming, is the margin of profitability, this is the main problem....just see intensive sheep farming, it is working because it has profitability » [G28]²⁰

« The profitability would be higher if the price for lamb was 140 Euros instead of 70...the issue is that nobody would buy the lamb meat, because there are pig and chicken meat, which are cheaper. » [G14]²¹

The direct payments are typically seen as the most important measure to face low profitability. Farm profitability and organization have always been linked to the provision of these aids. Therefore, changes occurred in the setting of this tool have increased the effect of persistent low profitability. Since the decoupling of payments occurred, the farm profitability is based on land rather than livestock. This led farms to search for more land.

« Because profitability did not increase as much as we hoped. It is impossible this (the farm business) can work, because costs today are doubled than 20 years ago, but prices are equal. So, they (policy-makers) are setting aids to compensate, this is a solution for today but not for tomorrow. » [G7-G8]²²

« On 800 hectares of land, just 300 are eligible for CAP aids...so, people (farmers) who usually pastures on mountains, does not have eligible land for pastures; so, they have to search land in other areas. » $[G14]^{23}$

^{20.} Vamos a ver, el principal problema que tiene la ganadería extensiva, concretamente la de ovino es la horquilla de rentabilidad, ¿vale? O sea, ese es el principal problema que hay, ¿vale?

^{21.} Pero la rentabilidad estaría en que un cordero en vez de costar setenta euros, costara ciento cuarenta, como pagan los musulmanes ahora, para la fiesta del cordero. Lo que pasa es que entonces no compraría cordero nadie. Tenemos el cerdo, tenemos el pollo de competidor en los riñones de... Se lo come todo.

^{22.} Pues porque no ha subido lo que tenía que subir, la rentabilidad. Trabajar a precios de hace treinta años es imposible. Es imposible que pueda funcionar, porque en la vida ha subido todo. Hoy en día ir a un taller te cuesta doble que hace veinte años o triple y sin embargo la carne la estamos vendiendo al mismo precio. No puedes competir con eso y te están poniendo una ayuda... Pero eso es pan para hoy y hambre para mañana.

^{23.} Te alquilan ochocientas hectáreas, pero de ochocientas hectáreas en la PAC solo puedes poner trescientas por decirte algo... Estamos sobre un treinta y cinco por ciento las que tenemos nosotros. Entonces la gente, pues gente que está pastando por la montaña, no tiene pastos para poder poner en la PAC, entonces tiene que buscar fuera, entonces algunos hacen eso, otros alquilan a los que ya tenemos...



This fact caused a high competition for land: scarcity of eligible land and increase of land prices are working as constraints of farm profitability. In addition, uncertainty in obtaining eligible land for subsequent years (by means of leasing) is associated to uncertainty in profitability. In fact, European policy does not take into account that this system typically comprises farms without land. The farms are often trapped by a limited profitability that is hard to improve by persisting in the same typical extensive form.

« So, it generated a strong pressure on land, this pressure has increased also due to the support for more intensive sectors » [P5-P6]²⁴

Furthermore, decoupled payments are linked to « admissible land », but a relevant amount of forested pastures are not recognized to be eligible for aids. Since this type of pastures is very common in the farming system, the development of extensive sheep farming is constrained. The asymmetry in land use is evident because the eligible land is under strong pressure, whereas other land is under abandonment.

« So, this area is the zone with the best pastures, but unfortunately it is going to be abandoned and many hectares are becoming too much bushy or forested...because farmers had to opt for other areas and other pastures to justify land under CAP aids regime » [P1]²⁵

«But, for example, there are areas, such as Pyrenees in which they have problems because the eligibility of their pastures has been invalidated and they have problems to obtain other lands to gain CAP aids » [G1]²⁶

Moreover, as explained in Fopia workshop, sheep farms must compete with cattle farms to obtain eligible lands. Cattle farms are more profitable, thus more capable to lease eligible pastures. The system of rights for payments allows intensive farms to gain aids for pastures, this causes distortions.

Next to this, the coupled payments for sheep currently standing in place are claimed as insufficient for effectively supporting the sheep sector. However, there is no evidence that such aid may enhance the resilience of extensive sheep, rather than the intensive production.

^{24.} Entonces se está generando o se ha generado una presión muy fuerte sobre superficie, que también ha sido de alguna manera aumentada esa presión por el sistema de cobro de ayudas de otros sectores, como el sector del intensivo...

^{25.} Pues esta zona, que es la zona de mejores pastos que hay, pues desgraciadamente se están abandonando y se están poniendo verdaderas hectáreas enteras de maleza, pues porque eh... los ganaderos han tenido que optar por otras zonas o por otros pastos para poder justificar.

^{26.} Pero por ejemplo hay zonas donde más bien, en el Pirineo también tienen problemas donde les han quitado la legibilidad a sus hectáreas que pastan y tienen verdaderos problemas para conseguir hectáreas para poder percibir las ayudas del PAC.



« They give us 12 Euros per head, but to improve the profitability, they should give the double... » [G5]²⁷

« If we got a coupled aid 20 euro per head high, we could better manage the business, even with more labour force. » $[P1]^{28}$

Further distortions have been brought by the application of historical rights both in decoupled and coupled payments. Historical rights are supporting farms, which formerly were in extensive sheep sector, to be currently in a different sector. A consistent number of farms have moved or are moving towards more profitable sectors.

« Another issue is that there are people with « old CAP », there are people who are gaining aids by means of old rights...and when CAP aids started they had a certain amount of land and sheep, but now they do not anymore. » [G5]²⁹

« In its current state, the regime of CAP payments with historical rights does not require you to still be extensive sheep farm. » [P5-P6]³⁰

« Now it's clear that, what it is called decoupling has been like an accelerator of abandonment of forage land and pastures » [P7]³¹

In the same way, aids for less favoured areas seem to be not enough and not extended to all needed zones. Extensive sheep farms usually stand in unfavoured areas, and consequently suffer low profitability, higher costs, and reducing consumption.

« An aid for less favoured areas exists, but it should be enhanced. » [P1]³²

^{27.} Que si dan doce euros por oveja, para ir un poco bien tendrían que dar veinticuatro, está claro.

^{28.} Eh... Si nosotros aquí fuéramos a una ayuda asociada en torno a veinte euros por oveja, ya estaríamos hablando de poder mantener dijéramos con mayores garantías una explotación ganadera con mano de obra, ¿vale?

^{29.} Hombre otro tema también es que hay gente con la, con la PAC antigua, hay gente que está cobrando todavía derechos de... Yo cuando empezó la PAC tenías cuarenta hectáreas, pues cobras de cuarenta hectáreas, tenías trescientas ovejas, cobrabas de trescientas ovejas y ya está. Pero ahora con las reservas, con la mochila que se dice, pues...

^{30.} un paquete de ayudas en base a los derechos de pago único en ese momento que... que tal como está la estructura de... de la gestión de esas ayudas para tener derecho a cobrar, pues no es necesario que tenga la explotación de ovino.

^{31.} Pero luego pienso que también claro, todo lo que ha sido la... el desacoplamiento de las ayudas y todo esto ha sido como un acelerador, ¿no?, del abandono un poco de pienso, ¿no? Claramente, que ha podido ahí acelerar el abandono de... de gente, ¿no?

^{32.} O [desfavorecida], que sí que existe. Entonces, esto lo que habría que hacer es potenciar, ¿vale?



« The extensive sheep system should get a higher coupled support, higher aids, above all in mountainous areas.. » $[G26]^{33}$

The above described low profitability condition is complicated by further challenges. The intensive work commitment of this type of farming is contributing negatively to the farm succession process. It represents a factor pushing farmers towards other farming systems.

« Finally, what a farmer should take into account is that there is not generational renewal, young people do not remain in farms, not at all not in extensive livestock. » [P1]³⁴

« How can I convince my son to stay in farm business knowing how a young boy lives today....I swear, I don't push my son to remain here. » [G27]³⁵

« Whether there is a young person who wants to start a farm, and I ask him for the first time « with whom are you? », and he says « I'm alone »...well, I say « forget the sheep, because if you get sheep, you will not have family. » $[G13]^{36}$

In addition, the intense work requirements and the depopulation of the area generate a lack of (skilled) workers. This constraint appears as a rigid boundary for the farm business which has no human resource to extend his activity or implement some changes. Hence, the absence of an effective policy of the labour market affects the resilience capacity of the farming system.

« It is hard to find workers and shepherds and, besides, skilled workers...it is hard to find people who can manage sheep...this is a disaster » [P7]³⁷

Moreover, the farming system stands in a limiting environment of local and national regulations. Farms are requested to respect strict rules. When a successor takes over his/her father's farm cannot comply with such normative.

^{33.} el sector ovino tendría que estar yendo una parte acoplada, pero tendría que tener..., tendría que ser mucha más parte acoplada, más dinero y además en zonas más re... zonas remotas sobre todo

^{34.} porque al final el ganadero lo que tienes que tener en cuenta es que o al final, el relevo generacional no hay, o sea la gente joven no se queda en el campo, sobre todo con la ganadería.

^{35.} con qué ánimos le voy a animar a mi hijo a seguir viendo lo que yo... viendo lo que vive un chaval normal...Te juro, yo a hijo no... no animo que se quede aquí.

^{36.} gente que se quiere poner ovejas, gente joven, alumnos de prácticas... Y yo lo primero que les digo '¿Con quién estás?', y me dice 'Solo yo', digo 'Pues olvídate de las ovejas porque si tienes ovejas no tendrás familia'.

^{37.} La dificultad que tienen de mano de obra y para buscar pastores o... y gente que sepa además; o sea que yo también conozco gente que es que... pues que no encuentran a gente que a lo mejor sepa llevar el ganado o tal, ¿sabes? O sea o que encuentran a gente pero que no... es un desastre.



« In the moment in which the father (farmer) passes away, and the son takes over the farm, in this moment the farm must be moved away from urban areas. » $[P1]^{38}$

Then, the sanitary legislation has led to a deep change in the farming system, causing the passage from local small slaughterhouses, to bigger provincial slaughterhouses. It was due to the incapability of small slaughterhouses to adapt to new strict rules. This legislation makes harder to implement organic production because it is complex. The sanitary normative neither takes into consideration the difference between intensive and extensive farming when requires mandatory corpse collection, this implies high costs.

« Local slaughterhouses and butchers were closed due to the new sanitary rules, this affected us dramatically. The local butchers allowed farmers to directly sell to them...so, now locals are disappearing, this is a problem for profitability and meat consumption. » [P1]³⁹

Finally, the regional legislation on wolves' attacks is impeding the conservation of the typical farming system. This regards also to predatory birds. Wolves' attacks are pushing extensive sheep farms to abandon mountainous lands, and this represents a cost for the farm business. The legislation does not provide sufficient compensation for damages, and does not support the implementation of new solutions for conserving the farming system. However, the compensation is not granted where it is actually needed.

« In practice, people used to bring sheep on the mountains and leave them there along 4 or 5 months, but if you do it now, the wolves will kill them. » $[G23]^{40}$

«So, they set the policy (compensation for wolves' attacks) in some municipality. But in which municipalities does the wolf attacks? In Leciñena, Farlete, Monegrillo, Zuera, San Matteo.... They set it in some municipalities but not in the municipalities where there is livestock and they would need, the policy here does not support. » [P2]⁴¹

^{38.} Entonces, esta gente en el momento que hay un traspaso de padre a hijo, esta granja se tiene que cerrar y se tiene que llevar aquí.

^{39.} nos perjudicó mucho cuando se cerraron los mataderos locales. ¿Vale? Los mataderos locales permitían que los carniceros de las poblaciones compraran el cordero directamente a... al ganadero, lo llevaran a matar al matadero local y luego lo vendían en la... en la carnicería, con las mismas garantías. Entonces ahora, al desaparecer los mataderos locales, pues eso eh... se ha convertido pues en un... en un problema sobre todo para la... la rentabilidad y el consumo de... de carne de cordero.

^{40.} Y entonces bueno, pues si se resulta que la gente de..., que está en el Pirineo, suben las ovejas a los prados y las deja allí que las deja cuatro meses o cinco meses en los prados, las ovejas o las vacas que están allí pues si las dejan allí se las come el lobo...

^{41.} Entonces, eh... lo han hecho por términos municipales, que es lo que os decía yo. Es decir, con quedar... ¿en qué términos municipales ha atacado el lobo? Pues en Leciñena, en Farlete, en Monegrillo, en Zuera, en San



Under the pressure of the above mentioned dynamics, the farming system and farms are carrying on changes of different types to cope with always stricter conditions. Some farms try to keep on going by limiting their extension and livestock size, and by basing their profitability on policy-payments from CAP pillar 1 and 2. In this case, also policy for quality regime (GPI « Ternasco de Aragón ») and for cooperation can support.

« Currently there are 700 heads sheep more or less, but around the year 2006 the livestock counted something like 3400, so from that moment farm business decreased because, basically, the costs of feeding increased too much; as a consequence we had to reduce livestock size to carry on the farm. $>[G6]^{42}$

« Is it important to be member of an association? Well, I believe it is, and we need more...Cooperatives should be supported, because cooperatives get everywhere, from this village to that one, does not matter if you have 80 or 3000 sheep. » $[G13]^{43}$

Other farms, instead, implement changes in farm organization and management. They do so in order to adapt to new pressing conditions, such as low profitability (by reducing costs of production), intensive work commitments and lack of workers (by changing practices and implementing technologies and novelties), the reduction in consumption, the increasing competition (by cooperate and promoting typical and new products), and the wolves' attacks (by using new management strategies and instruments).

« Then, we reduced costs, for instance, by basing feed on pastures, when possible, and by trying to reduce the costs of feeding in general and labour force. » $[G2]^{44}$

Mateo, en Tardienta, en Almudévar... lo han hecho por términos municipales. Pero y llega... llega aquí el caso que hay términos municipales dónde... dónde tú tienes ganadería aquí y a ti no... no te afecta para nada.

^{42.} En estos momentos hay unas setecientas cabezas de reproductoras. En..., hace... Desde el año dos mil seis creo, la explotación tenía, contaba con tres mil cuatrocientas, entonces desde entonces pues se ha ido reduciendo, ¿umm? Se ha ido la reduciendo la población, pues porque fundamentalmente porque me acuerdo que en esos años dos mil seis, dos mil siete, dos mil seis hubo unos precios muy elevados de lo que son los piensos y..., y entonces pues la verdad que lo sacamos de... Tuvimos que empezar a reducir porque las pérdidas eran bastante fuertes con tanta número de cabezas.

^{43.} que es que por eso digo yo que tienen que apoyar las cooperativas. Porque nosotros cooperativa llegamos a todo, desde el pueblo de aquí hasta el pueblo de aquí. Si tienen ochenta ovejas, como si tienen tres mil.

^{44.} hemos reducir gastos, reducir costes, intentar aumentar por ejemplo, pues intentar el subcontratar pues donde queda disponibilidad, subcontratar pastos de estos que te comento, de otoño a... Intentar bajar coste de alimentación fundamentalmente y costes de mano de obra.



« The goal of our project is to get the Virtual Electric Shepherd...In some part of the mountain this kind of shepherd is not plausible, so we should try to a novel shepherd, for instance based on laser system, this would really help us to manage the mountain » $[G1]^{45}$

Agro-environmental aids, greening payments, and measures for young farmers and investments in physical assets support the implementation of new solution, suitable in extensive sheep farming.

"We have increased the budget for agro-environmental measures, about pastures; here it has a wide positive impact on extensive sheep...requests for these aids have increased." [P5-P6]⁴⁶

"So, payments for organic farming are an additional aid of about 90 euro per hectare." [P1]⁴⁷

"Measures for supporting the construction of new structures have been carried out." [P5-P6]⁴⁸

Even though, in some cases, greening and other agro-environmental requirements could represent a limit for some practices.

« If you declare set-aside, there is a period in which you cannot enter to pasture...that is, the condition for the farmer to gain (greening) aid, is to not enter this land. » [P5-P6]⁴⁹

Finally, some farms move towards transformation of farm business, by introducing new productive activities. Here, the extensive sheep reduces its relative importance. Although constrained by legislative environment, transformations can be facilitated by 2nd pillar aids for investments and young farmers.

"People (farmers) got a kind of aids for investments; there was a support for 50% of investments. I said 50%. Many investments have been done thanks to that aid, such as this (agro-tourism)." [G27]⁵⁰

^{45.} Nosotros queremos hacer un... El pastor eléctrico virtual.....Un pastor eléctrico ahí es impensable, pero si fuéramos capaces de conseguir un pastor con nuevas tecnologías, no sé, un poco imaginario, que no tuviera, no tuviera cuestión física, sino láser o algo que nos hiciera cuadraturas... Eso sí que sería una buena cosa. Nos daría comodidad, cuidaríamos los montes y...

^{46.} hemos incrementando el presupuesto en alguna de las medidas concretas de pasto... de pastoreo, que ahí incide plenamente la ganadería extensiva, y sí que se produce..., se han producido más solicitudes en ese sentido, pero...

^{47.} Entonces, el ovino ecológico es una ayuda adicional de noventa euros por hectárea, también por hectárea, aparte de todas las que os he dicho.

^{48.} se han puesto en marcha medidas de apoyo, de subvención de instalaciones, de tal...

^{49.} Que si tú declaras barbecho, pues hay un periodo en el cual...No puedes entrar a pastorear. O sea, la condición para tener... para yo agricultor...Recibir una ayuda, es que tú ganadero, no entres en esta parcela.

^{50.} sacaron una línea de subvenciones para ayudar a la gente que tuviera iniciativas en hacer cosas; pues sacaron una iniciativa y una línea de subvenciones que daban al cincuenta por cien. El cincuenta por cien de la inversión. ¡Se hicieron montones de cosas! Como esta.



3.5.2 Results visualization on the ResAT wheel

Over last 20 years, changes in policy have affected the resilience of the farming system, and the current policy setting does as well. Hereafter the ResAT tool is used to visualise the case study's evidences resulting from the bottom-up analysis. The tool is essentially a wheel (figure 1) composed by three main sections (robustness, adaptability and transformability). Each section comprises four key characteristics. The ResAT wheel allows for giving an idea of how policies influence the farming system's resilience. In some cases, the policy-related interviews' content did not permit to consistently state how policies impact on specific characteristics in the wheel. In these cases, the related sections in the wheel are left blank.

In order to fill the whee	el, the Likert-scale	in table 2 has been use	ed.
	Enabling	Constraining	Score

Enabling	Constraining	Scores
Not clear		0
Not enabling	Not enabling Very constraining	
Slightly enabling	Slightly enablingConstrainingFairly enablingFairly constraining	
Fairly enabling		
Enabling Slightly constraining		4
Very enabling Not constraining		5

Table 2. Likert-scale as provided in Top-down analysis T4.2

After considering the specific influence of each policy-tool, an overall mark from the Likert-scale was assigned to the key characteristics in the wheel, where possible. Then, colours have been given assigned to the ResAT wheel, as follow:





Figure 1. ResAT wheel reporting Likert-scale assigned values per resilience characteristic through a coloured scale.

In the first place, the robustness section explains most of the policies' impact on the system. The status-quo is definitely constrained by some of the main policy-tools; therefore, a mark of 1 in the Likert scale has been given. The distortions in direct and coupled payments assignment between farmers, as well as the general decoupling of most of the aids, has led to the loss of status-quo. The traditional setting of the sector has been impoverished, and the system widely abandoned. The link between payments and land has distorted the typical land use. It hampers the usual cooperation among farmers in managing livestock because they must keep their activities separated to obtain aid. The badly distributed aid for Less Favoured Areas (the extensive sheep typically stand into this less favoured contexts), the insignificant effect of young farmers' payments, the constraining Natural Parks legislation which does not allow typical farming practices, urban legislation, and the not-so-effective results of Protected Geographical Identification (which should enforce the traditional productions of the region), do not improve the overall state of constrained status-quo. Furthermore, the sanitary legislation has added a significant impact on the typical system structure farms-local slaughterhouses. Sanitary rules led to the closing of smaller slaughterhouses towards the opening of fewer provincial bigger slaughterhouses.

The buffer capacity of the system appears constrained. This is due to the reduction of resources for coupled and decoupled payments, the distortions of granted aid between farmers, and an incorrect setting and distribution of important aid such as the compensation for wolves' attacks. It takes the Likert-scale value of 1.


In the adaptability section, there is only a small evidence that policy-tools tend to support the system's adaptability. First, flexibility seems to be enhanced by 2nd pillar CAP measures, specifically by investments for young farmers (measure 6), and physical assets (measure 4). Those measures provide farmers with dynamic resources to implement adaptations and changes, such as the introduction of new technologies and novelties. By contrast, absence or unsuitability of labour market policies leads to a condition of lack of workers which effectively represents a constraint for the flexibility. Many adaptive solutions suitable in this system would require availability of workers. Thus, a mark of 3 has been assigned. Second, variety and tailor-made responses are slightly enabled by 2nd pillar payments for organic farming and agro-environmental practices. These tools allow for implementing suited measures fitting in the context of extensive livestock to respond to specific needs. The assigned mark is 2. Lastly, not enough evidence was found to make statements about how policies support a middle-to-long term perspective or social learning.

Evidences on how policies influence the transformability of the farming system are less clear and abundant. Local and national legislations seem to constrain the capacity to transform. It is the case, for example, of the sanitary legislation which impeded the transformation to organic sheep meat production. In the case of National Park and Urban areas, rigid rules reduce the room for changes. Therefore, a constraining mark of 2 has been assigned to the characteristics of the wheel 'niche innovation' and 'dismantling of hindering policies'.

Regarding the learning capacity of the farming system, specifically related to the characteristics of social learning (adaptability) and in-depth learning (transformability), there are measures in 2^o pillar for cooperation, innovation and knowledge transfer, but evidences are not consistent enough to state how policies influence the system. The segments are left blank.

Equally, statements for short, middle, and long-term characteristics were difficult to be clearly identified. Also, in these cases segments are left blank.



4 Conclusion: Key findings

The results of the bottom-up policy analysis lead to the following conclusions:

CAP and other related policy slightly constrain robustness and transformability capacities and slightly enable adaptability capacity of the extensive sheep farming.

Robustness capacity

- The robustness of the extensive sheep farming system is constrained by the decoupled payment scheme of CAP. Since the decoupled payment based on historical distribution provides incentives for farmers to change from the extensive livestock farming system towards more intensive production as they will still be receiving payments for the ancient activity. Indeed, farmers receiving historical payments are not incentivized to increase the lamb prices, so they sell the lambs at any offer price. It contributes to keep or decrease lamb prices.
- Decoupled payments and the linkage between payments and land has altered land use and farm organization, as typically the farmers in this farming system do not own land and they feel forced to find eligible hectares, as only the management of this land is eligible for decoupled payments. It leads to increasing land prices and hence farmers' costs.
- There are still coupled payments per head, but they are not high enough to support the extensive farming system.
- Sanitary legislation, to the part concerning the handling of animals constrains robustness capacity. Most of the local slaughterhouses have been closed and hence the butchers are gone. The concentration of the slaughter services to the capital has reduced the selling opportunities of farmers and thus also their bargaining power.
- Environmental legislation, mainly legislation related to wildlife protection constrains robustness as the wolf attacks are increasing causing stress and economic losses. Natural park protection also hinders robustness by limiting the herd access to protected areas for grazing.
- Finally, urban legislation requiring moving the farms outside the urban areas and increasing building requirements of farms is constraining robustness.



Adaptability capacity

- Adaptation appears as the only aspect of system's resilience that is partly supported by policies, specifically by measures of the 2º pillar of CAP. Some farms have implemented novel farm management practices and technologies supported by greening (first pillar) and agro-environmental payments (second pillar). The latter instrument helps farmers to implement practices which fit comfortably into extensive livestock to adapt to specific needs. Besides, the young farmers' aids and the assets investments support contribute to the farming system's adaptability capacity.
- The CAP does not consider the specific characteristics of the extensive farming system. The policy does not take into account all the ecosystem services and public goods that the extensive livestock provides, neither the marginality of rural areas in which usually these farms stand. Therefore, the policy creates further distortions in addition to the standing pressures.
- Cooperatives and Geographically Protected Indications (pillar II) slightly enable adaptability by providing farmers opportunities to improve meat quality and animal handling.

Transformability capacity

- Transformability capacity is not supported enough by the CAP instruments. Only a few instruments and with low budgets are implemented in the sector.
- Furthermore, sanitary legislation hinders the farmers' opportunities to initiate new activities such as processing products, direct sales and restoring.

These resilience-constraining impacts could be addressed by the member state (Spain) and region (Aragón) by allocating budgets to the existing instruments in the CAP as it is up to the member stand and/or region to prioritise among the Pillar I and II instruments implementation.

Suggestions for improvements:

Many new potential policies have been mentioned and proposed by stakeholders in order to balance the capacity of the system to carry out its functions. Those proposals are prominently addressed to the payment scheme. Payments should provide higher aids, strictly limited to effective extensive farming, and more coupled with livestock instead of land. The elimination of historical rights for the decoupled payments is a key priority.



All public goods and eco-system services provided by the system should be recognized and protected by policy measures. The 2nd pillar CAP should comprise a general higher budget and target the specific needs and characteristics of extensive systems. CAP should also include measures for young farmers. National and local laws and statutes, especially about food safety, animal welfare and environment, should require different commitments for intensive and extensive farming.

- An eco-scheme specifically designed to address extensive animal farming system would be an appropriate instrument. It should be financed removing the remaining current support to intensive meat and milk livestock producers.
- Take the opportunity proposed in the new CAP to mobilize 3% of the envelop for direct payments to finance operational programs of producer's organisations and their associations.
- The development and consolidation of producers' organizations (PO) require real and deep change of the auditor's control. Retroactive interpretations of the regulations should not have been allowed. Auditors should generalize best practices and anticipate possible problems.



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D4.3 Bottom-up analysis: How do stakeholders experience the influence of policies on the resilience of farming systems?

Case study report on: arable farming system in the East of England, The United Kingdom

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1 Methods and data

1.1 Farming system cases

Previous interviews conducted with farmers as part of WP2 on farmers' learning capacity (n=18) and WP3 on farm demographics (n=9) were screened to capture diversity across the three elements of resilience (robustness, adaptability and transformability) and/or low resilience (see Table 1.1). The assessment was made on the farm situation at the time of interview, however it should be noted that the three dimensions of resilience and/or low resilience are dynamic and will differ across different points in time. The resilience assessment in Table 1.1 was initially made by the lead author by screening the interview transcripts. These were then cross-checked with the researchers who had carried out each previous interview.

Farms*	Robustness	Adaptability	Transformabilit
			У
Robustn	ess case study		
D2/L1	***	*	*
, L16	***	***	*
L3	***	*	*
Adaptab	pility case study		
D3	*	***	**
D4	*	***	*
D5	*	***	*
L2	***	***	**
L4	***	***	*
L5	***	***	**
L6	***	***	*
L7	**	***	**
L10	***	***	*
L11	***	***	**
L12	***	***	*
L14	***	***	*
L15	***	***	**
Transfor	mability case study		
D1	***	***	***
L13	***	***	***
L17	***	***	***

Table 1.1 Assessment of existing interview data in terms of resilience capacities. ***high; **medium; * low; - none.





Low resilience case study					
L8	**	**	*		
L9	**	**	*		
MC6	**	**	*		
L18	**	**	*		

*D=demographic interview; L= learning interview

1.2 Interviews

In total, 15 interviews were undertaken. Eight of these were with farmers, and seven with stakeholders (see Table 1.2).

Table 1.2 Details of farmer and stakeholder respondent	Table	1.2 Details	of farmer	r and stake	eholder r	espondents
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Interviewee	Description		
Farmer 1	Robustness case study		
Farmer 2	Low resilience case study		
Farmer 3	Adaptability case study		
Farmer 4	Low resilience case study		
Farmer 5	Adaptability case study		
Farmer 6	Transformability case study		
Farmer 7	Adaptability case study		
Farmer 8	Adaptability case study		
Stakeholder 1 National Farmers' Union (NFU)			
Stakeholder 2	Country & Land Association (CLA)		
Stakeholder 3 Department for Environment, Foo			
	Rural Affairs (Defra)		
Stakeholder 4	Farming & Wildlife Advisory Group		
	(FWAG)		
Stakeholder 5	Agricultural Industries Confederation		
Stakeholder 6	Agronomist (for Farmer 6)		
Stakeholder 7	Agronomist (& farmer)		

All farmers interviewed were asked to indicate associated stakeholders that could be contacted and invited to participate. Some were reluctant to supply contacts. We, therefore, approached a broader range of stakeholders relevant to the East of England case study.

An interview guide was developed, based on the template supplied by the task lead. For farmers – who were previously interviewed as part of the learning capacity or demographic interviews - only questions that were not included in these previous interviews were asked. These mainly related to the specific policy questions (see Appendix 1). Thus, data from interviewed farmers





consisted of (i) transcripts from learning capacity and demographic interviews; and (ii) transcripts from policy interviews. Stakeholders who had not been interviewed previously were asked the full set of questions (see Appendix 2).

All interviews were conducted by telephone and by one of four researchers. Farmer interviews were approximately 20 minutes long (plus earlier learning/demographic interviews ranging from 50 minutes to 74 minutes in length). Stakeholder interviews ranged from 18 minutes to 52 minutes. The interviews were recorded and transcribed verbatim.

1.3 Coding & analysis

The codebook was developed through a combination of a priori codes determined by the questions asked in the interview guide, and inductively, by developing codes as they emerged from the data. The qualitative analysis software Nvivo 11 was used to code and organise the data. All coding was conducted by one researcher. The number of nodes coded and the number of text fragments coded per interview is detailed in Table 1.3.

	Number of nodes coded per case	Number of text fragments coded per case
Farmer 1	20	30
Farmer 2	16	25
Farmer 3	33	55
Farmer 4	13	23
Farmer 5	12	22
Farmer 6	8	18
Farmer 7	16	33
Farmer 8	16	25
Stakeholder 1	21	30
Stakeholder 2	22	25
Stakeholder 3	20	29
Stakeholder 4	24	49
Stakeholder 5	27	45
Stakeholder 6	23	52
Stakeholder 7	21	27
Total	292	488

Table 1.3 Number of nodes and text fragments coded per case.





The text fragments that were coded were then scrutinised and compared in order to address the objective of the task: assessing how farmers and stakeholders perceive policies as enabling or constraining the resilience of the farming system. The following presentation of the findings also draws on the results from the learning capacity interviews (n=18), particularly for the section that outlines the risks and challenges faced, or anticipated, by the farming system.





2 Regional stakeholder check

The stakeholder check was conducted on 19 September 2019 in Cambridge. Although initially 10 participants agreed to take part, half of these were unable to make it on the day, so the final workshop consisted of five participants. This included two National Farmers' Union (NFU) representatives (one of which also manages an arable farm in the East of England), a policy officer from Defra (the UK government Department for the Environment, Food and Rural Affairs) and two agricultural policy academics.

The aim of the workshop was to validate the findings from the interviews through deliberation with the workshop participants. Firstly, we presented the challenges to the farming system and relevant policies, identified from the interviews and participants were asked to identify any gaps. Next, participants discussed the three main policies (basic payments, agri-environment payments and plant protection product regulations), and assessed these according to the resilience capacities of robustness, adaptability and transformability.

Throughout the report, validation or additional information provided by the workshop participants is indicated.

3 Applying the ResAT tool

The results obtained from the interviews and stakeholder check were assessed to identify policy attributes that contribute to the resilience of the farming system using the ResAT developed in Task 4.1 of the SURE-Farm project (Termeer, Candel, Feindt, & Buitenhuis, 2018). The ResAT is based on the adaptive capacity wheel developed by Gupta et al. (2010) involving a traffic light system where red indicates that a particular dimension of resilience is not sufficiently addressed, through to dark green, which indicates that a resilience dimension is enabled by policy. The adapted tool used in SURE-Farm differentiates across the three resilience capacities of robustness, adaptability and transformability defined by Meuwissen et al. (2019).

The tool was applied by assessing the findings from the bottom-up assessment presented in this report using a 5-point Likert scale. This ranges from a score of 1 for policy instruments that respondents perceive as constraining the resilience capacities, through to a score of 5 for those that appear to encourage it. Provision is also made for a score of 0 where the effect of the instrument is unclear. Based on subjective judgement, an aggregate score was attributed to each characteristic by resilience type based on the perceptions of the respondents.





4 Synthesis

4.1 Challenges

The main risks identified were Brexit, volatility in grain prices, weather, pests and diseases, and the availability of labour.

4.1.1 Institutional challenges

Clearly for UK farmers, the biggest risk and area of uncertainty at the moment is Brexit with farmers unclear about the future nature of the new British agricultural policy, and the trading relationships with Europe and other countries. Some were very uncertain about the future viability of farming with the loss of the single farm payment, given that margins are so low and the subsidy makes up a large portion of arable income:

"I think the big concern is that they / most of them are not viable without their basic payment and you know it's knowing how they can make changes to the way they farm or to you know diversify if that's going to be withdrawn" (Stakeholder 3)

However, others saw opportunities for a transformed farming system where farmers are paid for the public goods they provide on their farms (e.g. biodiversity, carbon sequestration, landscape etc.), enabling them to farm in a more sustainable way, while also running a viable business. The uncertainty of the way forward is making it difficult for farmers to plan too far ahead. Along with this there were concerns about competing on the global marketplace and the challenge of keeping the high standards of food production when food can be grown elsewhere much cheaper, often because environmental and safety standards are less stringent.

Workshop participants also indicated that fiscal policies, particularly around inheritance tax, could be a particular challenge.

4.1.2 Price volatility

As the main cereal grown, wheat is traded on the global market and is subject to the volatility of global wheat prices so farmers must manage these fluctuations and endeavour to sell their grain when prices are high, keeping a check on global markets and events that may impact on grain prices for the coming season (e.g. droughts in key grain growing areas of the world), as outlined by one stakeholder:

"Well, I mean, the overarching risk, but these are all inter-linked, is further volatility in the commodity markets, you know, that's ultimately the biggest year-to-year risk to arable farming. There are ways to mitigate it but I would say the most frequent and the one that's probably at the forefront, even ahead of Brexit, is what's the wheat price going to do next





year, have I sold right, have I sold enough forward, have I kept enough in the shed" (Stakeholder 2)

Exchange rates also influence the price achieved when selling grain. These risks were seen as beyond the control of the farmer, but need to be managed and anticipated. The price of input costs was also seen as a risk.

4.1.3 Cash flow challenges

Another related economic risk mentioned is managing cash flow. One farmer (Farmer 3) talked about feeling exposed to risk because he is renting more land – he has to pay the rent on the land, but is exposed to the risk of fluctuating markets and costs which make it difficult to manage cash flow. Others explained that the risks of weather, grain and input prices all make it difficult to estimate and manage cash flow because the margins are very low.

4.1.4 Environmental challenges

Weather is also cited as a major risk, again beyond the control of the farmer. Although respondents feel that the climate is becoming slightly warmer, it is the extremes of cold (severe winters), heat (summer droughts) and severe storms and flooding that are difficult to manage. The East of England is particularly prone to spells of dry weather during the summer months, and it is anticipated that water availability is likely to be a growing concern. A number of respondents felt that the climate is changing, and leading to increased incidence of extreme weather (dry periods, floods etc.), as Stakeholder 1 explained:

"Things like the severe weather has / it seems to be having a more severe effect in the last few years, so either flooding a couple of years ago, or the drought last year, which is looking like it could be another drought this year because its still been a really dry winter and that's having an impact on / that's a more recent impact on arable farmers."

Climate change and more specific environmental challenges, such as water supply and soil health, were also raised by the workshop participants. Changes to agriculture and agricultural practices will be required to address many future climate change impacts.

4.1.5 Pests, diseases and weeds

Pests, diseases and weeds were identified as a major risk for arable farmers, including:

- Blackgrass (*Alopecurus myosuroides*), which is fairly common on heavy clay soils and causes yield losses and has high resistance to herbicides.
- Cabbage stem flea beetle (CSFB) (*Psylliodes chrysocephala*) on oilseed rape causing crop damage more of a challenge with the ban on neonicotinoid seed treatments (since 2013)





for oilseed rape. The only current option is foliar pyrethroid sprays, but widespread resistance in CSFB means effectiveness is limited. Some farmers indicated they have stopped growing oilseed rape because of this pest, at least for the time being.

• Mammals (rabbits) and birds (e.g. pigeons) which eat and damage crops.

4.1.6 Regulatory challenges

Regulations, particularly around crop protection products, was also considered a risk in terms of enabling or constraining what products a farmer can use, and thus what crops it is viable to grow. The ban on neonicotinoids was seen as a barrier to growing oilseed rape and sugar beet, dramatically reducing yields, and respondents felt that removal of these chemicals should be phased out alongside developing appropriate alternatives. Respondents indicated that phyrethroids have limited effectiveness. Future concerns were around a possible ban on glyphosate, particularly for those adopting minimum till cultivation methods.

More broadly, respondents felt that some regulations are overly restrictive and inflexible, such as the 1 meter cross compliance strip around every field, which is not always practical and the threecrop rule which can be overly restrictive for contract farming. Constraints around planning permission was also cited as a potential barrier to diversification activities on farms.

Workshop participants also mentioned water regulations as a broader challenge for farmers.

4.1.7 Labour challenges

The final major risk identified was the availability of labour, although Stakeholder 2 indicated that the arable sector is not as affected as other farming sectors (e.g. horticulture). Respondents suggested that the issue is both with *"the availability of quality high skilled labour, and then there's the availability of numerous low skilled labour, and the two are distinct, but they're both big risks going forward"* (Farmer 7). With increasing technology, there is a rising demand for highly skilled operatives to work with complex, and expensive, machinery. Respondents indicated that working on a farm is not an attractive career choice for many young people today, as they don't like the unsociable hours it requires:

"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" (Farmer 6)

A number of the farmer respondents said that their employees were approaching retirement age, and had been working on their farm all their working lives. They were concerned about how they would replace these hard-working and experienced farm workers, as indicated by Farmer 5:





"I think that's an even bigger problem than Brexit. That is the one thing in my life that has hindered my advancement, enlarging the farm is getting suitable labour. It is getting worse now, we've got three youngsters on the farm and it's good, it's all right at the moment. The manager is only 33 but goodness knows where the next lot are coming from. I've got a shepherd who's 60 this year and I don't know where his replacement's coming from."

However, for a number of farmers who had transformed from dairy to arable farming, they indicated that the labour situation was now easier, as dairy farming requires more labour. There were concerns, though, that seasonal labour (e.g. at harvest time) would be difficult to secure when the UK leaves the EU, as much of this labour comes from Eastern Europe. Three reasons were given for a reduction in labour from Eastern European countries: (i) improved pay rates in their own country so working in the UK is less attractive; (ii) poor exchange rates since the Brexit vote means labour costs for overseas workers have increased; and (iii) since the Brexit vote overseas workers do not feel as welcome in the UK. This is having an effect on farms:

"Last year we had strawberries rotting in fields because no-one's there to pick them and people who put sort of longer-term crops in, like asparagus, which is in for eight years or whatever, they haven't put these crops in because they don't know who is going to harvest them at the end of the day" (Farmer 5)

4.1.8 Succession

Another, more longer-term risk, mentioned was that of succession. For some there was no clear successor as the farmer's children did not want to farm. While the children would inherit the farm, it was not clear if it would be maintained (and presumably contract farmed) or sold.

Workshop participants indicated that, related to this, was the tendency for rental agreements for land (Farm Business Tenancies) to be prohibitively short (around 3 years). This deters long-term investment on farms, but also detracts new entrants.

4.1.9 Access to advice and information

An additional challenge identified by participants of the stakeholder check was access to advice and information. However, it was emphasized that advice needs to be independent (of any service, input or product provider). Participants referred to a need for what they called an 'ADAS Mark 2' – ADAS (Agricultural Development Advisory Service) was funded by government prior to 1996 to provide independent agricultural advice and conduct agricultural research. Although ADAS is still valued by the farming sector, it is perceived as being less independent.

It was recognized that support and funding is needed to provide this, but it would be an important element of the government's new Environmental Land Management Scheme.





4.1.10 Societal perceptions of farming

Another challenge mentioned by the workshop participants was societal perceptions of farming and consumer food preferences. There was a perception that farming often gets a bad press and that publics may blame agriculture for environmental degradation. Thus, it was felt there is a need for better marketing of farming, raising awareness of the stewardship and conservation activities carried out by farmers.

4.2 Resilience

4.2.1 Capacity for dealing with risks and capturing opportunities The non-farmer stakeholders interviewed indicated that the arable sector in the East of England has remained fairly static over recent decades, and has not developed enough. Stakeholder 2 explained:

"I still think there's a big chunk of the industry in this area who frankly still do the same thing as they were doing 15 to 20 years ago, despite the fact that science has moved on, the markets have moved on, the products have moved on and so on and so forth and I think ... that's one of the challenges farming faces, is that there can no longer be a sort of we've done this for two years, so we'll continue for another 20, its got to move with the times and many have, so there's a lot of innovative work going on out there and people really at the cutting edge, who frankly are the ones that you know are cautiously quite excited about the time ahead with Brexit and everything else, but yes, there are many out there that haven't moved with the times."

This is put down to the high costs on these farms and the low margins which make them quite vulnerable (Farmer 8), as well as a lot of capital investment in machinery (Stakeholder 7). There have been changes to what is grown due to change in use of agrochemicals - so there has been a move from growing two-wheat and oilseed rape and all winter crops to now growing spring crops and wider rotations. Less oilseed rape is now grown because of neonics withdrawal. More family farms are being contracted as the farmers get to retirement age with no one to take over.

Respondents felt that the sector was fairly resilient compared to other farming systems, with the arable sector in the East of England possibly more used to forward-planning because of having to deal with commodity markets (Stakeholder 1). Stakeholders varied in their assessment of the ability of farmers to deal with risks and challenges. For instance, Stakeholder 5 said:





"I don't think they [farmers] understand what the influence of those risks will be, what the mechanisms to respond to them will be, what infrastructure and resources they will need to invest to be able to deal with them and over what time frame."

While Stakeholder 6 suggested that:

"Farmers, generally speaking, are fairly resilient characters who will adapt when they have to. They are also fairly slow moving unless they are forced to do something."

This suggests that farmers are better able to adapt gradually, rather than having to respond to sudden shocks that require immediate adaptation. However, Stakeholder 5 believes that policy change will happen fast (after Brexit) and farmers will need to react quickly. In order to do this effectively and to ensure a more efficient, resilient sector going forward, support will be needed to minimise the negative impacts of large-scale disruption.

Further, resilience of individual farms relates to the skill sets of individual farmers. Increasingly, farmers in this sector need to have diverse skills sets – involving both the practical side of farming and good business management. Some are highly successful entrepreneurs, with the ability to develop and grow the business responding to market and other demands, while others may be very good at the practical side of farming, but less apt with business management.

Stakeholder 5 suggested that structural change will be needed in order to respond to new markets, the likelihood of a reduction in the livestock sector and changing demands for the arable sector, the potential for more high value and niche cropping, less feed crops, and the increased demand for energy crops. Change such as this requires structural change which is risky but the farming system needs to be structurally able to meet changed market demands, whether that is driven by demand for public goods, consumer demand, world markets or climate change.

Respondents generally felt that the farming system was fairly forward-thinking and progressive, as Stakeholder 3 explained:

"To be honest, I've been most impressed by the farmers in the East of England being the most positive pro-active preparing for change than other farmers across the country."

But there is a need for more certainty so that they can plan for the future and diversity their markets, crops or other enterprises going forward. Stakeholder 6 said:

"If the Government turn around, over the course of the next five or 10 years and said, right, we're going to do away with your acreage payment, what we are going to do is replace it with a series of grant schemes for you to improve your infrastructure, or diversify, or





whatever, then I think farmers would embrace those very quickly. In terms of whether there's something there that stops this / that's stopping farmers doing so, I think / you could argue the basic payment is stopping farmers doing so because they don't have to, but I don't think there's anything that's particularly stopping them."

4.2.2 Strategies for coping with mentioned risks and capturing opportunities Various risk management strategies were identified that farmers adopt in order to deal with the identified risks and challenges. Firstly, farmers are likely to diversify their activities. This can either be through diversifying their crops, or, for example, by moving towards a mixed farming system. As Farmer 3 suggests, some risks, such as weather cannot be controlled, so *"you don't put all your eggs in one basket."* Alternatively, farmers may diversify their business through non-agricultural activities on their land, such as renting out farm buildings, renewable energy or agri-tourism. These diversification activities help farmers to spread the risk. The ability to manage when they buy inputs and sell products is also a way of spreading risk, with the aim of buying inputs when prices are low and selling products when prices are high.

Secondly, farms seek to become more efficient in their activities. This may involve investing in bigger machinery that will do the job quicker, thus freeing up time to do other things such as management. As Stakeholder 3 commented:

"Higher performing farmers spend more time in what you might call business management, planning, looking at budgets, looking at cost of production, looking at benchmarking, uptaking innovation, investing in themselves and their team, so they are the ones that / you know they have a strategy for looking beyond tomorrow, beyond the current year, planning rotations, planning investment."

It may also involve enlarging the farm size to make better use of resources, or to simplify activities.

Ensuring a stable financial basis is important for weathering shocks and stresses. This is primarily about reducing or eliminating debt, having sufficient savings as a buffer for dealing with difficult cash flow situations or bad years and a preference for owning rather than renting land (to avoid the burden of paying a fixed rent for land where the profits are unpredictable).

An important characteristic for coping with risk and capturing opportunities is farmers' attitude towards risk. Farmers who are more willing to take risks are more likely to engage in innovative and experimental practices, and will be open to new ideas, experimentation, learning from others and perhaps take on large amounts of debt. Risk averse farmers often continue to operate as they have always done, feeling comfortable with what they know and are familiar with, and feeling uncomfortable making big changes. This can make it difficult for them to make changes and big





decisions on their farm, leading to becoming locked in to a behaviour that is not resilient. Alternatively, risk averse farmers may be proficient in making small changes to their farm business in order to remain robust. For example, those farmers who are averse to taking financial risks may be better able to deal with shocks and stresses, such as price volatility or crop failure, than farmers who have high levels of debt. Younger farmers appear to be more open to taking risks than older farmers or by farmers where there is uncertainty about farm succession.

Cooperation with other farmers is another important risk management strategy. This may be either sharing resources, such as machinery, or selling through a cooperative in order to achieve better and more stable prices for products.

4.3 Policy

4.3.1 Which policies are influencing the farming system? The policies identified that influence the farming system include:

- CAP (Pillar 1 and 2)
- Plant protection product regulations
- Environmental regulations
- Employment & immigration law
- Local planning policies
- Health & safety regulations
- Policies affecting land tenure
- Grants incentivising innovation & access to technology

CAP Pillar 1: One of the major influences on the farming system under the CAP is through subsidies. This has provided both income support and helped to maintain land prices¹ – which has enabled farm businesses to borrow on the strength of a good land price. However, a number of respondents felt that innovation and development of the sector has been stifled by CAP, particularly in terms of turnover of land (making expansion difficult) and people, the introduction of new ideas, techniques and methods. Farmer 4 suggested that the CAP stifles innovation as it allows farmers to farm how they want without worrying too much about economic pressure. Stakeholder 1 agrees, indicating that although there are some pro-active farmers who are making sure their business is fit for the future, others have relied on their CAP payments and not readily considered adapting their business for the future.

 $^{^{\}rm 1}$ Some workshop participants felt that tax regimes may have more impact on land prices than basic payments.





Respondents indicated that how policies are set up in terms of what the payments are for strongly influences the farming system. For example, during the post-war period when the priority was feeding the population, farmers were paid to rip out hedgerows. Prior to the decoupling of subsidies from production, farmers would be paid based on quantities produced.

CAP Pillar 2: Environmental stewardship schemes have incentivised farmers to restore their least productive land into wildlife habitat or woodland. Evidence suggests this has had positive impacts on biodiversity, e.g. an increase in farmland birds. However, the delivery of agri-environment schemes in the UK has been marred with administrative issues, with farmers indicating a two-year delay in receiving their payments, and the money is often only marginal and not worth the effort of applying for. Thus, uptake of such schemes is less than optimal.

Plant protection product regulations: A strong policy influence is the regulations relating to plant protection products. Farmers rely on these chemicals to maximise the quantity and quality of their crops. Thus, the regulation of plant protection 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 as there are very few other products available to deal with the turnip yellows virus that can reduce yield by up to 50%). The main issue appears to be the speed with which these policies are implemented, not allowing time for alternative technologies or products to be developed. Thus, where products are withdrawn, there is a need for policy to support research and advice to help farmers adjust and cope with those changes. Respondents felt that it is difficult for farmers to know what crops to grow with loss of plant protection products, particularly when they do not have access to gene-edited crops which would mitigate against the ban on agrochemicals.

Environmental regulations: Environmental regulations, such as regulations regarding run off, or water regulations, influence what a farmer can and cannot do.

Employment and immigration law: Employment policies and immigration law impact access to farm labour. For instance, the Home Office restricts the number of seasonal workers allowed into the country, thus impacting on the ability of farmers to harvest crops (particularly an issue for horticulture). Workshop participants also pointed out that for arable farms access to skilled labour (particularly in new technologies) was an issue.

Local planning policies: On a more local level, the planning system can both be restrictive in terms of constraining potential new developments on the farm, although farmers do have a special case under policy SS2 (Development in the Countryside) to undertake certain forms of development.





Health and safety regulations: These regulations both affect how farmers must protect their own staff, but also the general public where there is access across their land.

Grants incentivising innovation & access to technology: In addition, policies that incentivise particular innovations can influence farmers to diversify into other activities. For instance, grants available from the Government for renewable energy can result in farmers producing biofuels or other forms of renewable energy. Grants can also be available for investing in technology, which can influence specialisation on the farm. For instance, Farmer 1 got a 40% grant to buy a new direct drill. However, grants can vary between different geographical locations (e.g. catchments, devolved administrations), so not all farmers have an equal access to these opportunities. Policies regarding rural broadband and the provision of good mobile phone signal are also influential. Policy can also stimulate research and market development, although this is perceived as lacking, with innovation being left to the market to deliver.

Policies affecting land tenure: Workshop participants indicated that polices that affect the duration of farm business tenancies (FBTs) can impact farms by either constraining or enabling long-term investment or attracting new entrants. For instance, FBTs of 3 years (which is common) are restrictive, and do not even allow for a normal rotation cycle on a farm.

4.3.2 Inconsistencies between stated policy and execution of policy

Respondents identified some inconsistences between stated policies and their execution. These relate to current policies under CAP and also the proposed new agricultural bill. In terms of existing policy under the CAP, a number of respondents pointed out that cross compliance rules can be misinterpreted as they filter down from DG AGRI to Defra, the UK Government's department for agricultural policy. They perceived Defra as taking a more stringent regulatory stance than required by Brussels. They also felt that other EU countries interpret cross compliance rules differently (and not as stringently as UK Government). As Stakeholder 2 explained:

"We've managed to transpose and develop policy in this country far more in a far more complex and draconian way than other member states have."

In terms of the new British agricultural bill, some respondents felt there were conflicts in a policy that seeks to provide cheap food for the masses but at the same time prioritises protection of the environment. Respondents felt that these two goals need to be better integrated so they can both be delivered.





4.3.3 Desired changes to enhance the resilience of the farm and/or farming system?

Respondents were asked if they were 'king/queen for a day', what policies they would change to improve the resilience of the farming system. Obviously, policy change is imminent in the UK, with the new agricultural bill introduced to Parliament in September 2018². Rather than the current subsidy system under the CAP, where farmers are paid Direct Payments based on the total amount of land farmed, farmers and land managers in the future are to be paid for 'public goods' – such as water quality, improved soil health, animal welfare, public access and flood reduction. A new Environmental Land Management system (ELMS) will deliver the new approach, with farmers providing the greatest environmental benefits receiving the greatest amount of funding. Along with this are measures to increase productivity and invest in research and development. There will be a seven year transition period to the new system.

With the backdrop of Brexit and the proposed shift in agricultural policy, respondents identified a wide range of areas where they would like to see change. However, a major factor influencing the resilience of the farming system is the uncertainty over Brexit and what the future agricultural policy will look like. In order to be resilient, particularly in terms of adaptability and transformability, farmers need to have a certain future. A number of the desired changes outlined below reflect this concern about the current uncertainty in the future of British agriculture.

Equity in market opportunities

Firstly, the majority of respondents indicated they felt it is important to have a level playing field in terms of market opportunities, so all imported food should be produced according to the same standards otherwise it would be difficult to compete. Respondents explained:

"I think there could also be some major concerns around us ramping up our production standards here and whilst we're not necessarily ante that, it has to be paid for somewhere, and I think one of the biggest risks to our arable industry here is that we will have to abide by much higher standards and more draconian stipulations than any of our neighbours and that will just make us uneconomic in the market and uncompetitive" (Stakeholder 2)

"I'll compete with anyone from the world that has the same legislation / the same products we can use and the same environmental rules and everything else, that's fair game, but when we import a load of products that maybe GM but we're not allowed to use that technology

² Although the agricultural bill could be dropped and a new one designed should the UK have a different government after a general election.





here, or a ban on insecticide, but use a product from around the world that uses loads of it / that's not right" (Farmer 3)

There are fears that if new trading relationships are established with other countries who are able to produce food more cheaply (due to the intensive nature of production, GMOs and less stringent environmental and quality regulations), it will be very difficult for British farmers to compete with these imports. Thus, there are calls for the new payments to fully reflect the broad spectrum of public goods (e.g. such as not growing GM crops) and, as workshop participants mentioned, perhaps compensate farmers for the additional costs of farming to high UK standards compared to imports. Alongside this is the concern that farms in the UK will become less productive and less about producing food as they focus on public good delivery, therefore the UK will need to import more food from elsewhere. This reduces food security, exports the negative environmental impacts of farming somewhere else and takes away productive land that that country could use to feed its own population, as Farmer 3 pointed out:

"So particularly with standards of product coming in and leaving the country, particularly those coming in at a standard that's below ours, we don't want to export our environmental footprint or have products coming in that use products that we've banned in this country for health reasons or for environmental reasons."

Improving public understanding of the value of food and food production

In order to overcome some of these issues, respondents felt that there needs to be a much stronger public awareness and an education campaign in order to get the public to recognise the true value of food and pay a fair price:

"It'll come down to price and it'll come down to whatever other deal goes on that they've got to do a quid pro quo, you know, one for one, and they'll let lower standards in and let the public decide if they want to buy. So if food comes in at a lower standard but it's a lower price, there's a percentage of the population will go for that. But we need to be teaching, well, showing, we need to demonstrate why our standard is where it is, what else we're delivering food, animal welfare, food husbandry, land management" (Farmer 3)

"I would stop everybody talking about cheap food and make them realise that food is worth something and has a value and needs to be paid for" Stakeholder 4

A number of farmers were keen on getting the public onto their farms to educate them about farming and how food is produced, as Farmer 3 outlined:





"And under the newer scheme, we need more of that, we need to get the public engaged in farming, where food's produced, how it's produced, why we do what we do as a farmer to the countryside, as in cultivate things, spray things, kill animals for food, it's all going to be linked back up."

Alongside this, there were calls for proper labelling and transparency to that consumers are aware of the provenance of the products they buy and how they were grown. Farmer 3 commented:

"At the moment we've got supermarkets labelling products with fake farm names and importing products from around the world to put under that label."

Balancing delivery of public goods with food production

About half of the respondents indicated that they welcomed a 'greening' of agricultural policy, although it needs to be delivered effectively and with sufficient reward to make it financially viable. This would involve an integrated policy that looks at both the required food production outcomes from the sector, alongside the environmental/public goods, rather than the current disconnect between environmental regulation and support for the farming industry. Stakeholder 5 suggested an integrated land policy that brings together food, agriculture, environment, and energy policy, rather than separate silos for policies in these areas.

Farmers 5 and 6 felt that delivering public goods should be viewed a stand-alone business enterprise that makes money, rather than compensation for the loss of agricultural profit. Others, however, were concerned that too much focus on public goods took away from the primary task of food production. Although farmers are currently reliant on subsidies, respondents felt that farmers would prefer a system where they did not have to depend on government funds, but they were paid properly for what they produce, as outlined by several respondents:

"I receive my single farm payment off my base payment. It took me two and a half hours and I get a six figure sum for that. Now that is / there is something inherently not right with that system... for what we actually have to do to get that money, it's been / very lenient and very easy system to be honest, especially the last five or 10 years, I mean, prior to that, it was slightly more awkward, but recently it's been, yes, it's been really easy" Farmer 6

"If I was king for the day that I would be trying to design something, a farming system, or a / an environmental support or farming support system which took due consideration of the environment but also let farmers farm" Stakeholder 6

Differentiation between small and large farm businesses





Respondents recognised that smaller businesses cannot always access the latest technology so suggested that support for infrastructure payments rather than direct payments could be offered to enable them to adopt new technology. There were concerns that existing policies are not focused on variety and do not fully recognise that every farm is different and not all farms can implement the same criteria (e.g. 3 crop rule, size of field margins etc.). There were calls for more policy flexibility, such as policies that are more outcome based not just process based.

Dealing with price volatility

Some respondents sought policy instruments that would lessen the impact of price volatility for arable farmers, such as government-led insurance scheme or a minimum payment guarantee.

Improved advisory services

Some respondents felt there is a need for improved provision of advisory services, with a focus more on advice than inspection. Farmers appreciate having someone knowledgeable (and not judging) on the ground to talk to.

Overcome the bureaucracy in administration

A major barrier to farmers applying for agri-environment, or other grants, is the complexity involved such as extensive form-filling and inflexible compliance requirements. Some feel that the levels of the funding available are not worth the effort of applying. This, together with problems with previous schemes where payments were delayed by up to 2 years due to administrative issues, is a barrier to uptake. Respondents indicated that any new grant or funding schemes to incentivise behaviour or support farm businesses needs to be less bureaucratic, more flexible and with appropriate levels of support.

4.4 Resources & Network

4.4.1 Comprehension of relevant policies

In general, respondents felt they had an adequate understanding of the relevant policies. Six of the farmers felt they had a generally good understanding of policies, one felt they had an average understanding and one felt they did not have a good grasp of policies. Of stakeholders, 5 indicated they had a good understanding and two felt they did not. However, as Farmer 1 stated:

"There are so many things happening, particularly at the moment but all the time really, and so many bits of legislation that impact the farmer, that I wouldn't even come close to having a complete view. But there are all kinds of different directives coming in... So I would say I would be some way off having a good grasp of that."





4.4.2 Availability of information on policies

Respondents get their information from a range of sources. However, these are often through their trusted peer and professional network, such the NFU, CLA, Tenant Farmers' Association (TFA), National Sheep Association and the Agriculture and Horticulture Development Board (AHDB). In addition, information is also gained from trusted advisors, such as agronomists or consultants, land agents, the farming press, and by attending events organised by representative organisations. Annual events are held every year to update farmers on environmental regulations and changes, such as the Farm Business Update (run by FWAG, NFU, CLA, Environment Agency, Natural England and others), and the NFU roadshow that provides updates on the Basic Payment Scheme. Who is consulted will depend on the type of advice that is being sought. Government websites (e.g. Defra, Natural England) and the Farming Advice Service are useful for direct information on policies, but advisors can help to inform farmers about how they apply to them in their particular circumstances.

One farmer highlighted how he finds it difficult to make sense of all the information that is available:

"I suppose / there's so much information thrown at us from many different directions, sometimes you feel a little bit overwhelmed and tend to just pick out the little nuggets of information that really only apply to you. I think it's a good thing. I think that there is so many more sort of like meetings and agronomy workshops that you could go to and people are only too willing to help and I do think that's a big plus because there never used to be this available, even say, 10 years ago, so I think it's good, but a bit overwhelming at times" Farmer 2

4.4.3 Networks and organisations that influence policy

Respondents identified a number of organisations that may influence policy. Organisations such as the CLA and NFU act as boundary organisations. They lobby the government on behalf of their members and then interpret policy back to the members so they are better able to comply with them.

Trade bodies, such as the Agricultural Industries Confederation (AIC) for agronomy companies and the Crop Protection Association (CPA) for crop protection companies, work with policy makers and transfer information both ways. These organisations represent the agri-supply industry including animal feed, crop protection and agronomy, fertilisers, grain and oilseed, seed. These networks are important as agronomists see part of their role as working out what policies will have an effect in the short and long-term and filter out which ones will have an effect on their clients. This helps farmers to future-proof their business with an eye on future policy.





Other networks exist that also lobby government such as Redlist Revival, the Nature Friendly Farming Network, RSPB, National Trust and water companies.

Also, a lot of farmers are involved in discussion groups so will learn about policies via these peer to peer interactions.





5 Overall results

Table 4.1 sets out the extent to which respondents perceive current (CAP) and future (as set out in the current UK's new post-Brexit agricultural bill) policy instruments as enabling or constraining characteristics of each resilience type, providing a summary justification for each score. These scores are then combined into the ResAT Wheel in Figure 4.1 and Figure 4.2.

Table 4.1 Likert scale assessment of farmers' and stakeholders' perception of existing and future policy resilience (on a scale of 0=not clear; 1=very constraining; 2=constraining; 3=neither enabling nor constraining; 4=enabling; 5=very enabling/encouraging).

Question	Existing	Post-Brexit	Arguments
	Policy	policy	
	Scale (0-5)	goals	
		Scale (0-5)	
	ROBUSTNES	S	
1. To what extent is a focus on	3	1	No policy instruments appear to
the short-term enabled or			focus solely on the short-term.
constrained by the policy			Future policy does not support
instruments?			short-term change.
2. To what extent is protection	4	2	Basic Payments under the CAP
of the status quo enabled or			foster a business as usual
constrained by the policy			approach and can stifle
instruments?			innovation. Proposals under
			new agricultural policy would
			disrupt the status quo.
3. To what extent is the	1	0	The Basic Payment system tends
development of buffer resources			to obstruct farm growth
enabled or constrained by the			particularly for rented land as it
policy instruments?			disincentives land sales.
4. To what extent are other	3	0	No policy options for risk
modes of managing risks			management are introduced.
enabled or constrained by the			
policy instruments?			
	ADAPTABILI	ΤΥ	
1. To what extent is a focus on the	4	0	Existing policies encourage mid-
middle-long term enabled or			long term focus through agri-
constrained by the policy			environment schemes and cross
instruments?			compliance. Respondents are
			unclear about focus of new
			policy.





2. To what extent is flexibility	1	0	Respondents feel existing agri-
enabled or constrained by the			environment schemes do not
policy instruments?			allow farmers to respond in
			flexible ways. Unclear about
			flexibility of new policies.
3. To what extent are variety and	1	5	Respondents felt current
tailor-made responses enabled or			policies constrain variety, but
constrained by the policy			the new policies appear to
instruments?			encourage diversification and
			delivery of multiple ecosystem
			services.
4. To what extent is social learning	3	0	Existing policies do not appear
enabled or constrained by the			to either enable or hinder social
policy instruments?			learning. It is unclear to what
			extent new policies will facilitate
			social learning.
	TRANSFORM	1ABILITY	
1. To what extent is a focus on the	3	5	Some incentives for young
long term enabled or constrained	0	<u> </u>	farmers and other new
by the policy instruments?			entrants some innovative
			investments but scale of
			support is low. Future policy
			focus is likely to include long
			term objectives.
2. To what extent is the	1	5	Little scope for radical
dismantling of incentives that		_	modification of incentives under
support the status quo enabled or			existing policies. Future policy
constrained by the policy			will have more emphasis on
instruments?			state support for public goods
			rather than income subsidies
3. To what extent is in-depth	2	3	Advice on new technologies and
learning enabled or constrained	_	_	environment is available, but
by the policy instruments?			not always perceived as from
			independent sources. Basic
			payment can stifle need for
			transformative learning. New
			policy will require further
			investment in order to
			encourage in-depth learning.
4. To what extent is the	1	4	Existing policy under Basic
enhancement and acceleration of			Payment stifles innovation. New
niche innovations enabled or			,





constrained by the policy		policy aims to facilitate farmer
instruments?		access to innovation.

The findings suggest that currently arable farming in the East of England could be assessed as more robust, than adaptable or transformable, particularly in terms of maintaining the status quo. This concurs with the assessment in the workshop, which suggested that basic payments enable robustness, but are likely to be neutral in terms of adaptability (due to a lack of variety and flexibility in policy instruments) and constraining in terms of transformability (as there is little scope for radical adjustment to existing instruments, and the basic payment system does not encourage innovation). Agri-environment schemes are perceived as neutral for robustness, and constraining for adaptability and transformability, but have the potential to enable general resilience.

There is a high level of uncertainty regarding the nature, scope and impact of future UK agricultural policy. This is largely due to the lack of specificity in the type and extent of support that will be available, the trading context and the regulatory environment. However, based on the current vision for the new agricultural policy, it is likely that there will be large-scale transformation in the UK agricultural sector, including arable farming. This will require a fundamental paradigm shift in thinking from farmers and others in the food system supply chain. It will certainly disrupt the status quo of the current system, and has the potential to support niche innovations and a long-term focus on balancing food production with the provision of public goods.





Figure 4.1 The ReSAT Wheel for existing policy instruments

Figure 4.2 The ReSAT Wheel for perceptions about future British agricultural policy









6 Conclusion

- The East of England farming system has remained fairly static over decades, although it is considered fairly robust compared to other farming systems.
- Farmers were considered to be generally resilient and able to adopt to changes, but they are better able to adapt gradually rather than respond to sudden shocks.
- CAP cross compliance rules are perceived as being interpreted differently across member states, with the UK taking a particularly stringent regulatory stance.
- While many arable farmers are dependent on the single farm payment (under the CAP), respondents recognised that this stifled innovation and change in the farming system.
- Changes in crops grown have occurred reactively in response to regulatory changes for plant protection products and the use of neonicotinoids.
- Availability of glyphosate is likely to be a barrier to an expansion of conservation farming, such as no or minimum till.
- Farmers risk management strategies include diversification, improving efficiency, ensuring a stable financial basis and cooperation with other farmers. Policies that enable these strategies can enhance resilience.
- Uncertainty about future British agricultural policy after Brexit constrains resilience of the farming system.
- Recognition that a new policy that priorities public money for public goods must ensure this is integrated with support to enable sustainable (not cheap) food production.
- Need for an integrated land management policy that brings together agricultural, food, environmental and energy policies, together with support for research and development of new technologies (including finding alternatives for banned agrochemcials).
- Concerns over future equity in market access and the need to compete on a level playing field i.e. all imported food should be produced according to the same standards as in the UK, or farmers should be compensated for the increased cost of maintaining high standards.
- Respondents called for policy support for stronger public awareness (e.g. labelling, information etc.) about the real value of food and the cost of production.
- There is a need for flexibility in policy instruments that recognise the diversity of farm businesses (size, geography etc.) that is outcome-based (rather than just process-based).
- Trusted peer and professional networks have an important boundary role to play in lobbying government and interpreting policy back to farmers and other stakeholders in the farming system.

To conclude, a move away from the Basic Payment system and the CAP was largely supported by respondents, but it must be replaced with an integrated policy environment that enables farmers to be **profitable in food production** as well as **deliver public goods.** This will involve





appropriate levels of support (with less administrative burden) for public good provision, policy instruments that lessen the impact of price volatility, import policies that reflect the high environmental and welfare standards of UK farming and mechanisms to improve public understanding and demand for healthy and affordable (not cheap) food.





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