



SURE
SUSTAINABLE
RESILIENT
EU FARMING
SYSTEMS **Farm**

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1 Introduction

In its Communication on the future of the Common Agricultural Policy (CAP) after 2020, the European Commission (2017) declared their ambition to foster a ‘resilient agricultural sector’. Work package 4 of the SURE-Farm project has the double aim of assessing how the *current* CAP and adjacent policies perform in enabling European farming systems’ resilience – distinguishing between the resilience capacities of robustness, adaptability and transformability (Meuwissen et al., 2019) – and of formulating recommendations for improved policy outcomes. Previous tasks in this work package involved an expert assessment of the CAP’s enabling and constraining effects (Feindt et al., 2019), as well as a bottom-up analysis of how farming system actors *experience* the influence of multilevel policy configurations on their resilience.

The study presented in this report builds on these previous analyses by identifying various promising options for the CAP, including national implementations, to maximise its contribution to greater resilience of EU farming systems. These options serve as input for ongoing political debates on the reform of the CAP post-2020, the development of the proposed National Strategic Plans that spell out national priorities and implementation choices, as well as the European Commission’s “From Farm to Fork Strategy”, which aims to foster a circular food system, as part of the European Green Deal. For the UK case study (see below), we reflect on promising courses of action for post-Brexit agricultural policy.

In order to develop viable policy pathways, the study draws on various co-creation methods, through which SURE-Farm researchers engaged with a broad range of stakeholders. The core of the research consists of six national stakeholder workshops – in the Netherlands, Belgium, the UK, Spain, Poland, and Italy – as well as a final workshop with EU stakeholders in Brussels. These workshops were complemented by an online deliberation exercise conducted on SURE-Farm’s cocreation platforms and a concise review of promising resilience-enabling policies in the six countries.

The report proceeds as follows: after a more detailed discussion of the methods used in this study, section 3 presents the main findings of the four research activities. The report ends by recommending various policy directions that emerged from the analysis as offering the most potential for improving the CAP’s impact on the robustness, adaptability, and/or transformability of Europe’s farming systems.

2 Methods

To complement the synthesis of resilience-enabling policy attributes presented in this work package's previous reports (Feindt et al., 2019) with concrete examples of good policy practices, concise policy reviews were performed by the six case study partner teams (Table 1). These reviews served as a starting point for the national workshops, and as a source of inspiration for broader reflections on the future of the CAP and national implementation.

The reviews were followed by six national workshops with policymakers and stakeholders, see Table 1. Workshops were organised along three rounds. In the first round, participants were asked for ideal-type agricultural policies to foster the three resilience capacities, without taking into account the existing CAP framework. The central question in this round was: *What policies and associated courses of action are needed to enhance robustness/ adaptability/ transformability?* All insights obtained in the open brainstorming were recorded in a visible protocol, e.g. a flipchart or PowerPoint with beamer. In the second round, insights from the first round were discussed in relation to the existing policy framework, addressing the question: *Which specific policies/ changes are needed to enhance robustness/ adaptability/ transformability? Who needs to do what and when to ensure that these become reality?* In the third round, two scenarios that were developed in a previous SURE-Farm deliverable (Mathijs et al. 2017) were introduced: SSP3 (Regional rivalry) and SSP5 (Fossil-fuelled development). These scenarios were selected by the research team because they represent two diverse but realistic future visions for European agriculture in the medium to long-term. Box 1 summarises both scenarios. Participants were asked whether *the policy recommendations would still be sufficient to maintain a desired level and mix of robustness, adaptability and transformability* for both scenarios. The workshops ended with a final round of suggestions and feedback.

Importantly, the workshops took the SURE-Farm case study farming systems as a starting point, but also reflected on broader implications for similar farming systems within the respective countries. In a similar vein, whereas the primary focus was on the CAP and national policy implementation, adjacent policies were considered where these proved to have direct relevance for the CAP's functioning or impacts.

The questions asked on the SURE-Farm co-creation platform followed the same set-up as the national workshops.

Table 1 Overview of cases and national workshops

Country	SURE-Farm case study	Location of workshop	Number of participants	Type of participants/ organisations
<i>Netherlands</i>	Intensive arable farming in the Veenkoloniën region	Ministry of Agriculture, Nature and Food Quality, The Hague	7	Policymaker Ministry of Agriculture (4) Farmers representative (1) Former board member AVEBE cooperative (1) Researcher (1)
<i>Belgium</i>	Intensifying dairy farming in Flanders	KU Leuven	17	Policymaker Flemish government (4) Farmer (2) NGO food (2) Agricultural advisor (2) Representative processing industry (1) Processor (1) Retailer (1) Bank (1) Academic (1) Farmers representative (1)
<i>Spain</i>	Extensive beef and sheep farming in the Guadarrama mountain range and Aragón	Universidad Politecnica de Madrid	9	Representative agricultural cooperative (2) Farmer representative (1) Policymaker national (2) Insurance company (1) Environmental NGO (1) Researcher (2)
<i>United Kingdom</i>	Large-scale corporate arable farming in East England	Holiday Inn Hotel, Cambridge	5	Farm manager (1) Farmers representative (1) Policymaker Defra (1) Academic (2)
<i>Poland</i>	Private family fruit and vegetable farming in the Mazovian region	Institute of Rural and Agricultural Development, Warsaw	11	Policymaker national government (2) Policymaker local government (1) Agricultural advisor (2) Farmer (2) Farmers representative (1) Academic (3)
<i>Italy</i>	Small-scale farming of perennial crops (hazelnuts) in Central Italy	Italian Council for Agricultural Research and Analysis (CREA), Rome	8	Policymaker region (2) Farmer representative (3) Producer organisations representative (1) Researcher (2)

Box 1: Scenarios: Regional rivalry and fossil fuelled-development***SSP3 Regional rivalry***

Environmental awareness is low and international trade is strongly constrained by protective border measures. Consumption patterns only marginally changed in terms of product composition, but more attention is given to convenience and locally produced food. As a result of relatively high meat consumption and reduced import of soy and other feedstuffs, own feed production as well as the use of by-products and waste streams for animal nutrition has increased. Food prices are high, as productivity grows slowly with limited adoption of biotechnology based innovations. Prices are relatively stable due to government intervention. Temporary food surpluses are used for feed and other non-food purposes. Due to the reduction of trade, the concentration of livestock production and the accompanying air and water pollution in North-Western Europe has decreased, while livestock production in Central and Eastern Europe has increased. Also dairy production has decreased due to export limits. Land is scarce because of the high demand for feed production and the relatively low level of technology development. Labour is also scarce as migration is restricted in line with the protective trade policy. SMEs play a relatively large role in the food industry as many multinationals are non-European. Vertical coordination between food industry and farms is limited due to the heavy market intervention policies.

SSP5 Fossil-fuelled development

Environmental awareness focuses mainly on local issues while ignoring global issues. International trade is very open, resulting in regional specialisation in production. Diets are rich in meat which is both imported and produced in the EU using imported feedstuffs. The pressure to reduce food waste and losses is low. Food prices are low, mainly because of high productivity gains, but highly volatile. The concentration of livestock production and the accompanying air and water pollution in North-Western Europe remains, although reliance on imported feedstuffs eventually decreases due to the full inclusion of the land use sector in international climate change agreements. Land and labour are relatively abundant due to the high levels of productivity and the openness of trade. Technological development is still supported by fossil fuels, so that there is a high emphasis on resource efficiency through precision agriculture. Issues related to monocultures, such as zoonoses and biodiversity loss remain prominent problems. The concentration in the agri-food industry increases even more, such that food industry is dominated by multinationals. Vertical coordination between farming and food industry remains limited, as global spot market transactions prevail. Consumer sovereignty rules, as the consumer prefers a wide range of choices from products from all over the world.

Source: based on Mathijs et al. 2017

The final workshop in Brussels was organised in two rounds of two hours and with seven participants each. It was led by two SURE-Farm work package leaders, Prof. Peter H. Feindt and Prof. Erik Mathijs. Participants included staff from the European Commission and the European Parliament, farm sector and young farmers' organisations, scientific advisory bodies, and environmentally oriented NGOs. Participants had backgrounds in Eastern, Southern and North-Western Europe. The workshop consisted of two parts. In the first part, the main findings of the work package were presented and discussed. In the second part, the outcomes and recommendations from the national workshops were presented and discussed with participants, both for validation and to identify additional recommendations.

When performing the four research steps discussed above, we encountered several limitations. First, the amount of time available for each of the national workshops proved too limited to go through each of the three rounds in-depth. As a consequence, rounds 1 and 2 were merged in some of the workshops, whereas in others the scenarios were discussed only shortly or not at all. Second, many participants, especially those not working in policymaking, found it difficult to distinguish the CAP from adjacent policies. As explained above, we therefore included reflections on the latter when these were seen as relevant. Third, the scenarios proved much more difficult to understand for the participants than was anticipated. As a result, many of the workshops spent more time on discussing the assumptions of these scenarios than on a discussion of policy implications following from the scenarios. Fourth, only two participants made active contributions through the online co-creation platform, limiting the input through this communication channel. This relatively low participation was likely due to the comparatively high complexity of the requested activities in combination with the general difficulty of maintaining the active engagement of stakeholders more than a year after the co-creation platform had been launched. Lastly, the recommendations distilled and presented in this work task are naturally biased by our selection of countries and farming systems. Importantly, our goal was not to be exhaustive or to reach consensus on desirable policy pathways, but to present a number of salient suggestions emerging from discussions with policymakers and stakeholders.

3 Findings

In this section, we present the findings from the six case study workshops, the co-creation platform and the literature reviews. We first summarise the policy recommendations and the responses to the two scenarios from the case study workshops.

3.1 Case study workshops

3.1.1 Main recommendations

Much of the discussion in the **Dutch** workshop centred around the question of how the CAP and adjacent policies could shift from a dominant robustness-enabling focus towards an adaptability- and a transformability-enabling orientation. There was a high level of agreement among the participants that the CAP's hectare-based payments should be transformed into a system of payments for public goods and innovation, albeit in an incremental manner, so that farmers would have time to adjust their businesses. These payments would have to be outcome- rather than means-based, so as to allow for flexibility and tailor-made interventions and innovations. In addition, participants believed that existing pillar II schemes do not yet live up to expectations due to the high level of red tape and low funding chances involved. A central concern was the absence of a clear long-term vision on the future of agriculture, both at EU and national levels, resulting in a lack of consistency and predictability. Such a vision would be key to allow farmers to anticipate legislative changes and foster innovation. A policy recommendation that received mixed support was maintaining, and possibly expanding, safety nets and risk management tools to help farmers deal with sudden shocks. There was some disagreement between the participants whether the government should be responsible for such measures, or whether this could be organised by the agricultural sector itself. Two final recommendations that were only briefly discussed included fostering horizontal and vertical collaboration and the creation of a land bank to foster the exchange of land and allow for more sustainable land management practices. The latter was perceived to be a fairly radical proposal and sparked considerable controversy amongst workshop participants.

In the **Belgian** workshop, participants agreed on various ways of improving robustness. First, they argued that administrative burdens following from a large number of audits should be reduced. An overarching and long-term set of requirements could help to overcome the overlaps and inconsistencies between auditing agencies. Second, the limited availability of land was considered a major challenge, both to existing farmers and potential new entrants. The participants argued in favour of dismantling incentives that drive up land prices, such as the CAP's hectare-based payments system. Belgian tenancy law was perceived as too strict; many landowners are unwilling to offer long-term leases due to the strict criteria on contract termination. Third, participants criticised the leakage of agricultural subsidies to non-farming landowners. They argued that, instead, subsidies should be limited to active farmers, and that young farmers should be favoured. Regarding adaptability, the workshop participants agreed that the current policy constellation proved largely unresponsive. The Flemish Agricultural Investment Fund, which implements the

CAP pillar II funds, was perceived to be appropriate in terms of the *types* of investments that are supported, but farmers perceived a high administrative burden when applying for these schemes. In addition, the minimum investment of €30,000 and long waiting time made this support unattractive. Participants suggested a new system of small budgets for small innovations, with lower administrative demands. Another discussion centred around the Flemish spatial planning guidelines. According to some experts, the environmental permit system is exclusively based on the conventional use of agricultural land, and as such limits the introduction of innovative new business models, such as direct sales and entertainment activities. Furthermore, participants called for scaling up support for knowledge exchange networks as well as agricultural education, which could foster both adaptive and transformative practices. An overarching reflection was that farmers require a consistent EU policy, that would both clarify long-term objectives but also allow for adaption to new developments. As the experts saw much potential in the use of data in agriculture (e.g. to monitor policies or to provide advise), they thought an EU framework on how to handle and stimulate the use of such data would be helpful.

The **Spanish** workshop resulted in the identification of six desired courses of action, which were believed to foster robustness, adaptability, and, to a much lower extent, transformability. First, participants argued that the current system of hectare-based payments does not support the robustness of extensive farmers who do not own the land they manage. They therefore argued in favour of an additional system of coupled support, which may be made conditional on certain demographic, production, or quality criteria. The eco-schemes – environmentally-oriented payments in Pillar I that are expected to become part of the CAP post-2020 – are believed to offer potential for rewarding extensive farmers for the ecosystem services they provide. Additionally, internal convergence of hectare payments, delinking them from historical entitlements, was believed to improve opportunities for new entrants, who would then receive similar levels of support. Second, there is a need for a clear(er) definition and recognition of extensive farming practices, which were believed to be of increasing importance to deal with Spain’s environmental challenges. One way forward would be to develop labels that recognise product quality and/or the quality of public goods provided, or to promote regional chains through which products can be marketed. Third, participants emphasised the need to strengthen cooperation between farmers, e.g. in the form of producer organisations or other types of associations, as well as with broader stakeholders, such as research centres, governments, and the private sector. Fourth, the availability of land, i.e. pastures, was identified as a key constraint. Limiting income support to active farmers, rather than non-farming land owners, using satellite data and other technological innovations to monitor the proper use of pastures, and increased access to state-owned pastures were mentioned as possible solutions in this respect. Fifth, there was a clear consensus on the challenges for new entrants – in particular with a non-farming background – to farming.

Participants proposed to establish better training programs on farming practices and developing viable business plans. Furthermore, some participants argued that the current young farmers' scheme should be opened up to make part-time farmers eligible as well. Sixth, participants called for scaling up rural development investments, e.g. to improve internet access in rural areas, provide fiscal incentives for businesses and cooperatives creating jobs in rural areas, and improving the availability of social services, education, and transport. Lastly, some of the participants believed that new international trade agreements could increase the demand for lamb meat, e.g. in Arab countries.

The **UK** workshop took a slightly different approach, in that it focused on what an agricultural policy post-Brexit could look like. Impacts and policy recommendations were discussed along three Brexit scenarios: i) no deal, ii) extreme free trade, and iii) business as usual. The participants had a low confidence in the ability of all of these scenarios to deliver resilient farming systems in terms of fostering robustness, adaptability and transformability, most notably because all scenarios were expected to result in lower subsidies. The no deal and free trade scenarios would in addition lead to problems with trading tariffs with the EU and competition from cheaper imports. To deal with these challenges, participants believed that under all three scenarios domestic support would need to be increased to strengthen farming system resilience, whether that was to help farmers remain as they are or to adapt or more radically transform their farm enterprise. Under a no deal scenario, small farms that perform relatively well in terms of ecosystem services would particularly require (targeted) support. Apart from financial support, stakeholders agreed that there was a need to improve independent advisory services and education, particularly also to new entrants. These could partly draw on past successes of stewardship, as participants felt that various good practices, such as the Catchment Sensitive Farming scheme, had been forgotten in current policy thinking. Furthermore, across all scenarios farmers would have to be protected against lower standards in other parts of the world to make them competitive. More specific recommendations included improving rural broadband access, reverting plant protection product assessments to being risk-based and investing in alternatives, creating seasonal labour schemes, and more positive education and marketing about the environmental cost of food and current farmer stewardship of environmental resources towards broader publics.

Much of the discussion in the **Polish** workshop focused on possible improvements at the *national* level. Stakeholders argued that the most important action to improve robustness would be to reform the national insurance system, as the current system was seen as unattractive to both insurance companies and farmers. This is because insurance companies, despite receiving state subsidies, refuse to insure the riskiest areas (exposed to drought, floods and hailstones), while farmers are not interested in insuring areas with a negligible rate of incidents. The latter has been

reinforced by bad experiences with damage claims, which were believed to often be delayed, refused or underestimated by insurance companies. For adaptation, participants saw most merit in strengthening horizontal and vertical collaboration. Current opportunities for cooperation offered under the CAP are insufficiently used due to low levels of trust. This could be overcome through strengthened advisory and brokering services, which would partly depend on a salary increase of public advisors. To allow for transformability, participants believed more should be done to promote the demand for healthy food amongst consumers, as well as to get a better idea of (the development of) consumer preferences. In addition to these resilience capacity-specific recommendations, various overarching suggestions were put forward. First, participants indicated the need for a longer-term agricultural policy that would span at least two programming periods, at the same time allowing for adaptability vis-à-vis new trends and developments, such as artificial intelligence. Second, agricultural producers should be encouraged to engage in lifelong learning to acquire new skills that would allow them to adjust and innovate. Third, scaling up investments in the Agricultural Knowledge and Innovation System (AKIS) could boost innovative solutions to issues of natural resource use, inter alia. Lastly, participants argued that extending the results-based payment schemes would help to better align farming practices with societal goals.

The **Italian** workshop focused primarily on the functioning of the Common Market Organisation (CMO) and Rural Development Program (RDP) measures, which were considered to have the largest (potential) impacts on the hazelnut farming systems' resilience. The CMO was considered more effective for promoting robustness than the RDP measures; the region has well organised producer organisations that are capable of mobilising resources to foster collective action. At the same time, participants shared the observation that CMO measures might not be familiar to producers who currently do not participate in this arrangement, and suggested an increase of coaching and advisory services. Another suggestion was to base the co-financing percentages of the measures in the Operational Programs of the producer organisations on the public value of the investments or activities financed, as well as to favour collective over individual actions. Although the RDP has a larger budget and could play an important role in enabling the system's adaptability, the administrative process to apply for funding was considered too cumbersome. Participants recommended a better promotion of the European Innovation Partnership (EIP) operational groups and the LEADER Local Action Groups to foster public-private partnerships that could contribute to reaching territory-specific objectives.

A further synthesis of the findings is presented in section 4.

3.1.2 Implications of the two scenarios

In the second part of the workshop, participants were asked to assess how well their policy recommendations would fare under two different scenarios.

The expected impact of SSP3 (Regional Rivalry) strongly differed depending on the degree to which a farming system is export-oriented. On the one extreme, for Spanish extensive sheep farming the impacts were believed to be limited, and no additional or different policy recommendations were suggested. At the other end of the spectrum, the Italian hazelnut farming system and the associated Ferrero value chain would suffer considerable blows from trade limitations. When these restrictions would last, it would be necessary to create new outlets and markets in order to enable the farming system to survive. Similarly, in Flanders, this scenario would likely result in meat and dairy exports. When resulting in a decline of the number and/or acreage of farms, this could have favourable effects on local environmental problems, such as nitrate emissions, as well as the price of land, allowing for improved access. In the Italian workshop, the assumed lower governmental environmental awareness induced participants to expect that local aversion against the farming system might arise. They therefore suggested to scale up investments in RDP programmes under this scenario. The participants in the Polish workshop argued that this scenario would increase the desirability of strong robustness, and of diversifying production to meet the needs of Polish consumers. Transformability was considered less desirable, although a radical diversification may eventually add up to an accumulative transformation. The discussion in the Dutch workshop centred primarily around the question of what *type* of regional rivalry would occur: between regional blocks at a global level, of which the EU would be one, or also *within* the EU. The latter might in an extreme case result in the abolition of the CAP and a return to national agricultural policies. The Dutch participants also argued that policy implications depended on whether there would be a sudden protectionist move, as happened with the Russian boycott of fruits and vegetables, or a more gradual process of increasing protectionism. They believed governmental support through safety nets to be more legitimate in case of the former.

SSP5 (fossil-fuelled development) would not challenge the economic functioning of the Italian farming system and chain, and was believed to be profitable. CMO measures along the value chain could be strengthened to increase competitiveness. The assumed local environmental awareness was considered favourable, but would have to be complemented with EIP investments in new techniques and environmental actions as part of the producer organisations' operational programs. For the Spanish and Polish farming systems, this scenario was considered more challenging. The Spanish participants argued that increased competition and resulting lower margins would require public support to maintain the delivery of public goods as well as land and

natural resources management. The Polish stakeholders recommended increasing support for niche innovations to make Polish producers more competitive. They believed greening measures and renewable energy targets would lose their relevance in this scenario.

3.1.3 Additional lessons and insights

Apart from formulating the policy recommendations discussed above, the national workshops proved a good occasion to reflect on the overall conceptualisation and empirical insights from the SURE-Farm project, and work package 4 specifically. This sub-section summarises additional lessons and insights that emerged in the discussions:

- There is a perceived tension between the ambition to raise sustainability standards for EU agriculture and closing bilateral trade deals that allow for imports of agricultural products from other countries and regions, which often do not comply to the same standards. Whereas standards, especially if consistent and predictable, can allow for adaptability or even transformability, the combination of both increasing standards and pursuing free trade of agricultural products might be counterproductive and even undermine robustness. (Dutch workshop)
- Some respondents stressed that resilience starts with a viable economic model, both for individual farms and broader cooperatives or sectors. Efficiency and competitiveness, although having an increasingly negative connotation in the Dutch context, should therefore continue to be key priorities. This was seen as particularly true for robustness, but also a likely prerequisite for adaptability. (Dutch workshop)
- Participants identified healthy soils as key to long-term resilience, but current land tenancy arrangements were generally not seen as promoting sustainable land use. Long(er)-term contracts, public payments for good practices, and/or the creation of a land bank were mentioned as possible solutions. (Dutch workshop)
- Whereas this task's focus is on the CAP, many of the challenges, as well as possible solutions, relate to adjacent policies, e.g. environmental standards or animal welfare. The CAP's contributions to resilience may actually be relatively small, and should in any case be considered in relation to the interactions with these adjacent policies across levels. (Dutch workshop)
- Whereas participants acknowledged the important role of the CAP in developing resilience capabilities, they also pointed to the constraints imposed by financial inspection agencies as an important barrier to implementing intervention measures in such a way that they would foster adaptability or transformability. (Belgian workshop)



- Many participants found it difficult to picture genuine transformations, as these often entail ‘unknown unknowns’. This may result in a bias towards thinking in terms of robustness and adaptability. (Spanish workshop)
- The design of resilience enabling policies requires the engagement of multiple actors at multiple levels of governance, resulting in a considerable coordination challenge. (Spanish workshop)
- As a result of input prices growing faster than output prices, farming systems face a constant push to increase the scale of production to maintain income, often at the expense of the natural environment. (Polish workshop)
- Some participants argued that EU funds should be used more economically and effectively. Social policy elements should be relocated from the CAP to the national level. (Polish workshop)

3.2 Online cocreation platform

The interaction on the online co-creation platform solicited detailed responses by two participants, one from the Netherlands and one from Spain. Despite the limited participation, key results are reported here since they also inspired the research team’s thinking about lessons learned.

Asked which policies or instruments were most in need of change to strengthen the **robustness** of the EU’s farming systems, both participants suggested using direct payments as incentives to adopt green practices and to reward the provision of public goods. This would make farming systems more robust by strengthening natural pest and disease regulation and supporting extensive farming systems. One participant called for shifting funds from pillar I to pillar II where rural development measures were more linked to adaptability and transformability. Furthermore, stronger environmental and climate legislation should secure ecosystem functions on which farm production relies (i.e. pollination, water provision). Policy makers at all levels were seen as responsible for realising such a shift.

As policies or instruments to strengthen the **adaptability** of the farming systems, the two participants highlighted phasing-out of area-based direct payments, more support for young farmers, restrictive legislation on plant protection products, water quality, weather risk management that requires farmers to adapt their practices, and more support for advisory services, training and cooperation. This would enable adaptability and transformability to address new issues emerging from societal requirements, environmental problems, climate change,

animal welfare and equity issues. Again, policy makers at all levels, but also a broad range of actors from the private sector, civil society and academia were seen as being in charge.

As policies or instruments to strengthen the **transformability** of Europe's farming systems, the two participants highlighted more support for non-agriculture and co-operation, redesign of farm support to incentivise adaptation, support for research, advisory services and outreach, and the From Farm to Fork strategy. Here, the role of regional and cross-sectoral cooperation (e.g. along the One Health paradigm) was seen as most important.

Under the **regional rivalry scenario**, the policy recommendations were seen as still valid, although control and sanctioning systems might need to be strengthened to ensure compliance with environmental and other standards. The participants would invest even more in adaptability and transformability, and in forecast exercises to enhance preparedness.

Under the **fossil-fuelled development scenario**, the two participants would invest even more in research and innovation, taxpayer information, nutritional information for consumers and links between rural and urban areas, renewable energy, SDGs, niche innovations that combine agricultural with non-agricultural activities and exploration of niche innovations on global markets.

3.3 Policy reviews

In this section we summarise policies and initiatives that work package partners – through a review of current policies – have identified as good practice to enhance the three resilience capacities of farming systems. Many of the initiatives relate to the CAP, but they often transcend the narrow boundaries of traditional agricultural policy.

Policy initiatives identified by the Dutch team:

- ***Vision Agriculture, Nature and Food: Valuable and Connected ('Visie Landbouw, Natuur en Voedsel: Waardevol en Verbonden), 2018***: governmental vision to realise a shift towards 'circular agriculture', aiming for a drastic reduction of waste, losses and emissions, while closing nutrient and resource loops. The vision was followed by a '**realisation plan**' (2019), which includes schemes for innovation, experimental spaces, the use of governmental lands for circular initiatives, support short chains, and aims for reducing constraining (manure and waste) legislation, foster collaboration to optimally use waste streams, and use the CAP and the National Strategic Plan to support circularity.

- **Climate Agreement ('Klimaatakkoord'), 2019:** covenant between the government and broad range of actors containing 600 agreements to save the emission of climate gasses. For arable farming, the aim is to reduce 0.4-0.6 Mton CO₂-eq. by 2030. This should be achieved through pilots, knowledge exchange, technological innovations and additional advisers.
- **Region Deal Nature-inclusive Agriculture North Netherlands ('Regio Deal Natuurinclusieve Landbouw: Samen werk maken van een vital platteland in Noord-Nederland'), 2019:** 'Deal' between the national government and three northern provinces to support initiatives that foster nature-inclusive agriculture. E.g., in Groningen, the arable farming sector, WWF, Rabobank and the province of Groningen will develop a biodiversity monitor.
- **Deltaplan Agricultural Water Management ('Deltaplan Agrarisch Waterbeheer'), 2017:** fostering pilot projects and knowledge exchange related to green manure practices, catch crops, and increasing awareness of water contamination.
- **Advisory committee nitrogen oxide deposition, 2019-2020:** following a ruling from the Dutch supreme court, the detrimental impacts of nitrogen oxide deposition on Natura 2000 reserves has to be reduced before any new building and infrastructure developments can be allowed. The advisory committee will draft plans to reduce these emissions, e.g. by decreasing the maximum speed on highways and buying-out of intensive livestock farmers.
- **Deltaplan biodiversity recovery ('Deltaplan biodiversiteitsherstel), 2018:** covenant between farmer organisations, value chain actors, researchers, financial organisations, and environmental NGOs to mitigate biodiversity losses and foster recovery; includes plans to develop a biodiversity monitor for arable farming, which will be integrated in Rabobank's risk assessments.

The Belgian team focused on current impacts of EU legislation on the farming system and identified the following initiatives:

- **Producer organisations** are quite prevalent in the Flemish fruit and vegetable sector, where they have contributed to a better negotiation position in the supply chain and have been instrumental in facilitating technological innovation, including innovation aimed at improving the environment. The European Commission seems to aim to transfer this success story to the dairy sector, by extending the PO-driven CMO system. A large share of all milk is processed by farmer-owned dairy cooperatives, of which only one is organised as a PO. Two additional POs were established to unite farmers supplying private processors, but these are not organised as cooperatives and do not own the milk supplied by their members. As a result, they cannot enter price negotiations. They have been

founded to be beneficial in terms of discussing non-price aspects and collaboration among farmers.

- The **Complete Dairy Quality Assurance (DQA)** was established in 1999 by three farmers' organisations and the dairy industry association. In 2019, an inter-branch organisation (MilkBE) has been established by the same actors, focusing on milk contaminants and botulism.

As these type of collaborations may reduce market transparency, a recommendation would be to provide daily information on milk and dairy products.

The Spanish team identified various policy proposals and ideas that could strengthen the resilience of extensive sheep farming:

- The **Farm Territorial Contract** is an initiative proposed to reward the ecosystem services provided by extensive sheep farming. Under this scheme, regional authorities and farmers can agree on implementing particular good practices to manage a territory, which is compensated by EU and regional funds. This initiative has already been considered under the rural development programs in the region of Aragón.
- There is some recent thinking on improving **access to pastures** for the extensive sheep sector, with calls for free access to state-owned pastures. Some regional authorities have provided funds to modernise and open the local state-owned pastures to livestock operators. Additionally, there is a proposal to define specific aids for pastures falling within natural parks.
- There are various initiatives to support **generational renewal**, such as advisory services and insurance schemes for young farmers in Aragón. Across Spain, 'schools of livestock and pastures' have been set up. Furthermore, a digital platform to foster the exchange between young farmers and new entrants has been developed, inter alia providing courses on farm management and administration.
- There are various **climate change adaptation schemes**, such as a regional project to store, conserve and distribute rainwater for extensive systems, and fiscal instruments to compensate economic losses caused by draught.
- To deal with conflicts between livestock and wild fauna, **compensatory payments** were introduced. In addition, 2nd pillar funds are used to invest in land hedging, dogs, GPS and video controls. Universities have received funding to develop new solutions for livestock monitoring.
- In Aragón, the regional authority has supported the **creation of producer organisations** for extensive livestock systems, e.g. to improve sanitary conditions and to preserve local breeds.

The UK team found a broad range of potentially resilience enhancing policies:

- In its 2018 *Health and Harmony future of food policy paper*, the UK government has looked at rather radical changes to farming policy. The paper suggested replacing cross compliance, greening and Countryside Stewardship with a new environment land management scheme (ELMS) to pay for public goods, the provision of environmental benefits and the polluter pays principle. The government also proposes implementing greater transparency in the supply chain, to enable more effective responses and negotiations for producers and a fairer return. Risk management via the government would mean support for an independent market without distorting it, as well as the government facilitating new support tools and uptake of insurance on farms. Previously in 2013, the '*UK Strategy for Agricultural Technologies*' fostered support for more training and better communication pathways between researchers, land users and advisors.
- **Catchment Sensitive Farming programme:** government partnership with the Environment Agency and Natural England that supports farmers to reduce water and air pollution. The scheme has had a positive reception from farmers, and they would generally like to see more of this type of collaboration regarding environmental concerns. The catchment scale allows efficiency of reducing pollution and saving costs over larger areas than single farms as well as creating more social cohesion.
- **Payments for Ecosystem Services:** The UK government is currently interested in the PES model for incentivising land managers to maintain and enhance ecosystem services such as clean water. A report commissioned by DEFRA on PES in 2015 outlined best policies for helping sectors such as agriculture to be actively involved with PES. These included The National Planning Policy Framework, The Natural Environment White Paper and the UK National Ecosystem Assessment, which all encourage landscape-scale planning with a range of organisations coming together at local levels.
- **Results-based agri-environment payment scheme (RBAPS):** between 2016-2018 this scheme for the proposed Environmental Land Management Scheme was piloted on upland grassland/livestock and lowland arable farms in North Yorkshire, Norfolk and Suffolk. Farmers were trained in making assessments for specific measures of biodiversity (indicators) and tested against the results from professionals. This allowed flexibility, i.e. the use of their own knowledge without prescriptions. The lack of prescriptions also cut the administrative cost and time. Where results were higher than the controls, the cost benefit looked to be at least that of current agri-environment schemes.
- **Campaign for Rural England report on 'New Model Farming', 2016:** provides holistic recommendations to improve farming systems' resilience, including making land more accessible, long-term sustainable funding with targeted funding towards new entrants

and successors, multi-purpose farming, strong incentives for managing natural assets, and farmer-led development of technology and techniques.

- **NFU domestic agricultural policy report, 2017:** aimed to deliver a ‘bold and ambitious future for farming’, focusing on market volatility, productivity and the environment. The report inter alia proposes a crisis management fund and saving schemes from deferred taxes or with match funding, better market data, pilots with revenue insurance schemes, as well as public-private programmes for research, technology development and skills training.
- In their ‘**Net Zero**’ report of 2019, the NFU also set out an ambition and pathways to zero GHG emissions from UK farming by 2040.

Various other platforms were identified, including demonstration farms run by Linking Environment and Farming (LEAF) and the Agriculture and Horticulture Development Board (AHDB), farmer ‘field labs’ run by the Innovative Farmers programme, a new developing network of Agroforestry demonstration farms, and the Farm Carbon Cutting Toolkit, which inter alia runs a ‘soil carbon farmer of the year’ award.

The Polish and Italian policy reviews largely focused on the implementation decisions of their respective governments under the 2014-2020 CAP. In Poland, much emphasis was placed on improving irrigation and water supply, assistance to young farmers, support to producer organisations, and support for processing and marketing of agricultural products. The Italian team provided an overview of relevant EU and national legislation but did not identify any further policy initiatives.

A synthesis of the findings will be presented in section 4.

4 Synthesis and policy recommendations

This section presents a synthesis of the findings and policy recommendations, followed by the feedback on these recommendations during the Brussels workshops.

4.1 Synthesis of the findings

Five general topics clearly emerged from the workshops:

- The desirability of the three resilience capabilities differs across the case studies. Some farming systems, in particular in Eastern Europe, have already undergone major

transformations. Others face enormous uncertainties or stresses. Accordingly, in these cases, the policy focus has been on enhancing robustness and enable adaptability. However, other farming systems have become partially dysfunctional in the eyes of policy makers, in particular due to negative environmental impacts, and in these cases more policy initiatives with an emphasis on transformability were found.

- The question of whether the resilience capabilities are complementary or competitive was pervasive. The findings of this work package point to trade-offs at the level of policies and due to competition for budgets. At the same time, participants repeatedly emphasised the need for a system to be robust in order to be able to adapt or transform, suggesting a certain degree of complementarity.
- Several undesirable effects of robustness-enabling policies were recognised by participants:
 - disincentives to adapt or transform,
 - in the long run even the unlearning of adaptability of transformability,
 - and a wrong illusion of stability.
- Participants in several case studies (and later in the Brussels workshops) called for a long-term vision for the CAP. Some attempts, e.g. the bioeconomy strategy or the draft farm to fork strategy, were seen as rather weak attempts. Vision and strategy documents need to provide substance, but also address the symbolic dimension of policy, which includes the communication of norms and priorities.
- The policy makers designing and negotiating the CAP for the programming period after 2020 face a strategic trade-off: slowing down change through the continuation of robustness-oriented policies, or providing direction for change.

4.2 Policy recommendations

The research team derived distinctive policy recommendations to enable robustness, adaptability and transformability.

Policy recommendations for enabling robustness:

- Robustness includes the capacity to anticipate stresses and shocks, to cope with them and to respond.
- More emphasis is required to strengthen the ability and willingness to anticipate as a robustness-enhancing capability. This became clear when the attempt to engage participants in an anticipation exercise - the discussion of scenarios during workshops - met with limited engagement.

- There is a real possibility that the CAP and its national implementations constrain resilience. Several examples of resilience-constraining policies were discussed during the workshops, in particular the Spanish case study, but also the dairy crisis which could have been anticipated.
- Protecting the status quo becomes increasingly difficult for the agricultural systems in the case studies.
- The provision of buffer resources through area-based direct payments work for some agricultural systems, but not for others.
- With regard to risk management schemes, most case studies showed struggling attempts to establish such schemes that are effective and taken up by the target groups.

Policy recommendations for enabling adaptability:

- The medium-term focus of adaptability-enabling policies means that the policies need to provide direction for the desirable adaptation process. A key element in this regard for several of the farming systems in the case studies is the remuneration of public goods.
- Flexibility and variability were mostly linked to calls to “reduce red tape”. This included at least two dimensions: the requirements for access to supportive policy schemes, and the monitoring and control schemes which were often experienced as burdensome, intrusive and insufficiently aligned.
- There is a need to close the gap between reflection/innovation and practice. Important policy initiatives for this purpose would include:
 - less or more flexible regulations and inspections, and an integrated approach to the multitude of monitoring and control systems;
 - funding for projects rather than predefined measures;
 - defining three or four tiers of payment levels which are aligned with private certification schemes of corresponding levels of ambition;
 - strengthening Agricultural Knowledge and Innovation Systems as well as advisory services to integrate advice for production and provision of public goods;
 - measures to encourage and support collaboration, opening up, and reconnecting agriculture with society.
 - To enable adaptive capacity, farmers could be paid for work time spent in research projects.
- An issue that requires further attention are the trade-offs between flexibility and the medium-term commitments required by adaptation and many measures with a medium-term goal, such as agri-environmental measures of investment support.

Policy recommendations for enabling transformability:

- The long-term orientation required for enabling this resilience capability points to a new task of public policy that was clearly articulated as a need during several workshops – the coordination of a vision.
- Similarly, enabling deep learning as part of resilience-enhancing policies requires a reflexive mode of governing – to influence people’s assumptions about the future, their self-perceptions and identities (e.g. what does it mean to be a farmer). This requires specific policy instruments that enable and encourage dialogue and co-design, as well as the communication of role models and positive deviance (Feindt and Weiland, 2018).
- Deep learning and niche innovations are fostered by programs such as EIP-Agri and LEADER plus. Programs for rural cooperation should:
 - adopt integrated approaches across sectors,
 - change rules of state aid to allow more flexibility and innovation;
 - encourage links to other policy areas to enhance connections.

4.3 Brussels workshop

The aim of the Brussels workshop was to validate a synthesis of the findings from the national workshops and policy reviews and to collect further policy suggestions.

The atmosphere at the two workshop rounds was constructive and focussed with active contributions from all participants. Participants understood the messages and the content well and were able and willing to engage throughout both workshop rounds.

In the first part of each round, the project team explained the SURE-Farm resilience concept, its application to the analysis of public policy and the results of the ResAT analysis in the eleven case studies (see SURE-Farm deliverable 4.2). The concept was well understood and the findings generally validated. The distinction between robustness, adaptability and transformability was seen as very useful. The finding that the current CAP mostly focused on robustness while neglecting adaptability and transformability was confirmed. The explanation for the differences between cases in the adaptability to support the resilience of the respective farming systems were seen as containing important lessons (see section 4.4 below).

In the second part, the project team presented the findings from the analysis of policy initiatives in the six case studies described above. The conclusion that only the Dutch case contained a transformability orientation, while the other cases showed a dominant orientation towards robustness with some support for adaptability, was shared. Some participants added information about other relevant initiatives that complement the research by case study partners.

In the third part, the project team presented the findings from the regional workshops. The results were confirmed by the participants. The Spanish case triggered discussion, in particular about the role of coupled direct payments. Interestingly, for some regions and for some problems coupled direct payments were seen as an option, although some participants felt that payments for ecosystem services would be a better alternative. Participants also raised the question whether maintenance of the existing farming system was always the best option. For extensive farming systems with important ecosystem services, questions were raised how payments could be linked more clearly to the desirable outcomes (for example, does it make sense to link payments to animals or rather to hectares with a requirement to keep animals at a specific density?). The discussion also suggested that in some regions transformability options might be limited.

In the fourth and final part, the project team presented general topics emerging from the workshops as well as recommendations with regard to policies that enable robustness, adaptability and transformability. These recommendations were broadly validated. The recommendations on robustness-, adaptability- and transformability-enhancing policies followed the set of indicators of the ResAT and were therefore seen as very systematic. A key finding that was met with much interest was the constraining effect of robustness-enhancing policies on adaptability and transformability. The concluding messages on enabling robustness, adaptability and transformability (see section 5 below) received very positive feedback and participants articulated a clear need for the products from the work package.

Participants also raised important further points:

- Many participants suggested to open the analysis to other policies. However, the SURE-Farm project is not designed to do that. Looking at an integrated food and agriculture policy would require to take a broader range of policies into account. A limitation of the SURE-Farm project is its lack of a food system dimension and the limited development of the vertical dimension of value chains.
- It became clear that the novelty of the work package is the new framing which enables new ways to think about strategies. This includes opening up to non-agricultural actors.
- While the participants did not provide policy options beyond those from the regional workshops, the need for a coordinated long-term vision was much reinforced.
- Some participants from the farm sector emphasised the importance of conflicting goals.

Overall, the workshop validated the approach taken in the work package as well as the findings. The discussion with participants also stimulated the research team to think further about the implications of their findings.

4.4 Further considerations: lessons inspired from the Brussels workshop

The workshop also inspired some further considerations and lessons:

- Farmers should be incentivised to take resilience in their own hands. The constraining effects of robustness-enhancing policies on other resilience capabilities suggests this conclusion.
- In other words: Robustness-enhancing policies outsource resilience capacities to the public part of the enabling environment, with a likelihood of crowding out private initiatives. This leads to the following recommendations:
 - Robustness-supporting policies should be reduced to the guaranteed maintenance of a basic floor during crisis and disaster, for systemic risks that are uninsurable and for perturbations that cannot be absorbed by the system alone.
 - General income support instruments might enhance robustness as they provide buffer resources, but cannot be justified on this ground beyond the minimum level required for robustness. Generally, robustness-enhancing policies should be based on a foresight assessment of challenges and be as specific as possible to address the anticipated challenges.
 - More focus on anticipation is needed (and a clear willingness to invest in anticipation). The results of foresight exercises need to be used to guide policy and translate into concrete action.
 - There is a general need to develop options how to respond to undesirable scenarios. Much of the workshop discussions tended to avoid unpleasant scenarios, as do policy makers in general. This observation corresponds to insights from ecological resilience research, and the example of the dairy crisis where policy makers and farm system actors did not respond to scenarios which showed an impending crisis, so that no one prepared for the undesirable scenario that finally hit the sector.
- The potentially conflicting goals or the lack of policy coherence if farmers want to adapt but are constrained by other elements of the policy framework is an important finding. Examples are:
 - Farmers do not take up measures because it constrains their flexibility, e.g. planting hedge rows or creating landscape elements;
 - Higher density of controls if farmers engage in second pillar measures, with a high risk of losing other payments if they incur problems with their voluntary second-pillar measures.

- There is a need for scaling-up of collaborative approaches.
 - The inherent limits to support collaboration in the CAP through the dominance of state aid-types of instruments with predefined conditions and payments for individual recipients need to be overcome through the inclusion of other instrument types.
 - The capacity of AKIS systems needs to be increased, taking into account the different needs in different member states.
 - AKIS should be reframed towards resilience-enhancing purposes.
 - The advisory system needs to be geared towards resilience.
- With regard to transformability-enabling policies, the main conclusions from the project were strongly supported by the final workshop in Brussels:
 - The calls for a long-term vision;
 - The needs for reflexive modes of governing;
 - The importance to make the programmes for rural cooperation fit for collaboration that enables deep learning, niche innovations and a collaborative approach to enhance the resilience of Europe's farming systems.

5 Conclusions

Supporting the resilience of Europe's farming systems is now one of the declared priorities of the CAP. To achieve this aim, a distinction between the three resilience capabilities of robustness, adaptability and transformability is essential. The CAP of the budget period 2014-2020 has supported the robustness of many farming systems, mostly through the transfer of buffer resources in the shape of area-based direct payments, while support for adaptability and transformability is underdeveloped. Even worse, the current CAP props up a status quo that is often economically dependent on transfer payments while not paying sufficient attention to the sustainable delivery of public goods. Such a policy approach is likely to impede adaptability and transformability by disincentivising necessary change.

The workshops with policy makers in six case studies across Europe showed varying needs to support the three different resilience capabilities, depending on the context. While the resilience capabilities can be complementary, there are trade-offs at the level of policies and competition for budgets. Several effects of robustness-enabling policies give reason for concern: disincentives to adapt or transform, a possible illusion of stability, and in the long run even the unlearning of adaptability and transformability. Another important consideration is the symbolic dimension of

policy, because policy documents and instruments communicate norms and priorities. Hence, there is an essential choice to be made for the future CAP: slowing down change through support for a status quo that is not inherently robust, or providing direction for change and investing in adaptability and transformability. In the past, the CAP was mostly reformed incrementally. However, participants in several workshops called for a long-term vision for the CAP and found current attempts, e.g. the bioeconomy strategy or the draft Farm to Fork Strategy, rather weak.

The findings presented in this paper lead to a clear conclusion - to improve the resilience of Europe's farming systems, the CAP needs to change significantly:

- Robustness could be better supported by enhancing the capacity to anticipate shocks and stresses, to cope and to respond. This is different from propping up a status quo that – as evidenced by the case studies – has become increasingly difficult to maintain. Area-based direct payments work only for some arable systems, and the establishment of risk management schemes is struggling in most case studies.
- Adaptability could be better supported by providing direction, in particular through the remuneration of public goods, by increasing flexibility and variability through reducing red tape, and by closing the gap between reflection/innovation and practice. This would require more support for project-type funding, for advisory services and AKIS, and for collaboration to reconnect agriculture and society. Farmers' adaptive capacity could for example be fostered by paying them for time spent in research projects.
- Transformability could be enhanced by the formulation of a coordinated long-term vision, by support for deep learning, and by reflexive modes of governing that influence people's assumptions about the future, their self-perceptions and identities. This requires dialogue and co-design as well as the communication of role models and positive deviance. Programs such as EIP-Agri and LEADER plus could be further developed into support for rural cooperation that enables integrated approaches across sectors. This might require a change of the rules for state aid and a move towards other policy area to enhance cross-policy connections.

Further development of the CAP, its national implementation and other corresponding policies along these lines could enhance the whole range of resilience capabilities of Europe's farming systems. As the findings presented in this report show, a wide range of policy makers and stakeholders across Europe share the perception that such a broader approach to enhance the resilience of EU's farming sector is both necessary and feasible.

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