The Struggle of Farming Systems in Europe: Looking for Explanations through the Lens of Resilience

Les difficultés des systèmes agricoles en Europe : à la recherche d'explications du point de vue de la résilience

Die Schwierigkeiten der Agrarsysteme in Europa: Mit dem Blick durch die Brille der Resilienz auf der Suche nach Erklärungen

Miranda P.M. Meuwissen, Peter H. Feindt, Peter Midmore, Erwin Wauters, Robert Finger, Franziska Appel, Alisa Spiegel, Erik Mathijs, Katrien J.A.M. Termeer, Alfons Balmann, Yann de Mey and Pytrik Reidsma

Many farming systems in Europe are struggling

Farming systems in Europe face accumulating economic, environmental, institutional and social challenges. Examples include the impact of extreme weather events, reduced access to markets and value chains (e.g. due to trade wars, political boycotts or Brexit), less stable and less protective policy environments, increasing controversies about agricultural mainstream practices, and more recently the interruptions caused by the Covid-19 pandemic. These uncertainties exacerbate demographic issues such as a lack of successors to enable generational renewal at farm level, and insufficient availability of qualified seasonal and permanent labour (Pitson *et al.*, 2020). The compounding challenges raise concerns about the resilience of Europe's farming systems. The analysis of multiple farming systems across Europe presented in the articles of this Special Issue shows that most of them are struggling to respond to accumulating shocks and stresses. However, their mere existence proves that, so far, they have been able to cope. But what do we know about the resilience of our farming systems beyond anecdotal evidence? The SURE-Farm approach allows us to improve our systematic understanding of the factors that enable and constrain farming systems' resilience. After briefly explaining our approach, we present an analysis of key mismatches between the challenges and the capacities of farming systems that cause their struggles.

The concept of resilience

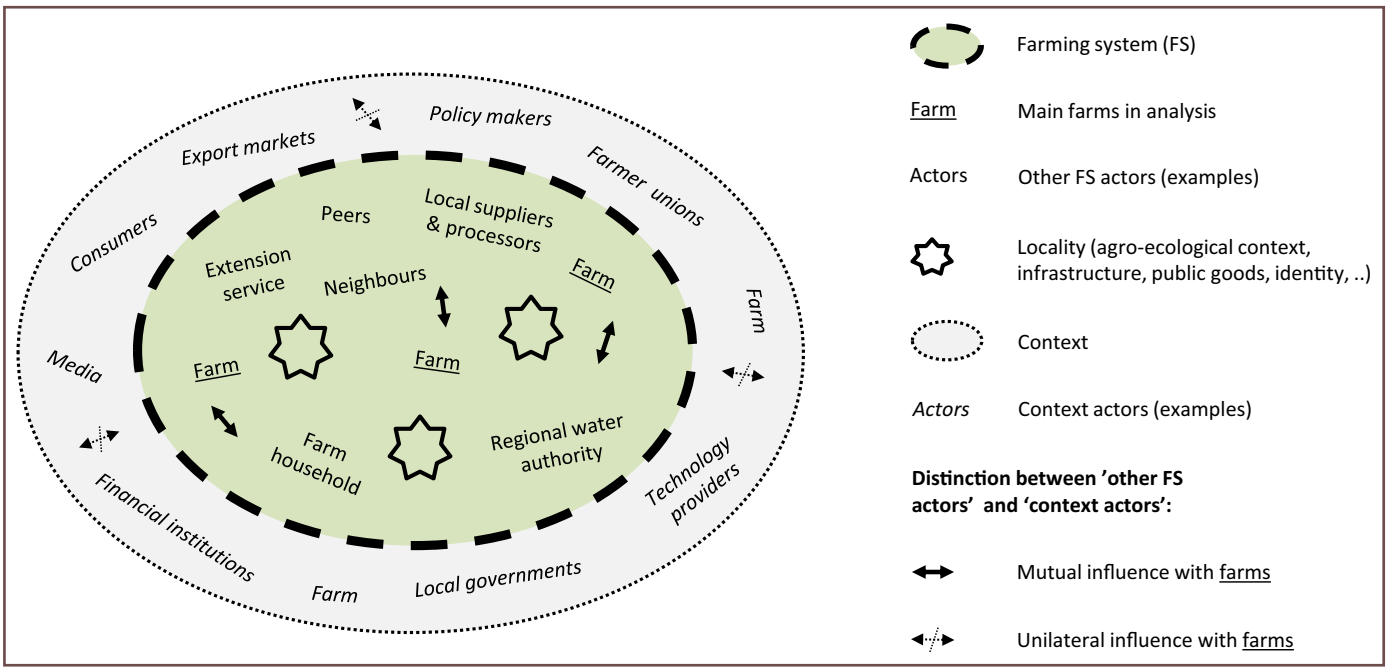
Resilience is about dealing with shocks and stresses. More precisely, we define the resilience of a farming system as: *its ability to ensure the provision of its desired functions in the face of often complex and accumulating economic, social, environmental and institutional shocks and stresses, through capacities of robustness, adaptability and transformability* (Meuwissen *et al.*, 2019). We address resilience issues with a focus on the regional context because each farming system has co-evolved with a specific social-ecological environment. The activities of the different actors constituting a farming system – e.g. farms, farmers' organisations, service suppliers and supply chain actors – are enabled by regional environments and deliver the specific functions of the agricultural system, in particular agricultural products

Box 1: Case study farming systems (FS) in SURE-Farm

Case studies covered different sectors, farm types, products and challenges. They included large-scale arable farming in Northeast Bulgaria, intensive arable farming in Veenkoloniën, the Netherlands, arable farming in the East of England, large-scale corporate arable farming with additional livestock activities in the Altmark in East Germany, small-scale mixed farming in Northeast Romania, intensive dairy farming in Flanders, extensive beef cattle systems in the Massif Central, extensive beef and sheep farming in central and Northeast Spain, high-value egg and broiler systems in Southern Sweden, small-scale hazelnut production in Lazio, central Italy, and fruit and vegetable farming in the Mazovian region, Poland. We characterised each FS by referring to a farm type and region, e.g. 'arable farming in the Veenkoloniën'. The farm type highlights the marketable goods (e.g. arable crops) and the region is a short-hand for the related public goods that are mostly bound to landscape and location, the other FS actors, most of which are typically located in the region, and the agro-ecological context, infrastructure and FS identity.

DOI: 10.1111/1746-692X.12278

Figure 1: A farming system (FS) consists of farms, other FS actors and FS' locality (Meuwissen *et al.*, 2019)



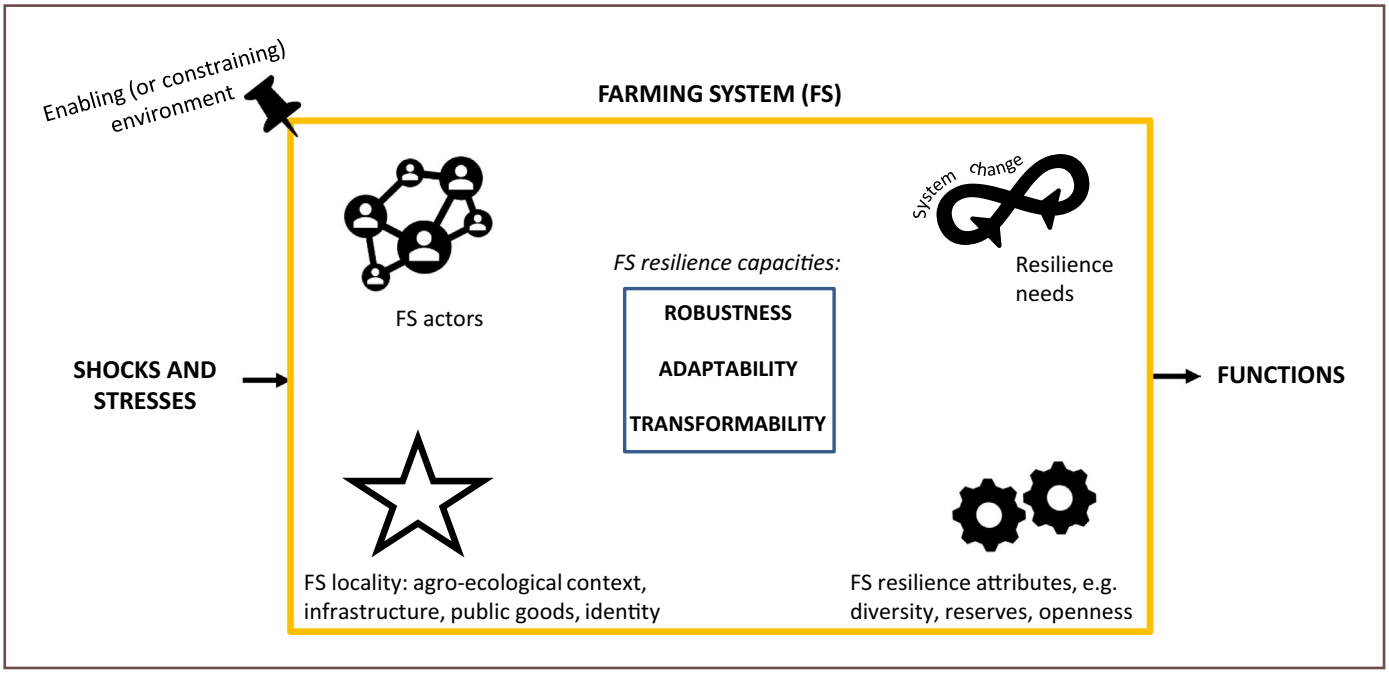
and public goods. We consider three distinct resilience capacities, i.e. for some shocks and systems, 'bouncing back' (*robustness*) is adequate, but in other circumstances *adaptability* and *transformability* are more suitable. We hereby build on, among others, Darnhofer (2014) who, focusing on farms rather than farming systems, also recognised that required capacities depend on the circumstances: 'in a predictable era of slow and marginal changes, the farm focus will be more on robustness and adaptability, while farmers need to emphasize the ability to transform in a period of radical change'.

The SURE-Farm approach to understanding the resilience of farming systems

The resilience of a farming system (FS) does not require the resilience of each individual farm. In the SURE-Farm project a FS consists of farms as well as other actors, such as local processors and neighbours, and the FS' locality (Figure 1). As case studies we selected FS that differ with regard to shocks and stresses faced, farm structure, agro-ecological circumstances, and historical-institutional context (Box 1).

For each FS we assessed the various components affecting resilience (Figure 2). Shocks and stresses were identified from in-depth interviews with farmers and other household

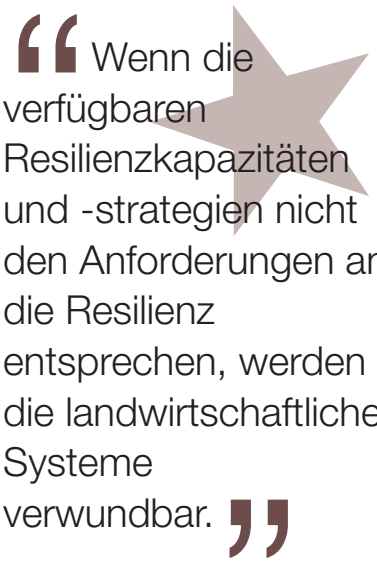
Figure 2: Understanding resilience of farming systems (FS) requires insight into multiple components.



members, and workshops with a broader range of stakeholders and experts. An analysis of FS responses to past and current challenges (e.g. continuation or changes in agricultural practices and governance) revealed whether the FS faces an enabling environment that provides opportunities and support or a constraining environment that reduces the range of viable options for the system. FS actors were identified based on patterns of influence, with mutual influence defining an FS actor. Whether a system was in need of robustness, adaptability or transformation was inferred from among others interviews and workshops with stakeholders. We also analysed general resilience-enhancing or -constraining attributes, such as the degree of diversity in the system and the amount of system reserves (Resilience Alliance, 2010). FS' locality emerged among others as an important attribute when discussing local traditions and emotional attachment to the land and to land ownership. Resilience capacities were assessed through direct measurement of perceived current capacities, statistics informing about past capacities (e.g. quick farm income recovery rates point at robustness), and perceived capacities to deal with expected challenges over the next 5 and 20 years. In addition, insight into past responses and strategies suggested by FS actors to enhance resilience was used to infer capacities. For instance, income stabilisation measures involving multiple FS actors (e.g. cooperatives and farmers) are part of robustness-enhancing strategies, while joint strategies to enable in-depth learning and flexibility were linked to adaptability and transformability (see Box 2 for definitions of capacities and further examples at FS level). With regard to the desired levels and actual performance of functions, (right-hand side of Figure 2), we considered private goods, such as the production of safe and affordable food and the degree to which people involved in farming earn a reasonable livelihood, as well as public goods, including biodiversity preservation and landscape attractiveness. We also included potential strategies to improve the delivery of functions. While analyses focused on FS level, they also included nested levels, such as the household, farm and farmer level. This reflects the open character of FS which are linked to various social networks, economic processes and ecological systems.

Box 2: Robustness, adaptability and transformability at FS level

- *Robustness is the capacity of a FS to withstand stresses and (un)anticipated shocks*. Examples refer to buffer resources, e.g. if a cooperative has a collective saving mechanism for bad times, or social capital where people help each other or provide credit in times of crisis.
- *Adaptability is the capacity to change the composition of inputs, production, marketing and risk management in response to shocks and stresses but without changing the structures and feedback mechanisms of the FS*. For instance, a local water authority jointly developing a strategy to enhance water infiltration in the area with local arable farmers (example from Veenkoloniën FS).
- *Transformability is the capacity to significantly change the internal structure and feedback mechanisms of the FS in response to either severe shocks or enduring stress that make business as usual impossible. Such transformations may also entail changes in the functions of the FS*. For instance, the Northeast Bulgarian FS transformed after the privatisation of state farms in the early 1990s. This initially created highly fragmented land ownership and many inheritors not knowing what to do with their small land parcels, old machinery and two or three animals. Through a process of renting and buying land, the FS transformed to dominantly large-scale farms (>1,500 ha). Simultaneously, other FS actors emerged in the private sector domain, including banks and advisory services. In the Altmark FS, former state farms and forced cooperatives transformed into cooperative farms or limited liability companies. As in Bulgaria, other FS actors developed such as banks and agronomy services. Due to a population exodus, the region is now perceived as marginalised, due in part to its poor infrastructure and the shortage of non-agricultural jobs. Termeer *et al.* (2019) describe the transformation of livestock farming in the Southern part of the Netherlands following the opportunities to import cheap feed through Rotterdam harbour, and to export pork and living pigs to neighbouring markets such as Germany.



Mismatches as potential causes of struggle

If available resilience capacities and strategies do not match the needs, FS become vulnerable. For this article, we conducted a meta-analysis by first synthesising the findings for each case, followed by the assessment of resilience capacities against the other components affecting FS' resilience (Figure 2). For instance, do the capacities correspond to the resilience needs of the system (Gunderson and Holling, 2002)? We then identified

mismatches that were recurring across FS. This assessment revealed three pervasive mismatches (Table 1): two concerning the strategies suggested by FS actors, one on the perceived capacity of FS to transform. These are elaborated below as causes of the struggle of many FS. The table also shows which of the SURE-Farm methods contributed to evidence of the mismatches across FS. For instance, for the first mismatch, data from methods marked with an 'a' found that the FS consisted of different kinds of actors, while data from methods marked with a 'b' concluded that suggested strategies to enhance resilience mostly addressed the farm level.

Farming systems encompass many different kinds of actors, but most strategies to enhance resilience capacities focused on the farm level. In each case study, multiple actors were identified as part of the FS. Beyond farms, actors ranged from value chain partners to social media, agronomists and banks. However, most strategies suggested by FS actors to improve resilience focused on farms, e.g. improved access to technology or alternative succession models. Fewer suggestions were found for resilience-enhancing strategies that involve other FS actors, e.g. a fairer cooperation between value chain partners and farmers, or banks and insurance providers sharing insights about risks with farmers to improve on-farm risk prevention through adapted farming practices or suitable diversification. Where (local) governments are part of the FS, as in the Altmark case study, suggestions for resilience strategies included a reduction of red tape and more financial support to farmers to deal with climate change.

Despite concerns about inadequate delivery of public goods, many strategies to enhance resilience capacities mainly addressed the delivery of private goods. Farm income was regarded as more or less inadequate for the viability of the dairy system in Flanders, the extensive grazing systems in the

Table 1: Methods, data and findings on mismatches between resilience capacities and needs in the case studies

Method[1,2]	No. of FS and total no. of participants	Mismatches[3]		
		FS encompass many different kinds of actors (a), but most strategies to enhance resilience capacities focused on the farm level (b)	Despite concerns about inadequate delivery of public goods (a), strategies to enhance resilience capacities mainly addressed the delivery of private goods (b)	FS actors expressed the need for transformation (a), but FS capacity to transform was perceived as low (b)
1. Survey (F)	11 (996)	b	b	a
2. Learning interviews (F)	11 (130)	a, b	a[4], b	-
3. Narratives (F, HH in some case studies)	5 (46)	b	b	not-a
4. Interviews with households (F, HH)	11 (169)	a, b	a[4], b	a
5. Focus groups on risk management (FS)	11 (78)	a	-	b
6. Participatory workshops on current resilience (FS)	11 (184)	a, not-b	a	b
7. Assessment of policy instruments (FS)	11 (56)	a, b[5]	a, b	not-a, not-b
8. Bottom-up analysis design of policy instruments (FS)	5 (135)	a, b[5]	a	a[6], b
9. Co-design workshops to strengthen CAP's resilience impacts (FS)	7 (71)	a, not-b	a, not-b	a[6], b[7]
10. Participatory workshops on resilience in the future (FS)	9[8] (130)	a, not-b	a, b[9]	a[6], b

[1]Most methods are elaborated in this issue, i.e. 1, 2 and 5 (Spiegel *et al.*); 3 (Nicholas-Davies *et al.*); 4 (Coopmans *et al.*); 6 (Reidsma *et al.*); and 7, 8 and 9 (Buitenhuis *et al.*). Details of method 10 are in Paas *et al.* (2020). Methods 2 and 5 are further elaborated in Urquhart *et al.* (2019) and Soriano *et al.* (2020), respectively.

[2]Type of actors: farmers (F), other household members (HH) and multiple farming system actors (FS).

[3]Similar letters indicate methods underpinning the same element of the mismatch. If findings contradict an element this is indicated as 'not-a', 'not-b'. Missing letters indicate that the method had another scope.

[4]The level of concern about the delivery of public goods differed across FS.

[5]Other FS actors were mentioned, but only in a very generic way (no clear strategies).

[6]With the exception of central and Northeast Spanish FS actors as the initiated transition was perceived to be undesired and forced upon the system.

[7]Because of perceived dependence on factors beyond the FS, such as sustainability standards elsewhere.

[8]Due to travel restrictions during the Covid-19 pandemic, 2 FS replaced workshops with desk studies.

[9]Whereby adequate delivery of private goods was considered as a prerequisite for improving delivery of public goods.

Diversity is one of the resilience attributes. Improving resilience attributes at the level of a farming system is complex. It requires long-term vision and courage.

Massif Central and central and Northeast Spain, the broiler production in Southern Sweden and the fruit farming system in the Mazovian region. However, across all case studies, farming system functions for the delivery of public goods needed particular attention. In particular the quality of rural life and infrastructure were frequently classified as functions that performed badly. However, many strategies suggested by FS actors to enhance resilience were limited to improving the delivery of private goods. Suggestions for securing public goods included the implementation of conservation farming (e.g. in the arable system in East England), improved water management (e.g. in the hazelnut system in Lazio), and introduction of technologies which reduce pesticide use (e.g. the use of herbicides in the Mazovian fruit production systems). It was uncertain, however, whether these would be enough to address the need to improve the maintenance of natural resources, biodiversity and attractiveness of rural areas.

Farming system actors expressed the need for transformation, but farming systems' capacity to transform was perceived as low. At system level, the capacity to transform was perceived to be low in all case studies, except in the Northeast Romanian mixed-farming system. The latter may relate to the multiple disruptive changes in the political and economic environment of the system during the past 100 years (disrupting path dependencies and enabling learning effects), compared to which the current institutional environment was perceived as more stable, thereby positively affecting the FS's perceived capacity to transform. The low perceived capacity to transform in the other case studies met an expressed need for transformation. Nevertheless, the recent past has shown ample examples of system adaptation. Why, then, was (incremental) transformation at system level perceived as more difficult? Suggestions might be found in low-performing resilience attributes at FS level (reflected by the cogwheels in Figure 2), such as strong mutual dependence between farmers and other value chain actors in Veenkoloniën; poor reputation and little appetite for cooperation in the Mazovian case; minimal networking outside the FS in the hazelnut case study; and succession problems apparent in many systems (Reidsma *et al.*, this issue). Furthermore, several environment factors were found to enhance robustness but at the same time constrain transformability, such as access to direct payments that reinforce a focus on maintaining the *status quo*. This was observed in various systems. In addition, while succession problems were

> “Si les capacités et stratégies de résilience disponibles ne correspondent pas aux besoins en résilience, les systèmes agricoles deviennent vulnérables.”

Developing resilience-enhancing strategies for Europe's farming systems (FS) requires roles of each FS actor, not only farmers.

Box 3: Frequently asked questions about resilience

Q1. Does a FS need to have all three resilience capacities?

A: Not necessarily. The required capacities depend on the shocks and stresses faced. FS can have specific resilience strategies to address specific challenges, e.g. insurance against adverse weather or market perturbations, and generic resilience strategies, e.g. financial reserves or social capital. Multiple and generic capacities increase resilience, because there can always be shocks and stresses of a new type requiring the FS to adapt or transform.

Q2. What is the difference between resilience and sustainability?

A: These concepts are complementary. Sustainability is the long-term coherence of a system with its ecological, social and economic environment. Resilience is the ability of a system to cope with stress and shocks. Unsustainable systems can be very resilient, and sustainable systems can be very vulnerable. Combining the concepts of sustainability and resilience enables policymakers and FS actors to identify pathways to achieve systems that deliver desired combinations of functions in a sustainable way while coping with accumulating or novel types of shocks and stresses.

Q3. In the past, many FS have been able to cope with shocks and stresses; why might their resilience capacities no longer suffice?

A: Resilience thinking requires us to take the unexpected and novel types of challenges into account. The hyper-connected world of the 21st century demands much more agile responses to surprises and complex dynamics that unfold fast, with accumulating knock-on effects, as experienced during the Covid-19 crisis.

Q4. Is transformability for a FS truly possible?

A: History shows many examples of transformations of FS (see examples in Box 2). However, discussions about future FS transformations are cumbersome due to various factors, such as human mental models which tend to focus on maintaining *status quo*, overly narrow perceptions of imaginable futures, experts being educated mostly towards improving efficiency, and a series of vested interests, mutual dependencies and institutional path dependence creating lock-in situations.

Q5. Can resilience be measured by a single indicator?

A: No, the concept of resilience is multi-faceted and cannot be captured by a single indicator. Nevertheless, two proxy-indicators providing a partial insight into resilience have been proposed. First, a composite indicator capturing perceived performance scores of the resilience-enhancing attributes such as the degree of diversity and the level of social and natural capital in the system (see 13 attributes in Reidsma *et al*., this issue). Second, a composite indicator based on farm-level statistics reflecting past robustness, adaptation and transformation (Slijper *et al*., forthcoming).

Q6. FS have been changing continuously over the past decades; what do we learn from the resilience approach?

A: Using the lens of resilience allows to understand (i) how change (adaptation, transformation) relates to the occurrence of shocks and stresses, and (ii) which elements of an enabling environment enhance adaptation and transformation. These insights can inform policymakers and other actors to open pathways of productive change.

Q7. Why does the SURE-Farm approach focus on FS in a regional context, i.e. why did you not consider larger spatial scales?

A: SURE-Farm chose FS as the key unit of analysis because the links between agricultural production and public goods are mediated through the specific ecological, geo-physical and climatic conditions in each region. Furthermore, social networks are often constituted at the regional level. Consequently, the regional scale appears as a suitable focus of analysis.

Q8. Resilience is a latent concept, i.e. it denotes a potential which is activated – and can be observed – only when a system is hit by stress or shocks. How can this be analysed?

A: Indeed, resilience is a latent concept. Nevertheless, learning from past trajectories and discussing future scenarios provides insights into *what enhances resilience*, such as a system's performance on resilience attributes and mitigation of mismatches between resilience needs and capacities.

Q9. Can the SURE-Farm approach be used to understand how FS can cope with the Covid-19 crisis?

A: Yes. First, the resilience attributes can be used to understand FS vulnerabilities. Second, insights into FS actors clarify which actors need to cooperate to identify solutions. Third, while in the short run strategies for robustness might be prioritised, post-crisis discussions can consider whether and how capacities of adaptability and transformability can be enhanced. Responses to the crisis might also reveal latent resilience capacities and trigger learning effects that enhance resilience.

Q10. Do you expect any tipping points causing FS to move into a new equilibrium?

A: At FS level tipping points have been identified that might necessitate major change in the future (Paas *et al*., 2020). For instance, in the Dutch arable system, the processing cooperative indicated that business would no longer be feasible if the regional production of starch potatoes drops below 80% per cent of its current level.

Q11. Many farms are going out of business, does this mean that FS are not resilient?

A: There are two perspectives. From the perspective of the exiting farm, the resilience and well-being of the farm household may well be enhanced if they exit farming due to reasons other than illiquidity and shift to other sources of income. From the perspective of the FS, the exit of farms can increase the resilience if other farms take over and improve the FS fit with the local context, e.g. enhanced diversification, increased openness to local communities, or increased economies of scale and improved profitability. But sector consolidation can also decrease resilience if it leads to monocultures, declining social capital and exploitative forms of profit maximisation.

pervasive, the moment of farm succession provides the best opportunity for transformation at farm level, possibly ushering in cumulative transitions at FS level (Nicholas-Davies *et al.*, this issue). However, this requires the unlikely event that a large segment of farms in the FS or a number of key FS actors change at the same time. A further explanation for low perceived transformability might be the accumulation of shocks and stresses; systems that evolved in response to past economic and institutional stresses now also report increasing social and environmental challenges. The latter include changing weather patterns, declining soil quality, water scarcity and new pests. The numerous social challenges include low attractiveness of rural regions and out-migration of young people. In Veenkoloniën and Flanders these were compounded by perceived and actual public distrust of dominant farming practices, which contributes to a low attractiveness of farming as a profession. While accumulating shocks and stresses might require transformative change, they might also reduce FS capacity to transform.

> "If available resilience capacities and strategies do not match the resilience needs, farming systems become vulnerable."

Outlook

The differentiated concept of resilience enables a better understanding of which challenges to Europe's FS require robustness, adaptability or transformability. It allows us to assess FS resilience capacities and the enabling or constraining effects of its environment. This improves our understanding of how FS can deal with – often accumulating – shocks and stresses and helps develop pathways towards more resilient and sustainable FS. This is illustrated by the articles in this issue which shed light on the manifold aspects of FS resilience, while Box 3 answers frequent questions.

Further Reading

- Darnhofer, I. (2014). Resilience and why it matters for farm management. *European Review of Agricultural Economics*, **41**(3): 461–484.
- Holling, C.S. and Gunderson, L.H. (2002). Resilience and adaptive cycles, in Gunderson L.H. and Holling C.S. (eds), *Panarchy: Understanding Transformations in Human and Natural Systems* (Island Press: Washington, DC), pp. 25–62.
- Meuwissen, M.P.M., Feindt, P.H., Spiegel, A. *et al.* (2019). A framework to assess the resilience of farming systems. *Agricultural Systems*, **176**: 102656.
- Paas, W., Accatino, F., Appel, F. *et al.* (2020). FoPIA-SURE-Farm 2, in: Accatino F. *et al.* (eds), *D5.5 Impacts of future scenarios on the resilience of farming systems across the EU assessed with quantitative and qualitative methods*. SURE-Farm Deliverable. Available online at: https://surefarmproject.eu/wordpress/wp-content/uploads/2020/06/D5.5.-Future-scenarios-on-the-FS-resilience.pdf.
- Pitson, C., Appel, F. and Balmann, A. (2020). Policy brief on future farm demographics and structural change in selected regions of the EU. Policy brief SURE-Farm. Available online at: https://surefarmproject.eu/wordpress/wp-content/uploads/2020/04/D3.6_Policy-brief-on-future-farm-demographics.pdf.
- Resilience Alliance (2010). Assessing resilience in social-ecological systems: Workbook for practitioners. Version 2.0. Online: http://www.resalliance.org/3871.php.
- Slijper, T., de Mey, Y., Poortvliet, P.M. and Meuwissen, M.P.M. (2020). Quantifying European farm resilience using FADN, forthcoming.
- Soriano, B., Bardaji, I., Bertolozzi, D. *et al.* (2020). D2.6 Report on state and outlook for risk management in EU agriculture. SURE-Farm Deliverable. Available online at: https://surefarmproject.eu/wordpress/wp-content/uploads/2020/02/D2-6-Report-on-state-and-outlook-on-risk-magagment-in-EU.pdf.
- Termeer, C.J.A.M., Feindt, P.H., Karpouzoglou *et al.* (2019). Institutions and the resilience of biobased production systems: the historical case of livestock intensification in the Netherlands. *Ecology and Society*, **24**(4): 15. Available online at: https://doi.org/10.5751/es-11206-240415.
- Urquhart, J., Accatino, F., Appel, F. *et al.* (2019). D2.3 Report on farmers' learning capacity and networks of influence in 11 European case studies. SURE-Farm Deliverable. Available online at: https://surefarmproject.eu/wordpress/wp-content/uploads/2019/07/D2.3-Report-on-farmers-learning-capacity-and-networks-of-influence.pdf.

Miranda P.M. Meuwissen, Business Economics Group, Wageningen University and Research, Wageningen, the Netherlands. ***Email: miranda.meuwissen@wur.nl***
Peter H. Feindt, Agricultural and Food Policy Group, Albrecht Daniel Thaer Institute of Agricultural and Horticultural Sciences, Humboldt-Universität zu Berlin, Berlin, Germany. ***Email: peter.feindt@hu-berlin.de***
Peter Midmore, Aberystwyth Business School, Aberystwyth University, Aberystwyth, United Kingdom. ***Email: pxm@aber.ac.uk***
Erwin Wauters, Agricultural and Farm Development, Institute for Agricultural, Food and Fisheries Research (ILVO), Merelbeke, Belgium. ***Email: erwin.wauters@ilvo.vlaanderen.be***
Robert Finger, Agricultural Economics and Policy Group, ETH Zurich, Zürich, Switzerland. ***Email: Rofinger@ethz.ch***
Franziska Appel, Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle, Germany. ***Email: appel@iamo.de***
Alisa Spiegel, Business Economics Group, Wageningen University and Research, Wageningen, the Netherlands. ***Email: alisa.spiegel@wur.nl***
Erik Mathijs, Division of Bioeconomics, KU Leuven, Leuven, Belgium. ***Email: erik.mathijs@kuleuven.be***
Katrien J.A.M. Termeer, Public Administration and Policy Group, Wageningen University and Research, Wageningen, the Netherlands. ***Email: katrien.termeer@wur.nl***
Alfons Balmann, Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle, Germany. ***Email: balmann@iamo.de***
Yann de Mey, Business Economics Group, Wageningen University and Research, Wageningen, the Netherlands. ***Email: yann.demey@wur.nl***
Pytrik Reidsma, Plant Production Systems, Wageningen University, Wageningen, the Netherlands. ***Email: pytrik.reidsma@wur.nl***

Summary

The Struggle of Farming Systems in Europe: Looking for Explanations through the Lens of Resilience

Many farming systems in Europe are struggling to respond to accumulating economic, environmental, institutional and social challenges. From a resilience perspective, they need three distinct capacities to continue delivering products, income and public goods: robustness, adaptability and transformability. Based on a structured assessment of the resilience capacities of 11 farming systems across Europe we conclude that three mismatches likely contribute to their struggles. First, while farming systems comprised many non-farm actors, resilience strategies largely focused on farms and their robustness, neglecting other options and opportunities. Second, while the delivery of public goods such as biodiversity and attractive landscapes was seen as a major concern, most resilience strategies focused on the delivery of private goods. Third, while in many farming systems actors expressed the need for transformation, farming systems' capacity to transform was perceived as low. Building on the differentiated concept of resilience, findings can guide policymakers, farming system actors, consumers and societal interest groups to identify pathways towards more resilient agricultural systems in Europe.

Les difficultés des systèmes agricoles en Europe : à la recherche d'explications du point de vue de la résilience

De nombreux systèmes agricoles en Europe peinent à répondre aux défis économiques, environnementaux, institutionnels et sociaux qui s'accumulent. Du point de vue de la résilience, ils ont besoin de trois capacités distinctes pour continuer à fournir des produits, des revenus et des biens d'intérêt public : la robustesse, l'adaptabilité et la transformabilité. Sur la base d'une évaluation structurée des capacités de résilience de 11 systèmes agricoles à travers l'Europe, nous concluons que trois déséquilibres contribuent probablement à leurs difficultés. Premièrement, alors que les systèmes agricoles comprennent de nombreux acteurs non agricoles, les stratégies de résilience ont été largement concentrées sur les exploitations agricoles et leur robustesse, négligeant les autres options et opportunités. Deuxièmement, alors que la fourniture de biens d'intérêt public, tels que la biodiversité et les paysages attrayants, est considérée comme une préoccupation majeure, la plupart des stratégies de résilience se sont axées sur la fourniture de biens privés. Troisièmement, alors que dans de nombreux systèmes agricoles, les acteurs ont exprimé le besoin de transformation, la capacité de transformation des systèmes agricoles a été perçue comme faible. En s'appuyant sur le concept différencié de résilience, les observations de cette évaluation peuvent guider les décideurs de l'action publique, les acteurs du système agricole, les consommateurs et les groupes d'intérêt sociétal pour identifier les voies vers des systèmes agricoles plus résilients en Europe.

Die Schwierigkeiten der Agrarsysteme in Europa: Mit dem Blick durch die Brille der Resilienz auf der Suche nach Erklärungen

Viele Agrarsysteme in Europa haben Mühe, auf die sich häufenden wirtschaftlichen, ökologischen, institutionellen und sozialen Herausforderungen zu reagieren. Aus Sicht der Resilienz benötigen sie drei verschiedene Fähigkeiten, um weiterhin Produkte, Einkommen und öffentliche Güter zu erzeugen: Stabilität, Anpassungsfähigkeit und Wandlungsfähigkeit. Auf Grundlage einer strukturierten Bewertung der Resilienz von 11 landwirtschaftlichen Systemen in ganz Europa kommen wir zu dem Schluss, dass drei Missverhältnisse wahrscheinlich zu ihren Schwierigkeiten beitragen. Erstens: Obwohl die landwirtschaftlichen Systeme aus zahlreichen nichtlandwirtschaftlichen Beteiligten bestanden, haben sich die Resilienzstrategien weitgehend auf die landwirtschaftlichen Betriebe und deren Stabilität fokussiert. Andere Optionen und Möglichkeiten wurden dagegen vernachlässigt. Zweitens: Während die Bereitstellung öffentlicher Güter wie Biodiversität und attraktive Landschaften als Hauptanliegen angesehen wurde, konzentrierten sich die meisten Resilienztrategien auf die Bereitstellung privater Güter. Drittens wurde die Transformationsfähigkeit landwirtschaftlicher Systeme als gering eingeschätzt, während Beteiligte in vielen landwirtschaftlichen Systemen eine Umgestaltung als notwendig erachtet haben. Ausgehend von dem differenzierten Konzept der Resilienz können die Ergebnisse den Personen mit politischer Entscheidungsbefugnis, den Beteiligten in den landwirtschaftlichen Systemen, den Verbraucherinnen und Verbrauchern und den gesellschaftlichen Interessengruppen helfen, Wege zu resistenteren landwirtschaftlichen Systemen in Europa zu finden.