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Policies and Farming System Resilience *A Bottom-Up Analysis*

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4.1 Introduction

The interest in the concept of resilience is growing in both academic and practitioner circles concerned with food systems and policymaking (e.g. Fan *et al.* 2014; Civita 2015). The mere fact that, at the time of writing, the impact of COVID-19 alone initiated a surge in research on how to enhance the resilience of food systems worldwide only confirms this growing interest. It is because of such shocks, but also worldwide competition, volatile markets, geo-political tensions and ongoing stresses like climate change and environmental issues, that the European Commission (EC) is increasingly realising the importance of having resilient EU agricultural and food systems in all circumstances. Hence, when presenting its legislative proposals for the Common Agricultural Policy (CAP) post-2020, the EC already explicitly emphasised that the CAP should contribute to ‘ensuring a more resilient agricultural sector in Europe’ (EC 2018). Moreover, the Farm-to-Fork Strategy, as part of the EU’s Green Deal, is introduced with the aim to strengthen EU food systems’ resilience (EC 2020). Whereas shocks and stresses affect food systems at large, enhancing resilience includes supporting local farms and farming systems to manage and respond to the different shocks and stresses while maintaining their essential functions, like producing food, providing employment and income, and preserving rural areas, ecosystem services and biodiversity (Meuwissen *et al.* 2019 and Chapter 1). The increasing attention on resilience reflects a need among policymakers to find ways to better support complex systems and their critical functions in times of rapid and unpredictable economic, social, environmental and political change.

The concept of resilience has received attention in the Policy Sciences, primarily by scholars who focused on how to design policies that are capable to deal with uncertainties, i.e. the resilience of policies themselves (e.g. Swanson *et al.* 2009; Howlett 2019). However, public policy research to date has barely analysed the (potential) effects of policies on the resilience of complex systems (Feindt *et al.* 2020). In contrast, the system resilience literature was more interested in understanding how public policies can reinforce the resilience of complex systems, such as bio-based production systems (Ge *et al.* 2016), energy systems (Gatto & Drago 2020) and urban infrastructures (Béné *et al.* 2016). This body of literature has provided valuable insights into the policy variables that can affect the resilience of complex systems, mostly by following a top-down approach to analysing (potential) policy impacts and the degree of goal attainment over time. However, less knowledge is available on how public policies influence the resilience of farming systems ‘in practice’ (i.e. within the implementing environment and its contextual factors, Berman 1978). The effects of agricultural policies are mostly studied at the farm level. Effects at the level of farming systems, where multiple policies interact, leading to synergies or trade-offs that might also affect system resilience, have received less attention. Contextual routines and private incentives might affect the resilience effects of policies, too. Moreover, whereas a policy might be designed with the intention to support the resilience of farming systems, its actual effects might be experienced differently on the ground, depending on the farming systems’ characteristics, local context and the expectations of the targeted actors. Comprehending how actors in farming systems experience policies and their resilience effects is indispensable for understanding the relationship between policies and resilience. This can also help policy-makers draw lessons and adjust policy design and delivery.

Against this background, this chapter seeks to address whether and how policies enable or constrain the resilience of farming systems through the perspectives of actors at the farming-system level. We set out a bottom-up approach for policy analysis, in which we analyse how actors within and surrounding a farming system experience the resilience effects of the CAP and relevant adjacent policies (e.g. regulation of plant protection products, legislation on manure and fertilisers, support for weather risk insurance, environmental policies or land tenure legislation). Our analysis draws on in-depth interviews with a

broad array of relevant actors in five European farming systems. The interviews provided us with a wider picture on the enabling or constraining effects of policies on the resilience of farming systems from the respondents' perspectives. Subsequently, the findings of the interviews were reviewed in regional focus groups and, eventually, compared. The chapter proceeds with elaborating the theoretical perspective that guides our analysis (Section 4.2). This is followed by an explanation of the research methods (Section 4.3). Subsequently, the main findings of the bottom-up analyses of the CAP and relevant adjacent policies in the five European farming systems are presented (Section 4.4). The chapter ends with reflections on the key findings that have emerged from the bottom-up analysis (Section 4.5).

4.2 Theoretical Framework

4.2.1 Public Policy and Resilience Capacities

Resilience is understood as the capacity of farming systems – i.e. regional networks of comparable farm types and other non-farm actors within an agroecological context (Chapter 1) – to absorb or respond to shocks and stressors, while maintaining their essential functions (Chapter 1). Following this book's approach, we distinguish between three resilience capacities of farming systems: robustness, adaptability and transformability (Chapter 1). As farming systems are open systems, not only internal features (Chapters 1–3 and 5) but also external influences, such as public policies, affect the systems' capacity to maintain the desired functions in the face of adverse developments.

Both the resilience and policy sciences literature have acknowledged the potential of public policies to affect a system's resilience in several ways. Various academics have made efforts to identify specific policy characteristics that may improve the resilience of complex systems, e.g. through enabling polycentricity, accommodating self-organisation and knowledge networks or by encouraging learning and experimentation (van den Brink *et al.* 2013; Béné *et al.* 2016; Karpouzoglou *et al.* 2016). These studies, however, generally do not distinguish between the robustness, adaptability and transformability of farming systems. Supporting each of these resilience capacities requires different types of policies, each with different priorities and goals, instruments and

budget requirements. In a previous study (Buitenhuis *et al.* 2020), we have argued that **robustness-enabling policies** are characterised by a short-term focus on recovery of existing functions of the system, protecting the status quo, providing buffer resources and government-supported modes of risk management. (Chapter 2 discusses different forms of risk management in more detail.) **Adaptability-enabling policies** are characterised by a focus on the medium term (one to five years) and flexibility that allows for tailor-made responses, they enable variety between and within farming systems, and support social learning. Policies may enable **transformability** through a long-term focus, dismantling incentives that support the status quo, and supporting in-depth learning and niche innovations.

Even when policymakers design *specific* policies in such a way that they may support the different resilience capacities, systems are affected by a broad *range* of policies which possibly produce divergent effects. This collection of policies forms a complex policy mix in which many policy goals and instruments interact (Howlett & Rayner 2007; Howlett 2019). Farming systems in the EU are affected by the CAP which pursues numerous goals, uses a diverse set of instruments, and operates at the European, national and regional levels, making it a complex policy mix in its own right. At the same time, the CAP is only one of many policies affecting EU farming systems, the interactions between which remain unclear, adding extra instruments to the mix. Various academics have discussed that one risk associated with overly complex policy mixes is that they likely contain inconsistent instruments with ambiguous means–ends relations that lead to trade-offs and reduced effectiveness (Howlett & Rayner 2007; Howlett 2018). Specifically, certain policy instruments can support one resilience capacity, while at the same time constraining others (Ashkenazy *et al.* 2017). For example, whereas subsidies related to existing production methods may enhance robustness, they may also constrain adaptability or transformability by reducing recipients' motivation to diversify practices or to explore niche innovations.

Following a top-down policy analysis approach, previous SURE-Farm research analysed the operational logic of the CAP and its national implementations from a resilience perspective. Whereas the CAP and its national implementation aim to support farmers, to ensure food security, and to contribute to sustainable agriculture and rural development in Europe, they were not necessarily designed with

Table 4.1. *How CAP instruments affect the resilience capacities of farming systems*

Robustness	Adaptability	Transformability
<ul style="list-style-type: none">• Direct payments (basic payment scheme, greening payments, and young farmer payments);• Market safety net instruments;• Crisis reserves;• Support for insurance schemes.	<ul style="list-style-type: none">• Agri-environmental programmes in the RDPs;• Investment support linked to sustainable farming practices;• LEADER programme in RDPs;• Options to tailor national and/or regional implementation of the CAP (e.g. modulation between Pillar I and II; optional direct payment measures; and options for designing RDPs).	<ul style="list-style-type: none">• Support for organic farming;• The European Innovation Partnerships ‘Agricultural Productivity and Sustainability’ (EIP-AGRI);• Support for new rural value chains to encourage niche innovations.

Source: Feindt *et al.* 2018; SURE-Farm 2020

resilience intentions. However, the resilience concept proved useful to examine the CAP’s capability of supporting complex farming systems. The top-down analysis revealed that different CAP instruments unequally affect different resilience capacities of EU farming systems (Feindt *et al.* 2018; SURE-Farm 2020). Despite some differences in the national CAP implementations, a comparison across EU farming systems revealed regular connections between certain instruments and resilience capacities (Table 4.1).

The top-down analysis showed that the CAP is strongly focused on supporting robustness. Most of the CAP financial resources are used for income support measures that provide buffer resources and allow farmers to continue their current business model. At the same time, the CAP offers less resources for instruments that enable adaptability. Only some measures in the Rural Development Programs (RDPs) encourage social learning, cooperation and innovations. Finally, the

top-down analysis found that the CAP constrains transformability because business-as-usual remains strongly supported. Only the CAP's support for organic farming, new rural value chains or the EIP-AGRI were found to be designed to support changes in the operational logic of farms or value chains. Generally, the CAP provides little support or direction for long-term change through, e.g., in-depth learning or by encouraging radical innovations. While the top-down analysis provided a systematic examination of the extent to which the CAP's policy output is expected to enable or constrain the three resilience capacities, our previous findings were not necessarily congruent with the experiences of actors who deal with the CAP as part of their everyday practices. A bottom-up analysis of how actors involved in farming systems experience the policies and their effects, therefore, offers complementary insights into how the CAP and adjacent policies enable or constrain farming systems' robustness, adaptability, and transformability in practice.

4.2.2 A Bottom-Up Approach to Analysing Policy Effects on Farming Systems' Resilience

Bottom-up approaches to policy analysis differ from top-down approaches in that they move the analytical focus away from policy outputs and goal attainment to the specific contexts in which a policy is implemented. As such, they share an interest in local actors' perspectives on policy delivery and impacts (Nilsen *et al.* 2013). Bottom-up approaches have, for instance, often been used in policy implementation research, where they have demonstrated that putting public policies into practice and attaining intended outcomes is far from straightforward (Berman 1978; Matland 1995). For example, the EU aims to improve regional economic development and collaboration through its Cohesion Policy, which follows principles that are identical across the Member States. However, Dąbrowski (2013) used a bottom-up approach to show that the Cohesion Policy's implementation and effectiveness vary across regions due to differences in, e.g., traditions of decentralisation and collaborative policymaking, or the administrative capacity and resources of sub-national authorities. So, whereas European policymakers can influence the policy output, they can hardly control how the local-level context will affect the policy, leading to variation in policy effects (Berman 1978). Given that policies

and their effects seem to differ depending on the context in which they are implemented, we studied the effects of the CAP and adjacent policies on resilience in view of the farming systems' setting, key functions and main challenges, i.e. shocks, stresses and opportunities (see Chapter 1).

Bottom-up approaches to policy analysis usually start with collecting the perspectives of actors who interact at the local level of the implementing environment or are related to a specific policy problem for different reasons (Sabatier 1986). First, actors closest to the farming system provide valuable insights into the effects of policies on the system through their practical experiences (Huttunen 2015). Actors within and surrounding farming systems deal with the policies in practice almost daily and, therefore, have important insights into the policies' effects and implications at the farming-system level. For example, Huttunen *et al.* (2014) analysed the perspectives of stakeholders in Finnish biogas production, revealing that cross-sectoral policies related to biogas production were incoherent and led to opposing influences in triggering the adoption of innovative biogas technologies. Furthermore, how actors experience and respond to policies is partly a retrospective and interactive process. Actors' identities, experiences, knowledge, attitudes and interactions shape their perceptions of the policies' effects (Termeer *et al.* 2007; de Lauwere *et al.* 2016). Bottom-up approaches make it possible to consider the interactions and exchange of information about policies between actors related to the system.

Whether and how actors within and surrounding farming systems experience and respond to policies also influences the policies' effects on resilience. As argued by Hemerijck (2003), successful policy implementation also entails that a policy is deemed acceptable by the affected groups to receive sufficient support and be effective. For example, Huttunen (2015) found that agri-environmental policy measures hardly received support, as farmers perceived them as incoherent with their farming practices, experiences and daily lives, resulting in poor uptake and functioning of the measures. Similarly, Bouma *et al.* (2020) found that the decision of Dutch farmers whether to adopt more nature-inclusive farming measures partly depended on the level of rules, regulations and obligations that come with these measures and whether the farmers considered them acceptable. Policy research on bureaucratic rules and procedures further confirms that when

actors experience rules, regulations and procedures as complex or burdensome, they are more likely to experience negative emotions, such as confusion, frustration and anger that reduce acceptance and support of the policy (Hattke *et al.* 2019).

In order to effectively analyse actors' experiences regarding the CAP and adjacent policies' effects on farming systems' resilience, we draw on the theoretical insights presented earlier and develop our bottom-up approach to focus on specific topics. Starting from the challenges that the actors within and surrounding the farming systems perceive as most urgent, we analyse how actors experience the effects of policies on the farming systems' resilience capacities. We do so by examining which instruments of the CAP or adjacent policies are considered most influential – supporting or hindering – in dealing with the previously identified challenges, as perceived by the actors. Subsequently, we analyse if the intended effects of the most influential CAP instruments or adjacent policies corresponded with how the actors within and surrounding the farming systems experienced the policy effects. We argue that differences between intended and experienced effects might indicate that the policies interact with one another or with contextual factors at the farming-system level. If actors suggested changes to the CAP or adjacent policies to better fit the context of their local farming system, these suggestions were analysed as well, because they potentially reveal causes behind problems and possible solutions that can go unnoticed by conducting a top-down analysis. We end our bottom-up analysis by investigating how actors involved in the farming systems access information and learn about the most influential policy instruments to consider the influence of interactive processes on how actors experience policy effects.

4.3 Research Methods and Data

To comprehend the resilience effects of complex policy mixes through the perspectives of actors within and surrounding farming systems, we conducted bottom-up analyses of the CAP and relevant adjacent policies in five European farming systems. Since the CAP affects all EU farming systems, we decided to analyse its resilience-effects for different types of farming systems across the EU. The selected farming systems are: dairy farming in Flanders (Belgium), intensive arable farming in De Veenkoloniën (the Netherlands), private family fruit

and vegetable farming in Mazovia and Podlasie (Poland), extensive sheep farming in Aragón (Spain) and large-scale arable farming in the East of England (United Kingdom). The farming systems differ considering their challenges, farming types, production of private goods, agro-ecological context and affected public goods (Chapters 6, 9, 12, 13, 16), ensuring variety between systems and allowing us to explore variations in policy influences.

Across the farming systems, we conducted ninety-eight semi-structured interviews with a broad range of farming system actors between January and April 2019.¹ In addition, we organised regional focus groups in each of the five farming system regions between August and October 2019, allowing respondents to review our interpretation of the data. Interview respondents included farmers and family members, (regional) policy practitioners, farm accountants, advisors, representatives of farmers' organisations, environmental NGOs, agro-industry and farmers' co-operatives. The interviews were designed to collect data about the enabling or constraining effects of the CAP and adjacent policies on the resilience of farming systems from the respondents' perspectives. In order to ensure comparability, each interview broadly covered the following themes: (1) farming systems' setting and main challenges (e.g. Can you describe the farming system? What challenges do you identify?) (Table 4.2); (2) policies and their effects (e.g. Which policies are most influential on the farming system? How do you experience the effects of these policies on the functioning of the farming system to deal with the identified challenges?); (3) information and learning (e.g. How do you acquire knowledge about the CAP and other policies? With whom do you have contact and communicate with about the most influential policies?).

After the interview rounds, we coded the interviews starting from a preset code book (deductive coding) that allowed inclusion of concepts and themes relating to the specific farming systems' context that emerged from the data (inductive coding). Our code book followed the interview themes and related guiding interview questions. For each theme, codes were set up by the researchers that followed from desk research (i.e. exploring research articles, policy documents, statistics)

¹ Number of respondents per farming system case: Belgium = 20 (13 farmers; 7 stakeholders); the Netherlands = 22 (7 farmers; 15 stakeholders); Poland = 20 (9 farmers; 11 stakeholders); Spain = 21 (16 farmers; 5 stakeholders); UK = 15 (8 farmers; 7 stakeholders).

Table 4.2. The main challenges of the farming systems as identified by respondents

Farming system	Main challenges
Dairy farming in Flanders (BE)	<p>Economic: Input and output price volatility; access to land</p> <p>Social: Lack of farm successors or new entrants; low societal appreciation for agriculture; low horizontal collaborations between farmers due to competition; farmers' health and well-being</p> <p>Environmental: Increasing environmental regulations and requirements</p> <p>Institutional: Policies and legislation are perceived as inconsistent, inflexible and unpredictable; increasing administrative burdens</p>
Intensive arable farming in De Veenkoloniën region (NL)	<p>Economic: Increasing input and maintenance prices; increasing competition for land and increasing land prices; costly farm succession</p> <p>Social: Lack of new entrants; low societal appreciation for agriculture</p> <p>Environmental: Soil health; concerns about pests and plant diseases; more extreme weather events (climate change); water supply, holding and drainage</p> <p>Institutional: Inconsistent and unpredictable policies and legislation</p>
Private family fruit and vegetable farming in Mazovian region and Lubelskie region (PL)	<p>Economic: Low profitability and price fluctuations; increasing input and maintenance prices; increasing (international) competition; high insurance costs</p> <p>Social: Lack of seasonal labour due to (rural) outmigration; lack of farm successors and new entrants; low horizontal and vertical collaboration due to distrust between actors</p> <p>Environmental: More extreme weather events (climate change); water supply and drainage; soil depletion; concerns about pests and plant diseases</p> <p>Institutional: Inconsistent and unpredictable policies and legislation that lack a long-term vision</p>

Table 4.2. (cont.)

Farming system	Main challenges
Extensive sheep farming in Aragón (ES)	Economic: Decreasing incomes and lowering prices; increasing (international) competition; increasing competition for land and increasing land prices Social: Lack of farm successors, new entrants and labour due to (rural) outmigration Environmental: More extreme weather events (climate change); water supply and drainage; wild fauna attacks; overgrazing due to intensification Institutional: Inconsistent and unpredictable policies and legislation
Large-scale arable farming in East of England (UK)	Economic: Price volatility; increasing (international) competition Social: Lack of (seasonal) labour; lack of farm successors and new entrants Environmental: Soil health; concerns about pests and plant diseases; more extreme weather events (climate change); water supply Institutional: Uncertainty due to Brexit, including changes in agricultural and trade policies; inconsistent and unpredictable policies and legislation; lack of access to advice and service

and data of previous SURE-Farm research. The codes were provided with a comprehensive definition, making clear the criteria for inclusion. The coding served to identify and critically analyse text fragments that contained references to policies in general, specific policy instruments and policy effects. Use of the code book and coding decisions were discussed within the research team on several occasions. The researchers interpreted and organised the respondents’ policy-related experiences and connected them by determining how the policies affect farming systems’ resilience in relation to the three capacities, i.e. robustness, adaptability and transformability. We used the specific

policy indicators for resilience-enabling policies identified by Buitenhuis *et al.* (2020) (Section 4.2.1) to guide this step. The researchers thus engaged in a process of ‘double hermeneutics’, in which they interpret the answers and statements shared by respondents that aim to make sense of their own experience (Smith *et al.* 2009). Finally, we conducted a cross-case comparison of how the interviewed actors experienced the effects of policies on the farming systems’ robustness, adaptability and transformability.

4.4 Results

We now present the key results of the comparative bottom-up analysis of the five farming systems. For our comparison, we especially focused on examining similarities and differences regarding the resilience enabling or constraining effects of the most influential instruments of the CAP and adjacent policies, as perceived by the respondents. We structured the respondents’ experiences with the policy effects according to their congruence with the capacities of robustness, adaptability and transformability.

4.4.1 Robustness

Many respondents indicated that policies are mainly designed to offer farmers income support and funding opportunities to ensure that their farming system remains productive and to maintain a certain income stability in case of shocks or fluctuations. The CAP’s direct payment scheme was especially considered by many respondents an influential policy instrument for supporting the robustness of farming systems, particularly in the Flemish, Dutch, Spanish and UK cases. The direct payments scheme, which consists of basic payments, greening payments and young farmer payments, is perceived as offering a guaranteed income for farmers, while the payments are recognised as hardly requiring any major changes to the established practices within the farming system. In the Polish case, the direct payments were regarded less influential because the fruit and vegetable farmers in this farming system own relatively little land. Therefore, the area-based payments do not make a significant contribution to their income, while profits per hectare are generally higher for fruit and vegetable farmers

compared to arable or grassland-based farming systems. Moreover, direct payments per hectare are historically lower in Central and Eastern European Member States compared to Western European Member States. Respondents across the five farming systems suggested that the direct payments were a financial compensation for increasing costs and requirements imposed on agricultural practices, allowing existing (small-scale) farms to continue their businesses. Moreover, the payments were also perceived by multiple actors within and surrounding the farming systems as payments to buffer for financial losses due to market-related shocks. A decline in direct payments could thus be regarded as a threat to farmers' ability to deal with financial shocks. However, for many farmers the received income support exceeds the increasing costs, whilst the payments are also paid in times without shocks. In this view, income support then exceeds the minimum level required for enabling robustness, possibly leading to dependence on income support that can undermine longer-term resilience.

Respondents of all five farming system cases, however, also experienced different negative effects of the CAP's income support measures on the robustness of their farming system. For example, the post-2013 CAP reform introduced decoupled direct payments linked to the area farmed and convergence mechanisms that adjusted these payments towards a uniform rate per hectare within each Member State or region, instead of being calculated on the basis of historic entitlements. Whereas the introduction of these direct payments was intended to decouple payments from the quantity produced, actors in the Spanish case indicated that the decoupled payments made it difficult to maintain the extensive sheep farming system. In addition, Spain opted for applying the direct payments and its internal convergence at the level of regions based on land use, creating large regional differences in the value of the entitlements to the detriment of extensive grazing systems. Spanish extensive sheep farmers have limited access to land that is eligible for CAP payments, making it hard for them to maintain a profitable farming business. As one Spanish farmer said: 'Of 800 hectares of rented land, only 300 hectares are eligible for CAP payments . . . So, people [farmers] who usually pasture in the mountains, do not have eligible pastures to receive CAP payments. So, they have to search for land in other areas'.

In addition, the CAP's decoupled direct payments seriously affect farmers' access to land in almost all farming systems. For instance, Spanish respondents mentioned that they experienced high competition for land in their farming system as land eligible for CAP payments was scarce. The direct payments therefore contributed to increasing land prices, specifically of CAP-eligible land. The Spanish farmers experienced this as a constraint to their long-term planning, as they were uncertain if they were still able to obtain or lease CAP-eligible land to remain profitable for subsequent years. Similarly, Dutch respondents identified increasing land prices as a major challenge to their farming system. They felt that the decoupled direct payments indirectly increased the already relatively high prices of agricultural land in the Netherlands, and the payments did not outweigh the land price increase. The increasing land prices affect the functioning of the Dutch farming system by constraining farmers to upscale their businesses and, in the long run, to realise farm succession. Likewise, Polish respondents argued that farmers' access to land was constrained as they experienced that the direct payments incentivised non-active farmers to continue to own agricultural land just to receive payments. Whereas the CAP's decoupled direct payments were felt to have less impact on land prices than the tax regimes in the UK farming system, UK respondents felt that the payments constrained access to land. However, the respondents largely spoke in terms of turnover of land and people, actually showing the decoupled direct payments' contribution to protecting the status quo. Low availability and high competition for land were also experienced by several Flemish respondents. However, they perceived Flemish land tenure legislations to have a stronger impact on access to land than direct payments.

Lastly, Dutch and Polish respondents indicated that more extreme weather events caused by climate change were a prominent challenge for their farming systems. The availability of insurance schemes that cover weather-related risks were, therefore, mainly discussed in the Dutch and Polish cases. Different weather insurance schemes are available for Dutch and Polish farmers to protect against financial losses incurred by adverse weather events. In the Netherlands, private hail insurance is marketed, and public-private weather insurances are offered whereby the Dutch government provides a subsidy rate on the insurance premium, using payments under the RDP. In Poland, a nationally designed and funded insurance scheme is preferred by the

government and Polish farmers are obligated to insure at least 50 per cent of their agricultural land to receive direct payments (Meuwissen *et al.* 2018; Popp & Nowack 2020). Whereas the insurance systems differ between the Netherlands and Poland, the insurances offered were largely not regarded as appropriate risk management tools as the effectiveness of the insurance schemes was called into question, especially by farmers. Taking out weather insurance was considered an individual choice as part of a farmer's strategy to deal with weather-induced risks. The general experience of the interviewed Dutch and Polish farmers was that the benefits of the insurance did not outweigh its costs, resulting in the decision not to subscribe to these insurances. In addition, Polish farmers generally seemed to be reluctant to enter insurance contracts for their crops (Wąs & Kobus 2018). Our interviews showed that unfavourable attitudes of the Polish farmers towards insurances were based on past experiences and contributed to the experience of weather insurance as an ineffective risk management tool. As stated by Polish farmers:

We do not insure for another time because insurance costs and insurers are dishonest. This is one more reason. I do not insure. I have not insured for many years.

We've insured for 15 years, maybe more. We have not been insuring for some time, there once was hail and we did not receive compensation.

Insurances can be regarded as relevant for contributing to farming systems' robustness against short-term shocks; however, it seems that creating an insurance-accepting environment requires extra effort (Popp & Nowack 2020). Moreover, government-supported insurance schemes are only one way of risk management. Chapter 2 discusses the separate processes of risk management in more detail, elaborating on the larger contribution of risk management towards farming systems' resilience.

4.4.2 Adaptability

The national implementations of the CAP's Pillar II in the form of RDPs and associated agri-environmental schemes were considered by many actors across the five case studies to have the potential to enable the adaptability of their respective farming system. Respondents referred to the possibility to apply for RDP project funding for

innovations in production methods, collaborations or developments that increase the sustainability of the agricultural sector and rural areas. The agri-environmental schemes are seen to encourage a mid-term focus among farmers and other actors. Nevertheless, we found that the same respondents, especially in the Flemish, Dutch, Polish and UK cases, were also very critical of their RDP and agri-environmental programmes. A common reason provided by the respondents (both farmers and non-farmers) was that the RDPs' application procedures were perceived as complex and bureaucratic and participation often required significant investments of capital and time. In addition, actors' past experiences with RDP funding applications, such as refusals, payout delays and the lack of flexibility to adjust the measures to fit local contexts, form barriers to apply for RDP funding. For example, in the Flemish case, respondents perceived the RDP to have the capacity to support adaptability within the dairy farming system. However, the perceived administrative complexity related to the application and allocation discouraged actors to apply. Similarly, the Polish RDP were regarded as an important source of funding, but the application and allocation were perceived as bureaucratic, and the required multiyear business plan was regarded as hindering flexibility to deal with changing circumstances within the fruit and vegetable farming system. For similar reasons, respondents in the British and Dutch case studies had reservations about applying for RDP funding and questioned the functioning of the RDP. As one Dutch respondent said: 'In principle, the measures [RDP programmes] 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 two years before he or she can get the money'.

So, the adaptability-enabling potential of RDPs is constrained by bureaucratic procedures, which were often perceived as unnecessary. Whereas bureaucracy was not regarded as negative if it contributes to the functionality of the policy, the effective delivery of policies, such as the RDPs, can be obstructed if actors perceive the rules, regulations or administrative procedures as overly burdensome and redundant.

The CAP's direct payments were considered to have *constraining* effects on the adaptability of farming systems. In almost all farming system cases, except for the Spanish farming system, respondents witnessed that offering income support also has the effect of stifling competition and change. Especially in the Dutch and English cases,

respondents argued that the guaranteed source of income provided through the CAP's direct payments allowed otherwise less profitable or dysfunctional farming business models to continue. The direct payments were therefore seen as discouraging adaptation of inferior business models or the search for innovative or alternative business opportunities. These findings resonate with the dominant orientation on competition in the Dutch and English cases. Similarly, whereas direct payments were regarded less important in the Polish case, respondents did indicate that the direct payments hindered adaptability because the payments constrained competition. In the Flemish case, several respondents had similar opinions about how the direct payments might constrain adaptability. However, some respondents argued that the direct payments provided extra financial means for investing in adapting farming practices.

Respondents in the Dutch, Spanish and English cases recommended changes in the system of direct payments to reduce their adaptability-constraining effects. For instance, many respondents from the Dutch and English farming systems suggested that they would favour a shift in the allocation of direct payments from area-based to performance-based. This would imply that farmers and landowners would receive payments for maintaining and providing public goods and services or for adopting farming practices that address environmental issues. Interestingly, such a shift in payments has been proposed to become part of the British agricultural policy after Brexit. The Eco-schemes proposed by the European Commission for the CAP post-2020 could play a similar role. Several Spanish respondents perceived advantages in coupling the direct payments to livestock instead of land, with conditionalities based on demographic, quality or production criteria. Such coupled payments would support sheep farmers to continue their extensive farming practices and offer incentives for providing ecosystem services.

Finally, Chapter 2 already examined the larger role that learning plays across the resilience capacities. Nevertheless, we researched the specific aspect of social learning within the farming systems and especially whether policies support this type of social learning. We found that actors across all farming systems agreed that actively engaging in social learning processes was essential to learn about policies and their implications, but also about, e.g., new innovative farming techniques, agri-environmental practices or business strategies. The respondents

commonly mentioned several ways, both public and privately supported, for attaining and exchanging knowledge, for instance, attending information and training sessions, being an active member of a farmers' association or farming cooperative, participating in networking events, and making use of advisory services. Whereas actors across farming systems generally believed that access to information or advisory services was widely available, several respondents in the Flemish, Polish and English cases favoured more comprehensive and independent advisory services with knowledge of the farming system's context.

However, most social learning seems to take place within the respondents' professional network. For instance, farmers mentioned conversations with trusted peers, such as (financial) advisers, suppliers or employees of farmers' associations to gain and exchange information. Also non-farming actors (e.g. policymakers, advisors, suppliers) acknowledged the importance of their professional network. Governmental actors said they interacted internally or across governmental levels, while advisers and suppliers brought up their access to research departments. Less commonly mentioned by farmers were interactions with civil servants, scientists or other farmers. Interestingly, the non-farming actors regularly mentioned that they learn about policy effects in practice, for instance, by participating in the previously mentioned social learning events or as 'sparring partner' to farmers. These findings suggest that interactions to share information and experiences about policies occur largely in networks within or closely related to the farming systems. These closed networks should be regarded as a context condition for policy interventions which might complicate the introduction of new actors, knowledge or perspectives from outside the farming system, potentially constraining in-depth learning within the farming system.

4.4.3 Transformability

A recurrent experience among most of the respondents in all farming systems was that the CAP and other policies hardly allowed them to focus on the long term. A prominent reason provided by actors within and surrounding the Flemish, Dutch, Polish and UK farming systems was that policies were experienced as changing too often, thereby constraining a certain stability and predictability that was seen as

necessary to engage in more long-term planning and investments. As stated by a UK farmer:

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.

Several respondents indicated that the inability to develop a longer-term focus within the farming system had negative consequences. For instance, in the Flemish case, actors indicated that the unpredictable policy environment discouraged potential new entrants to start a farming business. Dutch farmers explained, e.g., that policies that were experienced as constantly changing limited their ability to deal with more long-term challenges, such as soil depletion. While transformability can be enabled by small but immediate in-depth changes, many farming system actors seemed to experience these changes as constraining a long-term focus.

The CAP was perceived as a policy that predominately supports robustness. Therefore, policy initiatives to dismantle incentives to maintain the status quo were hardly identified. However, respondents in all five cases perceived several policy instruments to have detrimental effects on their farming systems' status quo. An often-mentioned example – mainly by farmers – were the changing regulations relating to plant protection products. Although reducing the use of plant protection products was considered as a necessary move away from the status quo by some (e.g. environmental NGOs), the arable and fruit and vegetable farmers in our case studies experienced these policy changes largely as hindering their ability to deal with pests and plant diseases. Plant protection products were perceived as being withdrawn too quickly without providing alternatives, which raised concerns whether farmers could maintain and increase the quality and quantity of their crops. Similarly, legislation on manure and fertilisers are introduced to reduce nitrate pollution and improve surface and ground water quality, forcing changes to current farming practices to improve the environment in the long term. However, several Dutch respondents argued that legislation on fertiliser use was constraining farmers' ability to deal with long-term loss of soil quality, while intensive farming practices continue to put pressure on the region's soils. Furthermore,

while dairy farmers in the Flemish case perceived the legislation as necessary for improving environmental quality and reducing misconduct, they felt forced to implement income-reducing measures (e.g. fertiliser-free buffer strips) or invest in new infrastructure (e.g. manure storage facilities). These findings suggest that the manure and fertiliser regulations often conflict with the farmers' daily practices and their idea of 'good farming'. While the regulations incentivised limited change, they were not successful in winning farmers' support for broader change. Overall, changes to the status quo were hardly experienced as enabling transformability. Farming system actors rather perceived them as demanding, constraining or threatening their regular farming activities and business profitability. However, it is precisely these associations with change – being demanding and challenging regular routines – that would indicate that change was transformative.

4.5 Reflections and Conclusion

Whilst the interest in the potential of public policies for improving the resilience of farming and food systems is growing among academics and policymakers, systematic understanding of how public policies affect the resilience of these systems is still limited. This chapter therefore addressed the question of whether and how farming system actors in five case studies experience the effects of the CAP and relevant adjacent policies on the resilience of their respective farming systems.

First, we found that actors generally perceived the CAP and adjacent policies as affecting the resilience capacities of their respective farming system in uneven ways. Broadly speaking, the actors experienced these policies as mostly supportive for the robustness of their farming systems. They expected the CAP's area-based direct payments to provide income support as a financial buffer against shocks. However, the actors also felt that the CAP did not effectively support the adaptability of their farming systems. Many measures in the RDPs, while recognised as aiming to enable adaptability, were seen as ineffective or even constraining due to bureaucracy. The transformability of farming systems was seen as constrained by the CAP since a long-term focus was not supported. At the same time, interventions that require change (e.g. environmental regulations) were perceived as threatening resilience. These results confirm the previous top-down research that found that the CAP's support for the three resilience capacities is largely

skewed towards robustness (Feindt *et al.* 2018). To enable the resilience of Europe's farming systems in a more comprehensive way, the CAP and its national implementations would need to rebalance the budget and ensure that the overall policy design does not discourage or hinder adaptability and transformability. In contrast, the EC's proposals for the CAP post-2020 continue their focus on income transfer, which enhances robustness for unprofitable farming systems but discourages adaptation or transformation.

Second, our comparison revealed that the perceived resilience effects of public policies depend systematically on specific farming system characteristics. The findings make clear that the CAP's support for robustness was mostly attributed to the area-based direct payments which were seen as providing buffer resources. Consequently, robustness is strongly supported for land-intensive farming systems (arable farming and grasslands), but not for those who require relatively little land (e.g. poultry production, horticulture or perennials). Moreover, the robustness-enhancing effect is mediated through access to land and land ownership, as the Spanish case with its declining extensive sheep grazing system demonstrates. This case also shows that decoupled direct payments do not support the continuation of extensive grazing systems where cheaper methods are available to meet the eligibility requirements. In a broader perspective, the long-term resilience of arable farming and horticultural systems would be better served if the CAP and adjacent policies enabled adaptation to climate change and other environmental challenges (Table 4.2). Whereas the RDPs could serve this purpose, EU legislators and Member States need to identify and reduce bottlenecks and barriers within the RDPs that stand in the way of effective implementation. Altogether, to determine the effectiveness as well as the desirability of certain policy instruments, it is essential to consider how the policy mechanisms and their effects are influenced by each farming system and its enabling or constraining environment. Enabling the EU's farming systems to become more resilient would therefore require a mix of instruments that can be tailored to fit their divergent resilience needs. In this respect, the Member States should use the proposed national strategic plans to implement the CAP with flexible and context-tailored policy designs that strengthen all resilience capacities of their farming systems. For instance, Member States could design their Eco-schemes as a performance-based payment scheme that incentivises and remunerates

farmers for implementing (sets of) agri-environmental or climate measures. If national governments define clear guidelines that reflect ambitious national and EU objectives regarding, e.g., climate change, natural resource quality or protection of biodiversity, suitable Eco-scheme measures can be collaboratively identified by regional public and private actors that fit both with the regional context and the overarching objectives and enhance farming systems' long-term resilience.

Finally, the qualitative nature of our bottom-up approach requires that we critically reflect on how actors seem to understand resilience and appropriate the concept. For instance, we found that farming system actors seemed to prefer a robustness-oriented approach for enabling resilience, which partly resonates with established narratives that often justify the CAP's income support and the special policy treatment for agriculture as an exceptional sector (Daugbjerg & Feindt 2017). In contrast, policy instruments that steer towards adjustments or even change are often met with scepticism about their implementation or resilience-enabling effects (e.g. the RDPs or environmental regulations). Such bias towards robustness possibly exposes actors' limited engagement with the idea of adaptability and transformability as being integral to resilience and might very well explain which policy effects are perceived as resilience-enabling and which not. However, further research would be needed to analyse how this bias might vary across different farming methods within the systems (e.g. conventional versus organic farming, agroforestry). Actors' reluctance to embrace adaptation or transformation might further be understood by reflecting on the presence of lock-in mechanisms within farming systems that reinforce established practices. Moreover, we found that actors within our farming system cases had relatively closed networks, mostly consisting of other farming system actors, which might partly explain the relatively similar policy experiences and views on the resilience concept. Clearly, whereas distinguishing between robustness, adaptability and transformability allowed us to systematically analyse actors' experiences with policy effects, it should not be taken for granted that actors understand resilience in a similar way. Actors might only partially adopt or mix elements of the resilience capacities to understand the resilience of farming systems, or they might assume that resilience capacities are generally closely bound together (Chapter 2). Hence, we see the need for further research that

explores the resilience-related perspectives owned by actors. Such a follow-up research could entail a frame analysis that focuses on identifying and studying the processes in and through which specific actors perceive and give meaning to resilience and which corresponding policies are preferred for enabling resilience and for what reasons.

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