

Multi-level Exchange Platforms for Biodiversity Conservation in Agricultural Landscapes

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Abstract

The loss of biodiversity continues unhalted globally. Agriculture plays a crucial role because it is both heavily dependent on the ecosystem services based on biodiversity and, with its current practices, a main driver of the loss of natural biodiversity. In Europe, the Common Agricultural Policy (CAP) plays a crucial role in shaping agricultural land use. However, despite the inclusion of environmental goals and measures, it has not been able to reverse the trend for biodiversity in agricultural landscapes. One reason for this ‘ecological ineffectiveness’ is the low uptake of environmental measures by European farmers. The project named CAP4GI was conceived to develop policy recommendations to improve the implementation of the current CAP as well as the design of future agricultural policies after the end of the current funding period. It focuses not only on ways to render measures more ecologically effective but also more economically and socially feasible for farms. For that purpose, CAP4GI takes a transformative co-design approach. The core element of the co-design is the realization of a multi-level stakeholder exchange platform process in two German federal states (Baden-Württemberg and Thuringia). In this article, we present and describe our multi-level exchange platform approach and relate our experiences from the first (out of three) years of the platform process. Additionally, we reflect on the transformative potential of this multi-level approach as well as on potential barriers to the realization of this potential.

Introduction

Despite the ambitious goals to halt and reverse biodiversity loss, this trend, with its dire yet still often ignored consequences for the survival of humankind and all other species on Earth, continues. This is true globally and, therefore, also in Europe (Rigal et al., 2023) and Germany (e.g., Hallmann et al., 2017). Here, agriculture plays a significant and challenging role. It is heavily reliant on biodiversity and ecosystem services for maintaining productivity, for example, through water quantity, quality management, or insect pollination services (Tschamntke et al. 2012). At the same time, current agricultural practices remain the major

driver of biodiversity loss and ecosystem degradation, responsible for a majority of protected habitats and species remaining in poor condition (Naumann et al. 2020; Rigal et al. 2023).

Within the European Union (EU), the Common Agricultural Policy (CAP) crucially shapes agricultural land use as it accounts for the second largest single financial mechanism in the EU budget, making up one-third of the total (European Union 2023). Introduced in 1962, the CAP was initially developed to improve food security and increase agricultural productivity. First, voluntary environmental measures were introduced in the 1980s, mainly in the form of support for income lost by implementing environmental measures in sensitive areas (Batáry et al. 2015). Through the MacSharry reform in 1992, EU member states became obliged to integrate agri-environmental schemes (still voluntary for farmers) into their policy instrument mix, aimed specifically at reducing the environmental impact of agriculture.

This approach was developed further at the end of the decade when the so-called Agenda 2000 reform established the CAP on its recognizable basis of the two funding streams or two ‘pillars’: pillar 1 as direct support to producers and pillar 2 for rural development aid, including agri-environment payments. Initially, there was a clear division between the aims of agri-environment support and measures to support agricultural production and competitiveness. This led to the criticism that the two funds were not complementary but instead competitive, one incentivizing production and the other repairing the environmental damage caused (Matthews 2008). In addition, the voluntary nature of agri-environment schemes meant that in most Member States, general uptake by European farmers was limited, so that their contribution of environmental benefits to the wider countryside could not outweigh the impacts of intensive production on biodiversity (Díaz and Concepción 2016). Thus, over the last two decades, measures have gradually been taken to converge the aims of the two parts of the CAP (through measures such as the integration of cross-compliance into pillar 1,ⁱ supplemented by the so-called Greening from 2014 – 2021,ⁱⁱ as well as eco-schemesⁱⁱⁱ and enhanced conditionalityⁱ in the latest round of CAP reform). Thus, income support payments to European farmers were tied more strongly to the provision of public goods and services.

Thus, the original CAP has experienced a number of enhancements to include environmental (and, more recently, social) goals. However, the system of the CAP itself has not changed in any fundamental way and is still very much dominated by its original goals of food security and increased productivity. In consequence, despite all efforts to adapt the CAP to encompass environmental issues, a notable recovery of biodiversity in agricultural landscapes is yet to be seen (Pe'er et al., 2020).

In practice, a great part of the CAP’s lack of effectiveness for biodiversity stems from the fact that, in general, the participation of European farmers in environmental measures is often too low to achieve the desired positive environmental and biodiversity impacts (see, e.g., Dahm 2023). Farmer uptake of environmental measures is dependent on several intertwined aspects. Despite extensive research on the different factors shaping farmer decisions to implement or not environmental measures, the intricacies of farmer decision-making depend on multiple factors and are regionally variable (Brown et al. 2021; Rommel et al. 2022). Both economic factors as well as social or behavioral aspects play significant roles and partially interact with one another when farmers decide on their participation in environmental schemes (Schaub et

al. 2023). Economic factors include the farm's dependency on productive income as well as its production intensity, which is directly connected to high opportunity costs and the profitability of implementing environmental schemes (Schaub et al., 2023; Lastra-Bravo et al., 2015). The behavioral aspects comprise a broad complex of factors such as cultural background, training, or social networks (Brown et al. 2021; Dessart et al. 2019). Due to this complexity, the political goal of increasing farmer participation in voluntary schemes faces numerous challenges (see, e.g., Schaub et al. 2023; Waş et al. 2021; Dessart et al. 2019; Lastra-Bravo et al. 2015).

The [Project CAP4GI](#) (CAP4GI = Common Agricultural Policy for Green Infrastructure), which is funded by the German Ministry of Education and Research (BMBF) within the Research Initiative for the Conservation of Biodiversity (FEaA), aims to contribute to tackling the problems of the CAP's low effectiveness to reduce or halt biodiversity loss in agricultural landscapes and the low uptake of environmental measures by EU farmers. The project intends to develop policy recommendations to improve the implementation of the current CAP as well as the design of future agricultural policies after the end of the current funding period (i.e., after 2027 or 2029). Farmers are the ones who ultimately implement biodiversity-supporting measures and deserve greater social and financial recognition for their efforts to maintain and restore public goods (biodiversity) and services (ecosystem services) (Hölting et al., 2022). Therefore, CAP4GI focuses not only on ways to render measures more ecologically effective but also more economically and socially feasible for farms.

The project applies different research methods. On the one hand, it seeks to better understand farmers' decisions through socio-economic methods (qualitative and quantitative interviews, discrete choice experiments). On the other hand, it applies a social-ecological modeling approach that simulates how different designs of agri-environmental support schemes affect farmers' decisions to implement or not biodiversity-supporting measures and how their decisions impact biodiversity in a landscape.

The aspect of the project with the greatest transformative potential is, however, its co-design approach, which is mainly realized through the establishment of exchange platforms in two federal states in Germany (Baden-Württemberg and Thuringia). The stakeholders participating in these exchange platforms are directly involved in the research, not just as research subjects in interviews and surveys but also in the design and validation of the social-ecological model, decisions about which alternative support schemes will be simulated as well as in validation and interpretation of the modeling results. More importantly, however, the participants of the platforms develop their own solutions to improving the ecological effectiveness and economic viability of agri-environmental support schemes, which are a project output of their own. A special feature of the CAP4GI exchange platforms is their multi-level design, which integrates platforms at the regional level with a larger platform at the state level.

In this article, we aim first to present and describe our multi-level exchange platform approach, including our experiences from the first (out of three) years of the platform process. Secondly, we reflect on the transformative potential of this multi-level approach as well as on potential barriers to the realization of this potential. For this purpose, we start with clarifying what co-design means in the context of CAP4GI. The following section provides a more

detailed description of the design of the exchange platform process. Thereafter, we reflect on the general transformative potential of the process and describe potential barriers that we have identified in the process so far. Finally, we conclude by summarizing the most important issues.

Co-design in Project CAP4GI

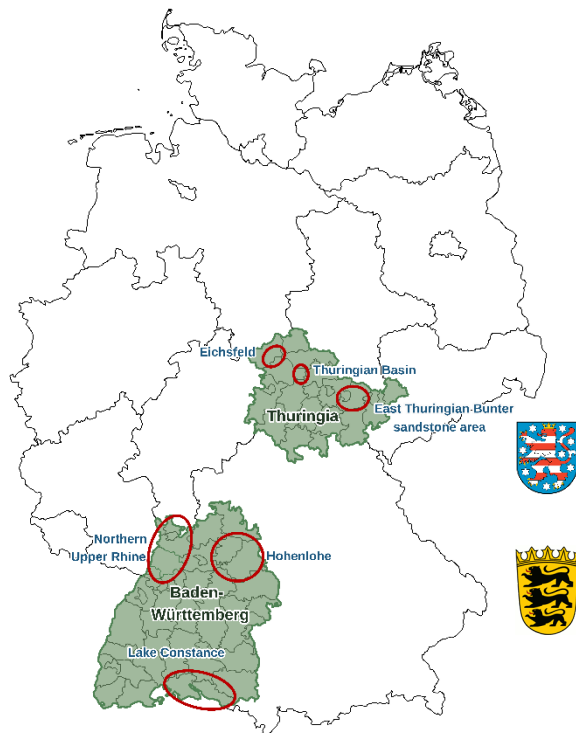
Co-design approaches have become quite common in transdisciplinary research in sustainability science (Hölting et al. 2022; Lacombe et al. 2018), yet the meaning of the term co-design varies according to the contexts (Busse et al. 2023). Often, the term is used to describe processes where non-academic actors are involved in joint problem framing and research design (Page et al. 2016). This understanding can be applied at least to some extent to the project CAP4GI as non-academic partners such as the Lake Constance Foundation, Natura 2000 station Unstrut-Hainich/Eichsfeld, and the German organization of environmental NGOs (Deutscher Naturschutzring, DNR) were indeed involved in the design and formulation of the project proposal.

Nevertheless, we use the term mainly in the sense of a “joint development of solutions for practical problems” (Hölting et al. 2022, p. 2). In CAP4GI, this means platform participants get involved in and partially shape the research of the project. The results of the research realized during CAP4GI are meant to contribute to the development of solutions to address the challenge of better biodiversity conservation in agricultural landscapes. Additionally, the project team supports the platform participants in the development of their own solutions for their own goals.

However, in the context of CAP4GI, “co-design” carries an additional meaning, which is that the platform participants make important decisions about the platform process themselves. Thus, platform participants decide, inter alia, which kind of solutions they want to work on, how and to what extent they want to involve additional stakeholders, and whether they will exchange or cooperate with the platforms of the other state.

The Stakeholder Exchange Platform Process

The CAP4GI stakeholder exchange platforms take place in six regions in two German federal states, i.e., three regions in each of the two states. In the state of Baden-Württemberg, exchange platforms are organized in the regions Lake Constance, Hohenlohe, and the northern part of the Upper Rhine area; in the state of Thuringia, exchange platforms take place in the regions Eichsfeld, Thuringian Basin, and East Thuringian Bunter sandstone area (Figure 1). These regions were chosen as they all present different patterns of agricultural land use, with the most significant difference stemming from the different historical trajectories of Baden-Württemberg and Thuringia: Thuringia belonged to the former socialist part of Germany. As a result, agricultural holdings often (but not in all cases) manage large areas of 1,000 and more hectares, which are divided into rather extensive plots. In contrast, Baden-Württemberg is a state of former West Germany. Here, farms and individual plots are usually much smaller, partially due to the historic Gavelkind inheritance system, where all land is divided equally among the heirs.



*Figure SEQ Figure * ARABIC 1: Map of regions where CAP4GI stakeholder exchange platforms are realized (source: own)*

The goal of the platform process is to support the participants in developing their own regional solutions to improving the ecological effectiveness and economic viability of agri-environmental support schemes. The meetings are organized by two different institutions: In Baden-Württemberg, the platform process is carried out by the Lake Constance Foundation, and in Thuringia, by the Natura 2000 station Unstrut-Hainich / Eichsfeld. Both organizations cooperate closely, with further expertise from Adelphi research, to align the design and organization of the platform meetings in both states. However, there are still some differences in approach, necessitated by the differences in conditions and participants.

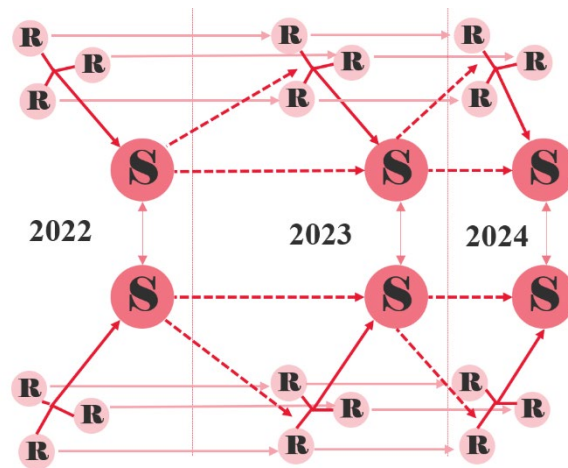
As mentioned before, CAP4GI takes a multi-level approach to the platforms. This means platform meetings take place both at the level of the six regions (regional platforms) and at the state level (state-level platforms), with each platform having one meeting per year (Figure 2). In each state, the regional platforms send representatives to the state-level platforms, who then report back to the regional platforms at the following meeting. Additionally,



Thuringia



Baden-Württemberg



interlinkages between the two state-level platforms are possible – if deemed meaningful by the participants.

Although various aspects of the platform process are in the hands of the participants themselves, some degree of guidance is needed to guarantee that the process will produce a meaningful output at the end. Therefore, the meetings follow a rough plan for the contents of the different stages of the process: In the first year of the process, overall problems

Figure SEQ Figure *ARABIC 2: Structure of the CAP4GI multi-level stakeholder exchange platform process, R stands for regional platforms, S for state-level platforms (source: own)

hampering the implementation of environmental measures in agricultural areas are collected. This provides the basis for the development of regional approaches to improving the implementation of biodiversity-supporting measures funded through the CAP^{iv} in the second year. In the third year, an action plan will be developed to facilitate follow-up and implementation of the developed regional solution approaches.



Figure 3: Typical agricultural landscape in Thuringia with low structural diversity (source: Guy Pe'er)

Additionally, before the first platform meetings, the project team conducted scoping interviews with farmers from the different regions to create a first overview of problems with the implementation of environmental measures and the topics farmers would like to see

addressed at the platform meetings as well as suggestions about which other types of stakeholders they would like to see involved.^v

The exchange platform process started out with only farmers from the six regions, with a planned number of about ten participants for each regional platform and around twenty participants for the state-level platforms. To gather participants, different strategies were pursued, including the distribution of calls for expressions of interest in relevant local print media or through farmer associations. Participants receive a compensation payment for their participation, too. The most effective strategy proved to be the individual calling, starting from contacts that were already known to the Lake Constance Foundation and the Natura 2000 station in Thuringia through their previous work. The project plan foresees a further increase and diversification of the groups of participants along the process. Apart from the project partners organizing the platform meetings, additional members of the project team (researchers, coordinators) frequently participate in the platform meetings.

The first round of regional platform meetings took place in September 2022 in Thuringia and in January and February 2023 in Baden-Württemberg. Although eight to eleven interested farmers per region were found, due to various short-notice cancellations, the number of farmers who actually participated in the first regional platforms ranged from four to six.



*Figure SEQ Figure * ARABIC 4: Impressions from one of the regional platform meetings in Baden-Württemberg (right side, source: Lake Constance Foundation) and the first state-level platform meeting in Thuringia (left side, source: Greta Theilen)*

Despite the small number of participating farmers, a wide range of farm types is represented at the platforms: Big and small farms (ranging from 22 to (rather exceptional) 2650 ha in Baden-Württemberg and 15 to more than 1,000 ha in Thuringia); family businesses, partnerships and legal entities; farms run on regular and side-line basis; conventional and organic farms; dairy cow, suckler cow, fed cattle, pig, sheep, goat and poultry keepers; biogas producers; arable and grassland farms; farms pursuing (solely or partially) pomiculture, horticulture, viticulture, and hop cultivation; farms with or without a conservation branch.^{vi} Due to the diversity of the sectors and the participation of different regions in two states with

very different agricultural structures, we believe that the main issues of most agricultural groups have been included.

Following the rough plan for the contents of the meetings, at the first regional platforms, farmers' insights into the factors hampering the implementation of existing environmental measures were collected through discussions with the participants, and the most pertinent ones identified (each participant could distribute two votes to the previously collected barriers). Additionally, most of the regional groups defined a goal/mission statement, which, however, remained rather broad. For instance, at the regional platform at Hohenlohe, the following aim was defined: “[Development of] demands for the design of measures in step with practice where agriculture and nature conservation are considered together and both sides profit.” The main challenges identified by the participating farmers were rather similar in all six regions and included low/unattractive compensation payments, too little flexibility in the implementation of the measures, very bureaucratic processes to apply for measures and payments, etc.

Although the number of participants in the regional platforms was lower than initially expected, at both state-level platforms, all regional platforms were represented by two to four members. At the state-level platforms, results from the regions in each federal state, as well as overall results from the other states, were presented and discussed. At all regional platforms, participants indicated a strong interest in alternative environmental support schemes. Therefore, at both state-level platforms, external experts were invited to present and discuss the Common Welfare Premium (Friedrich and Metzner 2020)^{vii} and the collaborative model of the implementation of agri-environment-climate measures (AECM) (DVS 2023).^{viii} In the end, farmers were asked to discuss the advantages and disadvantages of both models and to indicate which of these alternative models (if any) they found attractive.

Transformative Potential of the Multi-level Exchange Platform Process

Tackling complex and life-threatening global trends such as climate change and biodiversity loss requires fundamental social and technological transformations of the systems underpinning society and involved in the causation of these trends. Here, we apply the term transformation with the following meaning: “a change process that aims at fundamental change of a system’s form, structure, function and purpose” (Moser 2016, p. 107).

However, despite all merits and important knowledge produced by traditional research, it has not been sufficient to foster the necessary, fundamental societal change. There are many reasons for this, for example, the usual approach to address problems through the lens of single disciplines, which does not live up to the complexity and interdependency of societal challenges (Schneider et al. 2019). Therefore, it is frequently argued that to understand how transformations can be brought about, much more research that directly engages with practical domains is needed (Fazey et al. 2018). Here, so-called second-order transformation research plays a crucial role: First-order transformation research mainly attempts to improve knowledge about and understanding of change processes and disseminates its final results and outputs to stakeholders through knowledge transfer. In contrast, second-order transformation research attempts to create change from within the system of interest and directly involves stakeholders in the creation of knowledge and solutions. Rather than just aiming to better

understand problems, second-order transformation research “explicitly focuses on practical solutions of real-world issues” (Fazey et al. 2018, p. 60).

Thus, part of the transformative potential of the CAP4GI project is rooted in its design, which can be considered to fall more into the domain of second-order transformation research as it presents many (but not all) aspects that characterize this kind of research (Table 1).

Table 1: List of characteristics of second-order transformation research (according to Fazey et al. 2018) that are met by project CAP4GI.

| Research characteristics | Likely expression in second-order transformation research | (Planned) ways in which these characteristics are met by CAP4GI |
|---------------------------------|---|---|
| Aim | Both improving understanding of, and contributing to, change. | CAP4GI aims to better understand farmer decisions and impacts of the design of environmental support schemes in agriculture on biodiversity. These results are supposed to contribute to change and improve the current agricultural policies for environmental support. In addition, the project supports stakeholders in the development of concrete approaches to improve the implementation of environmental measures in the six CAP4GI case study regions. |
| Validity and rigor | Assumed to come from researchers actively engaging in doing and learning from change and where practitioners are involved in the process of research. | Farmers (and other stakeholders) are involved in the research; at the same time, the project team is involved in the process of developing approaches to improve the implementation of environmental measures. However, the researchers also apply traditional notions of validity and rigor in their work. |
| Embeddedness | Research is conducted from within the subject of study, with the recognition that researchers are one of many actors in the process of change. | CAP4GI identifies and addresses day-to-day farmer problems with the implementation of biodiversity-supporting measures. The project comprises outputs mainly produced by researchers and outputs mainly produced by stakeholders. However, the processes of the creation of these outputs cross-fertilize each other. Additionally, all of these outputs will be integrated into the production of the final policy recommendations. |
| Knowledge of researchers | Greater tendency to assume that researchers are not always in the best position to know | Practitioner knowledge is integrated into the CAP4GI research, especially the CAP4GI social-ecological modeling, which is partially shaped and validated by the exchange platform participants. On the other hand, the CAP4GI researchers take |

| | | |
|---------------------------|---|---|
| | <p>what knowledge is needed and that there is a need to learn from doing practice and/or from involving practitioners in shaping the research.</p> | <p>part in and contribute to at least some of the platform meetings to bring scientific knowledge and understanding into the practitioner-focused platform process.</p> |
| Framing | <p>Needs of society (i.e., social or environmental improvement) frame the research rather than (just) needs of research (such as knowledge production).</p> | <p>First and foremost, CAP4GI aims to contribute to tackling the important societal problem of biodiversity loss in agricultural landscapes. For that purpose, CAP4GI also produces better knowledge and understanding of relevant processes (farmer decisions and impact of environmental support design on biodiversity).</p> |
| Dominant mode of research | <p>May be more purposive, participatory, action-oriented, dominated by pragmatism and radical constructivism</p> | <p>CAP4GI applies more analytical, deductive, and participatory, action-oriented research.</p> |
| Sharing of knowledge | <p>Active engagement of researchers in practice and practitioners in research enhances uptake of findings and learning. Greater emphasis on conversation and exchange, rather than communication and dissemination.</p> | <p>CAP4GI pursues both conversation and exchange (especially with stakeholders in the six case study regions and the two federal states on which the regions are located) and broad communication and dissemination (to reach the scientific community as well as decision-makers at national and EU level).</p> |
| Learning | <p>Application of action research can result in learning by both researchers and practitioners and practical 'know-how' is less</p> | <p>Exchange platform participants are generally very interested in the results of the CAP4GI research. At the same time, the researchers and overall project team are very keen to learn about problems, challenges, and solutions of the stakeholders to be able to create relevant and</p> |

confined to
practitioners.

appropriate policy recommendations at the end of
the project.

Apart from CAP4GI following second-order transformation research principles, the project and especially its multi-level co-design approach have the potential to support transformative change in additional ways: For one, the exchange platform process gives farmers a voice (Hölting et al. 2022) and an opportunity to bring in their knowledge and experience. Farmers are the ones who have detailed knowledge about the land they manage and who ultimately carry out (or not) environmental measures on the ground. Yet, they have until now been consulted to a surprisingly limited degree in the development of agri-environmental measures. Instead, farmer associations have been involved in the formulation of policies and concrete measures, but they do not necessarily represent genuine farmer interests (Bărbulescu et al., 2023).

In that vein, the multi-level design of the process offers specific advantages: Locally relevant and adapted solutions can be developed by farmers at the regional platforms. The additional platforms at the state level offer the possibility to reflect these proposals developed at the regional level with a greater range of stakeholders and thus integrate a greater diversity of views and considerations. Additionally, it is more likely that relevant administrative decision-makers, who are often located at higher administrative levels, will participate in a state-level platform than in a regional platform meeting. Therefore, state-level platforms offer a realistic chance to present regional proposals to decision-makers and integrate their considerations into the further development of solutions. We assume that this direct interaction with decision-makers and the inclusion of their considerations may elevate the relevance of the farmers' ideas and the fit of the developed solutions to the administrative landscape, thus increasing the chance of their uptake.

Another advantage of the multi-level design of the exchange platform process is that it has the potential to tackle the trade-off between the broad involvement of different kinds of stakeholders and the power imbalances between participants that may arise from this: At the regional platforms, mainly farmers participate, and thus the regional platforms offer a kind of a safe space for them. Farmers often feel framed as scapegoats in the public debate and, therefore, easily feel cornered by other societal groups. At the regional platforms, they have a space to freely voice their concerns and ideas without the “risk” of being immediately criticized.

Having this “exclusive” forum at the regional level is also important since there already is a considerable degree of heterogeneity between farmers as they differ on various spectra (small – middle – large farms, conventional – integrated – organic management, cropland – mixed – grassland farming, etc.). Thus, concentrating on farmers first allows the building of trust and common ground among this diverse group before bringing in additional views and concerns of other stakeholders.

The diversity of knowledge, interests, and views can be increased at meetings later in the process and at the state-level platforms through the inclusion of different kinds of stakeholders. Although the final decision on the inclusion of additional participants lies with

the initial participants, the project team incentivizes participants to include a greater range of stakeholders to ensure a greater diversity of views throughout the process.

Finally, the platforms are an opportunity to bring together different stakeholders to create solutions that better meet the needs of all stakeholders and thus improve biodiversity performance in the future. The project could thus be one building block on the way to a time where transdisciplinary communication and problem-solving are habitually integrated into addressing difficult topic areas.

Of course, it cannot be taken for granted that the project and the platform process will be implemented seamlessly as planned. The same goes for the actual realization of the entire transformative potential of the process. There are indeed a great number of barriers that can thwart the whole effort altogether.

Potential Barriers to Realizing Transformative Potential of the Multi-level Exchange Platforms

The transformative potential of the exchange platform process can be hampered by numerous barriers. Here, we provide an overview of the potential barriers that we have identified so far, discuss whether and which ways they have played out in the platform process, and describe the ways in which we have addressed or plan to address them, where necessary.

Potential barrier: discontinuous participation

Especially in the case of our multi-level and multi-stage process with few meetings each year, keeping the participants in the process over its whole duration is a great challenge. This is exacerbated by the type of participants this process focuses on in sectors like agriculture. It is very likely that some people will not be able to attend due to urgent work needs that cannot be postponed. The meetings are usually scheduled in late autumn or winter, which are less busy for farmers. Nevertheless, participants have had to cancel on short notice.

The project staff made all efforts to enlist around ten participants for each regional platform, while the absolute minimum required number of participants is around five. This way, the absence of some of the participants does not thwart a whole meeting. Additionally, the project team helps the participants bridge their unplanned absence by keeping in contact with them on a regular basis, requesting their input on occasions other than just at the meetings, and starting the meetings with a summary of what has happened at the previous meetings.

Potential barrier: Lack of motivation and opposing attitudes

A lack of motivation, which is often caused by attitudes contrary to the overall goals of the process or by stakeholder fatigue (or both), can be another cause for discontinuous participation and can critically hamper the participants' commitment to the process. As revealed in the scoping interviews and at the first platform meetings, the attitudes of the farmers towards nature conservation range from skepticism (Do we need conservation measures? Are the existing measures effective?) to pragmatism (Which measures are effective

and cost-efficient? How can farmers and nature conservationists work well together?) to endorsement (How can farmers support nature conservation projects?).

Likewise, the motivation of the farmers for participating in the project shows a broad spectrum ranging from reservation (feeling the obligation to respond to social concerns) to commitment (wishing to help implement sustainable development). However, the majority of the participants have been motivated to achieve improvements in their 'biodiversity performance,' being well aware of the value of nature and natural processes, but also of societal expectations. Nevertheless, the project staff attempts to do justice to the various views and expectations of the participants and to satisfy and sustain their interest over the entire project duration.

Some farmers already suffer from stakeholder fatigue from previous experiences with often rather tokenistic consultation and engagement formats or are disappointed by politics. Thus, they do not want to waste their time in meetings they think will not change anything. To address this barrier, the project team factored in enough time to find participants and provide information to them through different channels like newspapers, professional journals, union newsletters, etc. Especially personal contact to explain the nature and aims of the planned process proved to be of crucial importance.

Potential barrier: Limited uptake and impact of the process outputs

One argument inciting the motivation of the participants has been that the process offers them the opportunity to voice their concerns. According to the perception of the participating farmers, appreciation of their work by society has declined significantly over the past years. They feel that their voice is not heard sufficiently in public and that the media often draws an incomplete and distorted picture of their activities. The great majority of farmers are not opposed to conservation measures but are frustrated about the huge number of rules and regulations imposed on them by CAP requirements and are dissatisfied with the currently available AECM. The farmers participating in the project, therefore, appreciate the opportunity to voice their concerns and suggestions at the project platforms and transfer them to relevant authorities.

In consequence, the project team has the responsibility to make the voices of the participants heard so as to not have the process turn into yet another disappointing and tokenistic exercise. For that reason, CAP4GI pursues a specific communication strategy specifically targeted to reach decision-makers at the state, national, and EU levels in order to increase the political visibility of all project results, including the outputs of the platform process, and thus chances of project findings actually being integrated into political decisions. Additionally, the project team makes transparent the scope of its influence: Time and again, the project staff points out that they do everything to communicate the process outputs effectively to decision-makers, but due to a myriad of influencing factors, they cannot guarantee that any of the participants' suggestions will, in fact, be integrated in political decisions.

Indeed, the meaningfulness and generalizability of the expected process outputs have already been questioned by administration representatives. As a qualitative process, the exchange platforms do not include representative samples of farmers and thus do not produce

statistically relevant results. There is a certain risk that the outputs of the process will not be accepted on these grounds.

However, the challenges in implementing (more) biodiversity measures identified in the different regions and states were very similar despite the differences in sectors, agricultural structures, and farm sizes. We hope that this similarity of views on pertinent challenges despite all differences between the regions and participants, as well as the planned direct involvement of administration representatives, will support the validity of the outputs in the eyes of decision-makers.

Potential barrier: Conditions hampering mutual learning

Overall, there seems to be high potential for mutual learning in the platform process as the participants view the project platforms as an opportunity to exchange ideas and experiences and to clarify open questions with other farmers, nature conservationists, and scientists in order to reconsider and improve their farming practices and farm management. Indeed, the participants have been keen to bring in their knowledge and experience. They frequently pointed out that many AECM schemes were not developed together with farmers and, therefore, do not fit into their operational processes. They see the platform process as one way to contribute to better designed AECM. Notably, their involvement has already yielded some surprising findings: The collaborative/Dutch model of implementing AECM is being promoted as a promising alternative model of agri-environmental payments both in the scientific and political debate (e.g., Westerink et al. 2017; Reichensperner et al. 2023; Alblas and van Zeven 2023). In contrast, participants of both state-level platforms in Thuringia and Baden-Württemberg were rather reserved towards this possible alternative.

There are several aspects that can support or hamper the learning process in such a participatory setting, depending on whether they are planned for and carried out in an appropriate way or not. One aspect that turned out favorably in the case of our exchange platforms is the size of the different groups: Four to six actual participants turned out to be a good and suitable size for the purpose of the platform meetings. Everyone was able to express their thoughts without disruption or time pressure. Also, rather reserved participants could be heard and did not get lost among louder and more self-confident characters. Thus, it might not be sensible to follow the initial plan to further increase the number of participants in the regional platforms, except if stakeholders other than farmers are to be included.

This points to another crucial aspect: group composition. This aspect shows two sides in the case of the exchange platforms: On the one hand, participants showed openness regarding the involvement of other stakeholders. This can increase the diversity of knowledge, experience, and perspectives in the discussion and will likely lead to more balanced and better-accepted process outputs with a higher chance of uptake. In concrete terms, the participating farmers indicated that they would welcome the involvement of additional groups: a) Nature conservation representatives: farmers recognize that biodiversity conservation can only work if both agriculture and nature conservation understand each other and work together; b) administration: it is necessary to get decision-makers on board to obtain solutions that also work in administrative terms. It is also an urgent wish of the participants to get administration representatives to understand farmers' needs.

On the other hand, although we do observe differences in the attitudes and motivations of the participants, the issues addressed by the platforms likely attracted mainly farmers with according mindsets and background interests. While this may lead to a smoother process due to lower conflict potential, it also means a narrowing down of perspectives and the possibility that important critical voices and arguments are not being considered. This may hamper the potential for mutual learning.

One way to attenuate the latter is to create a constructive atmosphere and a safe space where everyone can express themselves without fear of interruption and with the certainty of being treated with respect, especially if they voice more critical perspectives that are less in line with the views of the rest of the group (and these critical perspectives do exist in the different groups, albeit in smaller numbers). For that purpose, the project team members who moderate the meetings set up rules for communication (Marsden et al. 2023), gently quiet down more dominating characters where necessary, and design exercises that also draw out shy individuals.

Potential barriers related to the design of the process

Last but not least, some barriers can already be carved in stone through limitations in the design of the process. In some cases, these barriers can still be addressed, and the process can be changed accordingly. In other cases, this is not possible, for example, because of budgetary constraints or because the process has been described in the funding agreement of the project in a certain way that cannot be changed anymore.

A potential barrier in the design of the exchange platform process is the limited time of only three meetings for each platform, in combination with a very complex subject and the aim of developing a relevant and feasible solution within the time. It would certainly be better to have more and more frequent meetings to explore issues more deeply, to build more trust among the participants, and to allow for the development of more creative solutions. On the other hand, farmers have limited availability, especially during growing season, and it could, therefore, be difficult to engage them in a process with more meetings.

One approach of the project staff to deal with the limited time is, for example, to clarify or elicit some issues before or after the actual meeting. For instance, in the next round of regional meetings, the participants will discuss and work out possible solutions to the problems that were identified during the first round. As there is a great variety of possible types of such solutions, a decision will have to be made about which kind of solution the participants want to work on. Instead of taking this decision during the meeting, the Lake Constance Foundation surveyed the participants beforehand regarding this point. Thus, the time that would have been needed to reach a decision on this issue during the meeting will now be available to engage in deeper discussions about a concrete solution.

The lack of explicit reflexive monitoring mechanisms (Knickel et al. 2019) in the design and consequently in the budgeting of the project and the platform process poses an additional challenge. The organizers of the platform meetings collect feedback from the participants and

adapt the process accordingly. However, a more systematic approach to reflecting and adapting the process could have further improved it.

The openness of the process is an advantage as it allows adaptation to the actual needs of the participants, but it has also been somewhat overwhelming for the farmers. The freedom to work on a topic of their own choice without further specifications was unfamiliar. It also challenged the facilitators to prepare a workshop day with just a rough outline. Specific methods are needed to bundle the wishes of the participants and find a common goal to work on. The open process in the frame of an overarching topic has to be explained from the outset so that the project does not appear to be too undirected and irrelevant.

Conclusion

This article presents the exchange platform process of the project CAP4GI. In this process, mainly farmers but also other stakeholders in six regions in two federal states are involved in a multi-level process, with the aim to develop regional solutions to address the challenge of better biodiversity conservation in agricultural landscapes. We discuss the transformative potential of this process as well as potential barriers to the realization of this transformative potential. At the time of publication, the second round of regional platforms is being carried out. This round of meetings is crucial as their aim is to develop regional approaches or suggestions for more ecologically effective and economically feasible environmental measures.

The agricultural sector is both a main driver and a main sufferer of biodiversity loss, which is one of the two major crises humanity and all life on Earth are facing. At the same time, the current agricultural practices are still predominantly oriented towards the goals of food security and productivity. The same goes, at least in the EU, for the Common Agricultural Policy, despite various reforms aiming to better integrate the goal of environment conservation. Thus, fostering a transformation of the agricultural sector and its policy framework is especially important.

A great part of the lack of effectiveness for biodiversity conservation of EU agricultural policy is rooted in the insufficient uptake of environmental measures by farmers. This, in turn, is partially caused by the marginal genuine involvement of farmers in the formulation of these policies and measures. The presented platform process has the potential to contribute to better biodiversity conservation in agricultural landscapes and to contribute to transforming agricultural policy by providing an opportunity to bring together different stakeholders to create solutions that better meet the needs of all stakeholders. This can increase uptake and therefore improve biodiversity outcomes and therefore improve biodiversity performance of the agricultural sector in the EU in the future.

The CAP4GI exchange platform features specific advantages due to its multi-level design, which can enhance its transformative potential. At the regional level, mainly farmers participate in the meetings. Thus, the regional platforms offer a safe space where farmers can build trust among each other, freely exchange about, and develop their approaches to achieving better biodiversity outcomes. The state-level platforms offer the chance to reflect the regional solutions with a greater diversity of views as well as a realistic chance to involve

decision makers and to directly interact with them. This may increase the chance of uptake of the developed solutions or at least of the underlying arguments.

Nevertheless, we have identified a diversity of barriers that can hamper the transformative potential of the process, some of them posing greater risks to the process than others. Potential barriers include

- Discontinuous participation throughout the whole three-year process (This is especially pronounced in the agricultural sector, where unexpected urgent work needs appear quite often)
- Stakeholder fatigue, lack of motivation, and attitudes opposing the goals of the process
- The risk of limited uptake of the process outputs
- Factors hampering mutual learning, such as inappropriate group size and composition
- Limitations in the design of the process

We hope that the insights into the CAP4GI exchange platform process provided here may inspire other (multi-level) exchange processes, be it in agriculture or in other areas. We also hope that this article will support the design of other processes to be aware of and adequately address the potential barriers to the transformative potential of such a process.

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ⁱCross-compliance means that in order to receive EU income support, farmers must respect a set of basic rules. Rules farmers are expected to comply with include a) statutory management requirements (apply to all farmers whether or not they receive support under the CAP) and b) good agricultural and environmental conditions (apply only to farmers receiving support under the CAP) (European Commission 2023a). Since the latest CAP reform, farmers wanting to receive income support payments need to adhere to a stronger set of mandatory requirements (enhanced conditionality). For example, on every farm, at least 3% of arable land is dedicated to biodiversity and non-productive elements; wetlands and peatlands are also protected (European Commission 2023c).

ⁱⁱThrough the so-called Greening, a part of the CAP pillar 1 income support payments to the farmers were tied to certain conditions. Participation was voluntary but to receive these payments, farmers needed to comply with three mandatory practices: crop diversification, maintaining permanent grassland, and dedication of 5% of arable land areas beneficial for biodiversity (e.g., trees, hedges, land left fallow) (European Commission 2023b). These conditions were the same for farmers in all EU Member States.

ⁱⁱⁱIn the latest CAP reform, eco-schemes replaced the previous Greening measures. They are thus another type of measure to reward and incentivize farmers to take action towards more sustainable farm and land management with the ultimate goal to conserve and provide public goods. The participation for farmers is voluntary. Eco-schemes offer more flexibility compared to the previous Greening payments as Member States design the eco-schemes according to their environmental and climate needs on a national and regional level (Eurostat 2023).

^{iv}There is a variety of biodiversity-supporting measures which are funded through CAP. The measures funded through the eco-schemes (pillar 1) are the same across Germany. They include set-aside of arable land, flowering strips/areas, crop diversification, agro-forestry, extensive grassland management, proof of at least four indicator species typical for the region, no use of synthetic pesticides, sensitive management of areas of the Natura 2000 network of protected areas (Landwirtschaftskammer Nordrhein-Westfalen 2023). Agro-environmental-climate measures (AECM; pillar 2) differ between the federal states of Germany. Some examples of such measures in Baden-Württemberg and Thuringa are organic agriculture, use of natural pest control methods, cover crops, protective strips, management of meadows with fruit trees and many more (Infodienst Landwirtschaft - Ernährung - Ländlicher Raum 2022; Thüringer Ministerium für Umwelt, Energie und Naturschutz 2022).

^vTo avoid repetitiveness and overuse of the farmers' generally scarce free time, scoping interviews were not held as own interviews. Rather, the scoping questions for the platforms were included into the qualitative interviews for the socio-economic research of CAP4GI.

^{vi}“Farms with a conservation branch” means farms earn income through the implementation of landscape management and conservation measures as a service, not just on their own land but also on areas of different owners.

^{vii}The Common Welfare Premium (Gemeinwohlprämie) was developed by the German Association for Landcare (DVL). In this alternative model, a catalog of environmental measures is defined, and for each measure, farmers earn a certain number of credits for each hectare in which they apply the measure (e.g., 10 credits per ha flowering strips). Each credit is compensated by a fixed amount of money (e.g., 50 EUR per credit). The system includes a diversification bonus if farmers opt to implement a certain minimum number of different measures.

^{viii}The so-called Dutch model is based on the collective coordination of, consultancy about, and application for agri-environmental measures by collaboration of several farms, instead of the current system where each farm applies for measures itself. This model has already been implemented for some years in the Netherlands and a number of pilot projects are testing its applicability in Germany.