

Agriculture in focus and conversation: Recording the experiences of farmers with environmental and climate policy measures using “Photovoice” and interviews

Abstract

The decarbonization of our society and restoration of nature requires comprehensive, extensive and ambitious policies. To successfully implement these policies, it is important to understand public responses to them. One high emitting and environmentally relevant sector is the agricultural sector that would therefore be disproportionately affected by ambitious policies. To gain a better understanding of farmer’s beliefs, perspectives and opinions about climate and environmental policies, a photovoice study and interviews were conducted among farmers in Austria.

The findings suggest that farmers face challenges with the current and anticipated environmental and climate regulations, which affect their daily operations and long-term planning. However, it is also, or maybe mostly the structural underpinnings of the field that hinder the acceptance and implementation of environmental and climate policies, signaling that future policy measures could face resistance if they do not address these underlying issues. For this, policy-level analyses alone are not sufficient.

The method itself allows for a collaborative effort to convey findings to policymakers, leveraging the holistic insights provided by both photovoice and interviews. Moreover, it is proposed that integrating media professionals into the process could enhance science communication and foster understanding between societal groups. Overall, the study serves as a reflection on the methodological journey and presents insights that can inform both research and political decision-making.

Introduction

The decarbonization of our society requires comprehensive, extensive and ambitious, yet also just and equality-oriented climate change mitigation policies (Markkanen & Anger, 2019). While it is likely that the net-positive effects of a transition will predominate in the aggregate and the medium to long term (Green & Gambhir, 2019), carbon lock-ins in (i) technology and infrastructure, (ii) governance, institutions and decision-making and (iii) behaviors, habits and norms make rapid change difficult (Seto et al., 2016).

The transition to a low-carbon economy impacts many areas, considering the significance of our food system for our survival and wellbeing, it is not surprising that the latest book of the Club of Rome, “Earth4All”, singles out “Making the Food System Healthy for People and Planet” as one out of five crucial turnarounds (Dixson-Declève et al., 2022). The book also discusses solutions and divides them into three areas. One focused on the production side, more specifically the way we farm, the second one on the consumption side, with an appeal to changes in our diets, and the third one addresses the elimination of food loss and waste, which considers both, production and consumption.

The following work focuses on the production side, the agricultural sector of our economic system. Decarbonizing agriculture is and will be a huge challenge, as it is highly affected by the three initially mentioned categories of lock-ins, while being a highly emitting sector that conducts extensive environmental interventions. In 2023, agriculture accounted for 1,5% of the European Union’s (EU) GDP (eurostat, 2024), while at the same time contributing to more than 10% of the emitted greenhouse gases (GHGs) (European Commission, 2023). In addition, EU farms used and therefore altered around 38% of the total EU land area in 2020 (eurostat, 2022).

This means that the agricultural sector is and would be highly affected by extensive, ambitious and comprehensive climate and environmental policies, both directly (e.g. through changes in farming practices) and indirectly (e.g. through changes in consumer’s diets or general food waste behaviors).

Having the disproportionately high reliance on fossils of the agricultural sector in mind, it is not surprising that in December 2023 the announcement of the German agricultural minister to cut tax subsidies for agricultural diesel and agricultural vehicles in a broader effort to plug the German budget deficit, tipped farmers into widespread protests. These also erupted among European farmers in other countries with main issues being a EU trade agreement with Latin-American countries (Mercosur) and dissatisfaction with bureaucracy and environmental regulations on top of an acceleration of changes induced by the war in Ukraine and EU agricultural policy of the last years in general (Wikipedia, 2024; ZEIT ONLINE, 2024).

In Austria, specifically the EU regulation on the restoration of nature was the subject of widespread debate. It was proposed by the EU Commission on June 22, 2022 and led to heavy discussion and resistance in some European countries, including Austria (Wikipedia, 2024). Numerous public debates and a controversial decision by the Austrian environmental minister that endangered the governmental coalition show that the sector has political and discursive power (DerStandard, 2024).

The seemingly contradictory situation where agriculture relies heavily on weather patterns—and thus on efforts to combat climate change—yet often resists environmental and climate regulations, led me to examine this paradox more closely. I initially chose the method of photovoice that seeks to engage with underrepresented voices and facilitate a mutual learning process between researchers and people concerned by the research question. Later I shifted to

interviews, built on top of knowledge achieved by the photovoice trial, due to its lower complexity and the researcher's time constraints.

The initial research questions were as follows:

- What climate and environmental policies or subsidies already concern farmer's work today?
- What problems or challenges of these environmental and climate policies are most prevalent for farmers?
- What policies are expected in the future and what problems or challenges are mentioned in this context?

After a first data analysis and more in-depth literature review, the following research questions were added:

- What themes or topics are discussed in relation to climate and environmental policies that indicate challenges in the structural foundations of the agricultural sector?

The paper is further structured as follows. First, the research procedure and methodology are explained in more detail, as an emphasis of my work and presentation at the Momentum Kongress is put on the methodology and the research process. Next, results are presented with a distinction between policy-level and structural-level findings. The results are also briefly discussed within the same section. Before reaching the conclusion, reflections on and a discussion of photovoice and my vision for it is formulated.

Methodology

The research underlies some changes in requirements, goals and task definition. It was born from a university class, thought to be expanded to a master thesis, but a change in topic led it end up to be a private project for the Momentum Congress. Therefore, it does not follow a fully stringent approach, but should be seen as a learning process. It started with a photovoice approach that was later supplemented by interviews due to time constraints. In the following, the theory behind photovoice, its application in practice and constraints will be outlined, as well as the further research conduct.

Photovoice

"Photovoice" is a participatory research method that uses photography and storytelling to empower individuals and communities to identify, represent, and address issues that are of concern to them. It is a process through which people, often those with limited power due to poverty, language barriers, race, class, ethnicity, gender, culture, or other circumstances, can express themselves and communicate their needs, desires, and concerns to scientists, the wider community and policymakers (Strack et al., 2022; C. Wang & Burris, 1997).

Originally developed by Caroline C. Wang and Mary Ann Burris in the 1990s, the Photovoice process typically involves providing cameras to individuals or groups in the community, often those who are underrepresented or marginalized, and guiding them to take photographs that capture aspects of their lives, experiences, and communities (Strack et al., 2022; C. Wang & Burris, 1994). Wang and Burris (1994, p.171-172) describe the goal of photovoice as to "use people's photographic documentation of their everyday lives as an educational tool to record and to reflect their needs, promote dialogue, encourage action, and inform policy. It does not entrust cameras to health specialists, policymakers, or professional photographers, but puts

them in the hands of children, village women, grassroots community workers, and other constituents with little access to those who make decisions over their”.

During the process, participants – or as they are sometimes called in recent works – co-researchers (Surchat et al., 2024) are encouraged to discuss and reflect on the meaning behind their photographs, often in group settings “to cultivate people’s ability to take individual and collective action for social change” (Wang & Burris, 1994, p.177). Finally, another important, yet sometimes neglected aspect of the method would be to engage in advocating for changes in policies and practices that affect their own and their community’s lives (Derr & Simons, 2020). Since its development, photovoice has been used in public health, community development, and social sciences as a bottom-up approach to engage communities (Derr & Simons, 2020).

The method’s founders thoroughly based photovoice in theoretical background from feminist theory, documentary photography and Paulo Freire’s critical pedagogy, or as the method’s founders Wang & Burris (1997, p.370) termed it “education for critical consciousness” (Derr & Simons, 2020; Strack et al., 2022). Freire’s philosophy emphasizes the role of education in promoting humanization, critical thinking, and social justice, with a focus on empowering marginalized communities to participate actively in the transformation of their own lives and communities. As a pedagogue, he advocated for cognitive acts, instead of transfers of information, trust in people and in their creative power to allow mutual learning and liberation processes (Freire, 1970).

Further, the authors also emphasize the method’s grounding in practice and name the efforts of community photographers and participatory educators, as well as their own experience in communicating and applying the process as two further main sources for the development, besides the aforementioned theoretical literature (C. Wang & Burris, 1994, 1997).

As mentioned in the introduction, protests among European farmers beginning in December 2023 sparked the idea to investigate farmer’s opinions, thoughts and lived realities on site. Photovoice offered a co-learning process, where local citizen are considered experts within their communities, and the method’s openness to results allows the local citizens to co-determine the focus of the outcome (Derr & Simons, 2020). As it is rooted in feminist theory, the initial goal was the involvement of young women in rural areas. Leveraging visual media and participatory discussions, the approach aimed at voices of individuals often marginalized in decision-making processes.

My application of Photovoice

The anticipated procedure can be seen in Figure 1 and consists of the preparation of the procedure and an explanation paper. Ideally, a first meeting in person to explain the steps again was aimed for. Next, the participants were given time (4-6 weeks) to take photos and prepare short prompts. On the basis of these, the researcher could prepare for the following interviews. For those, the PHOTO approach was chosen that seeks for asking the following questions on the basis of the photos (Hergenrather, 2009):

1. Describe your **P**icture.
2. What is **H**appening in your picture?
3. Why did you take a picture **O**f this?
4. What does this picture **T**ell us about your life?
5. How can this picture provide **O**pportunities for us to improve life?

Finally, the retrieved data should be analysed with an inductive thematic analysis.

The initial focus of the project lied on young female farmers with young kids (0-6 years) in a certain area in Austria (Mostviertel). In a first round, four farmers were approached, the

procedure was explained with an explanation paper and partly personal contact. The following questions were asked

What are the main problems and particular challenges of ambitious environmental and climate policies for farmers in Austria already today?

What problems or challenges could arise in the future?

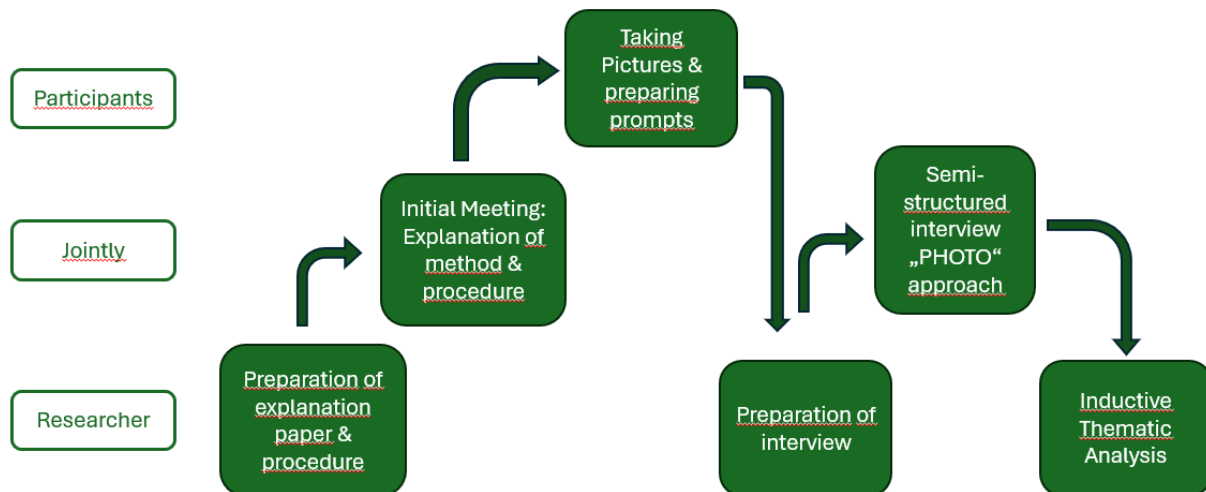


Figure 1: Initially anticipated procedure; finalized with participant 1

However, certain challenges arose, one of them being the time constraints faced by young women with children and the high flexibility needed due to weather dependency in the agricultural sector. In the first patch, 3 out of 4 participants cancelled, partly on short notice, partly because of misunderstandings of what was wanted from them. This observation underscored the balance these women manage between family responsibilities and external commitments, highlighting the challenges they face in participating in decision-making. It also showed that the initial phase of photovoice was quite important and an emphasis should be set on explaining the method properly and in the best case in person.

Furthermore, the dynamic of seeking spousal support emerged as a recurring theme, as women frequently sought assistance from their husbands or other family members in fulfilling the given task of taking photographs. This can be attributed to the nature of the posed question and that young mothers might not be involved in the tasks directly affected by climate and environmental policies when they have young children and play a major role in raising them. Therefore, a limitation was that the initially chosen type of participants and attached selected question did not match well, as the question partly neglected the lived reality of the participants. This also led to the utilization of pre-existing photos by the participant, which was not the intention of the method.

In the end, the originally intended application could only be finished with one out of four people in the first patch. However, with this individual, the approach worked exceptionally well, yielding valuable insights that likely wouldn't have been uncovered through a standard interview method. (see appendix 1 for the photos and prompts).

Interviews

Due to time constraints and the challenges that arose from the initially planned Photovoice approach, a simpler approach, namely guideline-based semi-structured interviews was chosen for further knowledge production. This approach also serves the purpose of answering the research questions as interviews are a common tool to “learn about people’s beliefs, perspectives, opinions, lived experiences, and meaning making” (Flick, 2022, p.668).

A literature review and the outcomes of the photovoice trial served as the basis for the creation of the guidelines. In the end, 6 interviews were conducted with 9 participants contributing (see table 1).

While the focus was on young, female farmers with young children, recruiting proved a little bit challenging, as some women either did not want to or did not find the time to participate and some women asked whether their partners could join the conversation or sent their partner to the conversation last minute. This was also observed by (Farstad et al., 2022), who did not manage to interview female farmers in their in-depth research of eight farms. In the end, the interviewed persons were quite mixed with an emphasis on young farmers and at least a slight overrepresentation of women interviewed (Table 1).

The researcher is the cousin of participant one and knew the other participants vaguely because of growing up in the same region. They were chosen because of suggestions when relatives were asked about young farmers. One exception is participant 2, which the researcher had no ties with. The overall topic and a certain social desirability bias might have led to overemphasizing sustainable practices, such as having pV-modules or caring about animal welfare. Table 1 shows certain traits of the interviewed farmers and their farms.

Table 1: Selected traits of the farmers and their farms

| # | Gender | Age | Location | Business Branch | Mode of sale | Farm size [ha] | # involved gen.; kids |
|---|----------------------------|-----------|-------------------|--|--|----------------|-----------------------|
| 1 | Female | 25 | Rural | Processing company, pig farming, crop farming | Mostly trade, Direct marketing | 150 | 3; 2 |
| 2 | Male | 56 | outskirts of Graz | Vegetable Farming | Direct marketing | 6,5 | 1; 2 |
| 3 | Female; Female | 25; 51 | Rural | Processig company, tourism (“Urlaub am Bauernhof”) | high level of self-sufficiency for their guests; most products are directly sold to the guests | 30 | 3; 1 |
| 4 | Male | 31 | Rural | conventional dairy farm; milking robot | Milk processing company | 55 | |
| 5 | Couple: Female; Male | 30; 30 | Rural | Organic dairy farm; farm store; tourism | Milk processing company; direct marketing | 32 | 2; 3 |

| | | | | | | | |
|---|----------------------------|-----------|-------|-------------------------|-------------------------|----|------|
| | | | | (“Urlaub am Bauernhof”) | | | |
| 6 | Couple: Female; Male | 38; 41 | Rural | conventional dairy farm | Milk processing company | 31 | 1; 3 |

Results & Discussions

The retrieved interview data was transcribed with the software ‘ATrain’ analyzed with an inductive Thematic Analysis (TA) and the software ‘MaxQDA’.

For the representation of the results, two levels of abstraction are chosen. On the one hand, listing the specific policies and problems with them seems to serve the ideas of photovoice to inform decision-makers with actionable results. Technical details might not be too interesting for researchers though. On the other hand, the retrieved data also offers the opportunity for analyses on more abstract levels that are considered relevant for research, but can also serve politics to tackle the more structural challenges in the research field. Therefore, results are presented at the policy level and the structural level.

However, it must be noted that the results presented here by the researcher, should not replace an effort in collaborating with the participants to deliver results to policy makers in a way that was developed together. The following results should mostly be seen as a way to summarize the interviews and show results at the congress.

Policy-level

To answer the first and partly the second question about what environmental and climate policies already are in place and concern the life of farmers, the following themes and challenges (Table 2) could be retrieved from the interviews:

Table 2: Environmental and climate policies that concern farmer’s life already today and a selection of challenges that were mentioned

| Theme | Type of policy | Subtheme | Exemplary challenge mentioned ¹ |
|---|----------------|---|---|
| 1. Ammonia reduction regulation (Ammoniakreduktionsverordnung) (Ammoniakreduktionsverordnung, n.d.) | regulation | Obligation to incorporate fertilizers within 4 hours (Einarbeitungsverpflichtung von Düngemitteln) | Dependency on specific machines and the amount of labor force at the farm |
| | | Obligation to cover manure storage facilities (Abdeckungsverpflichtung von Wirtschaftsdüngerlagern) | High costs for little perceived impact |

¹ Challenges mentioned here are just an exemplary selection. A more detailed listing of the specific challenges would mostly be relevant for informing policy makers, but blow up the paper at hand.

| | | | |
|---|------------|--|---|
| | | Obligation to keep records (Aufzeichnungspflicht) | Just another task that costs time |
| 2. Implementation of renewable energy installations such as photovoltaic (PV) systems | subsidy | Implementation on available roof areas of houses, stables, barns | Complicated procedure to navigate through all the paperwork and collaborate with the energy providers |
| | | Implementation on open land area | fertile soil is used unnecessarily, while there are still many rooftops available for pV |
| 3. Animal welfare policies ² | regulation | Regulations concerning the stables | High investment costs |
| | | Regulations concerning animal medication | Higher dependency on the veterinarian |
| 4. Biodiversity regulations | regulation | Set-aside areas (Stillelegungsflächen) | Social insurance has to be paid, but the land can't be used |
| 5. CO2- Certificates | unclear | | If obligations (e.g. a certain amount of carbon in the soil) is not fulfilled, money might have to be paid back |

The full range of policy-specific challenges and solutions will not be mentioned in greater detail here. They would mostly be relevant for informing policy makers, but blow up the paper at hand.

To answer the third question about environmental and climate policies expected in the future, the following themes (Table 3) could be retrieved from the interviews.

² While animal welfare policies are not considered to be direct environmental or climate policies, they were mentioned in conjunction with those and mostly as being contradictory (e.g. higher rates of ground sealing because of new stables and higher ammonium emissions because of outdoor stables)

Table 3: Environmental and climate policies that might concern farmer's life in the future

| Theme | Type of policy | Exemplary anticipated challenge mentioned |
|---|----------------|---|
| 1. Regulation on nature restoration | regulation | Fertile land cannot be used |
| 2. Regulation and taxation on agrarian diesel | Cut of subsidy | Financial burden |
| 3. Regulation on a cap of ground sealing | regulation | In case municipalities reach the limit, farmers fear to not be prioritized when they need to build stables or other operating buildings |
| 4. (Animal welfare: Prohibition of slatted floors (Spalten) for cows) | regulation | Financial burden Operational difficulties |
| 5. Fertilizers: Restrictions for or decline in animal-based consumption and therefore organic fertilizers | unclear | Synthetic fertilizers are considered more carbon-intensive |

Throughout conducting the research, it became more and more clear that not many regulations specifically concerning the climate and environment are yet in place and not many concrete thoughts about future developments in the field of climate and environmental policies existed. This can also be undermined by the following very first statement of interview 1. Difficulties with answering direct questions about how climate and environmental policies affected their lives among all the other participants further emphasizes this fact.

Researcher: You sent me photos.

Participant 1: Yeah, I don't know if that helped you. It was...I thought it would be easier. We [the family] sometimes talked about it, at the table...it wasn't that easy.

Researcher: Okay. Well, because you don't think about taking photos in the moment or because ...?

Participant 1: Because, actually, there is nothing, in a way. So there aren't that many things. There's often a lot of complaining, you know, from others and so on. But then I seriously asked once, what really influences us now? [...] So there are very small things, those that I wrote to you. But otherwise it was really difficult.

This can be undermined by a statement in the APCC (2023) that stresses that agriculture is only marginally represented in the national climate and energy strategy, and no climate targets have been formulated in the latest government program either.

Therefore, the question about specific environmental and climate policies was mostly taken as a starting point to learn about farmer's opinions and lived realities. It became clear that an analysis at a higher level of abstraction would make more sense. Topics and themes will be summarized and explained now.

Structural level:

During the interviews, numerous structural challenges were mentioned that serve to answer the research question about structural foundations tied to environmental and climate policies and are summarized in Table 4. These challenges partly seem to hinder the acceptance and implementation of environmental and climate policies already today and might lead to further resistance in the future, especially when more policies might be added.

Table 4: Structural challenges of today's farmers that among other problems might hinder the ability or willingness to accept and implement (more) climate and environmental policies and lead to resistance

| Theme | Description |
|--|---|
| 1. Regulatory Challenges and Implementation Pressure | <p>Farmers report increasing regulatory demands in general and in the area of environmental and climate protection, such as the ammonia regulation or the regulation on nature restoration. This leads to financial and operational challenges, as these regulations require investments that are often tied to insecurities with subsidies.</p> <p>Further some mentioned a political “zick-zack” with seemingly random and partly contradictory requirements and regulations throughout the last years. Some participants perceive that what seems right and according to the regulations in the year it is implemented at site, might be wrong and outdated ‘two years later’.</p> <p>Last but not least, farmers regularly mentioned the feeling to be monitored and under pressure from potential sanctions when (slight) misconduct is being detected.</p> |
| 2. Perception of Inequality in Environmental Regulations | <p>Some farmers express a feeling that agriculture is subject to stricter environmental regulations compared to other sectors, such as aviation. They feel a sense of unfairness, as they do not see themselves as the main contributors to environmental impact but rather attribute it to industry-related sources.</p> |
| 3. Sustainability as a Goal | <p>Many statements indicate that farmers have a sense for making their operations more sustainable or at least want to comply with the social desirability to operate more sustainably. However, differing ideas and differing levels of knowledge of what was sustainable and what actions contribute more or less became apparent.</p> |
| 4. Information Flow and a Sense of Uncertainty | <p>The participants indicate that they mostly have to inform themselves about new regulations. They do this mainly through the internet, by reading newsletters from the chamber of agriculture (Kammerrundschreiben), and attending trainings. Additionally, when they have specific projects in mind, they seek out targeted information. They mention that proactive engagement is necessary, as there does not seem to be a centralized way for automatic updates; the farmers need to actively seek out information, and sometimes they may consult with the chamber of agriculture if they need assistance, but again this requires them initiating contact.</p> <p>In the interviews, different levels of knowledge on specific regulations were detected, with some information clearly being misinformation, when checking the legislative bodies. A problem in information flows, misinformation and uncertainty that comes with it was mentioned as a problem among peers in some of the interviews.</p> |
| 5. Discrepancy Between Political Proposals and | <p>Participants often mentioned a perceived disconnect between policies and their actual impacts on agricultural practices. Further, it was mentioned that the different modes of agriculture (cropland,</p> |

| | |
|---------------------------------|--|
| Their Actual Impact on Practice | grassland, animal, vegetable,...) required a more fine-grained look and treatment. |
|---------------------------------|--|

During the interviews, the participants placed significant emphasis on their lived work realities, and less emphasis on climate and environmental policies themselves. Several observations showed alignment with Simon Schaupp’s concept of "Stoffwechselfolitik" (metabolic politics) (Schaupp, 2024), which could provide an insightful framework for analysis but was not used in greater detail here yet. Schaupp argues that, every production policy and every labor policy—both at the regulatory level and within the concrete labor process—is inherently environmental policy. He claims that the idea that these can be separated is a great political and intellectual mistake.

He also critiques the way environmental protection and climate change mitigation is often approached today, comparing it to cost-cutting measures of the past. He observes that in modern work processes, e.g. in Germany, there is a strong push towards the "ecologization" of the workplace. Programs seem to be implemented under the banner of sustainability, where integrated, algorithmic management systems are used to identify inefficiencies in time and resource use. Many workers feel disillusioned by this, as it is essentially the same old strategy under a new label of sustainability. They push back, saying, that they are not going along with that (Schaupp, 2024). This pushing back was observed in pretty much every interview with statements like:

“I say to them [other farmers]: You just have to stand on your feet. You also have to say no sometimes, not always just yes-yes-yes.” (Interview 5)

“But if they proceed with it [Nature Restoration Law], as we [farmers] think they will, then the farmers' protests, which were there, will have been minor. Because then everyone will run, I think.” (Interview 6)

“It's just a bit of “Augenauswischerei” in my opinion. It's not interpreted honestly. Buying a certificate like that is nonsense. Then I am somehow tricking climate balances so that I can look good, but I haven't done anything.” (Interview 1)

The strong distinction between environmental and climate policies and other policies, together with “sustainability” being used as a means to fix certain smaller problems or inefficiencies could be one reason for frustration and protests. Farmers appear to possess what Schaupp (2024) refers to as "embodied environmental knowledge," intuitively recognizing not only when nature is being exploited, but also when they themselves are. It’s no surprise, then, that they prioritize their own well-being rather than further sacrificing themselves in the name of (potentially) preserving small aspects of nature.

Discussion of the photovoice method and future visions

In this chapter, thoughts about future usage of the method and whether it can also be used by practitioners should be shared.

When looking at the initial intention and recent developments of photovoice, it clearly is positioned as a method for science, research or education contexts that ought to *inform* decision-makers, hence also politics, and not be conducted by political organizations alone. Ideally, researchers and participants (or as they sometimes are called ‘co-researchers’)

collaborate on enhancing their knowledge and then jointly plan 'a format to share photographs and stories with policy makers and community leaders' (C. C. Wang, 2006, p.152).

However, certain ideas of photovoice, like conducting the interviews on the basis of pictures taken by underrepresented societal groups and paying good attention to a mutual learning process that primarily aims at understanding the situation of local communities, offers opportunities to gain alternative insights, also for political organizations. Political organizations and practitioners could take photovoice as an inspiration and starting point for conducting participatory research. Calling it 'photovoice' in an original sense might not please scholars in the field though, as photovoice offers a whole methodological concept with theoretical underpinnings and certain things to be satisfied that can't be ensured when it is used by practitioners only (Derr & Simons, 2020; Strack et al., 2022).

Concerning the level of abstraction of the results, the method offers many possibilities. For scientists, it can provide rich and in-depth qualitative data that can contribute to research and theory building. The researcher mostly narrows the topic down with the initial question asked. From then on, the participants decide a lot of the research process, which offers the opportunity to researchers to get quite close to how lived realities, opinions and thoughts might be. For political practice the method can offer both, quite specific and actionable opportunities for the short-term, but also give information about perceptions or restraints of structural underpinnings. This can inform more in-depth political and societal progress.

Photovoice can be a means of giving voice to those who may not be heard through traditional political discourse, leading to greater awareness and advocacy. The political use of Photovoice could involve communities presenting their photographic evidence to policymakers as a form of testimony and advocacy for change. This helps to make abstract issues more tangible and can bring lived experiences directly into the political arena.

A vision of mine would be to involve one additional societal group in the process: the media, particularly during the stage where decision-makers are informed. Visual narratives present an opportunity for high-quality reporting that resonates with readers. By incorporating media professionals, the scientifically grounded findings—shaped by people's lived realities—can lead to more effective science communication and foster greater mutual understanding between different societal groups.

Conclusion

The work presented sought to understand the perceptions and experiences of farmers regarding environmental and climate regulations and their impact on agricultural practices. The research was initially based on a photovoice approach, later complemented by interviews due to time and practical constraints. The findings reveal farmers' lived realities, frustrations, and concerns, also with regard to the future development of the sector.

A major takeaway is that separating environmental and climate policies from other policies might not yield favorable outcomes due to a need for more systemic changes. This assertion stems from farm-level insights and structural challenges identified in interviews. A purely policy-level analysis may fail to capture the broad set of factors that influence the implementation and acceptance of regulations among farmers. The paradox of agriculture's reliance on weather

patterns and its resistance to environmental regulation suggests that deeper structural issues, such as the challenges identified in the research, may be at play.

The researcher's vision includes a collaborative effort with participants to communicate findings to policymakers effectively, utilizing the insights gained through both photovoice and interviews to address the practical challenges and structural issues faced by the agricultural sector in relation to environmental and climate policy. This could be more successful by incorporating an additional societal group into the research process: the media. By involving media professionals, the visual narratives produced through photovoice can reach decision-makers and also enable high-quality reporting that engages a broader audience. This evolution of photovoice would not only democratize the voices of underrepresented communities by making their experiences and challenges more tangible to policymakers but also enhance science communication. This could enable a deeper mutual understanding between researchers, participants, and the public, ultimately leading to more informed political and societal progress.

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Appendix I – Photos and Prompts from Interview 1



Figure 2: Um weiterhin von der Landwirtschaft leben zu können und auch die geforderten Tierschutzmaßnahmen erfüllen zu können sind wir gefordert zusätzliche Stallungen zu errichten. Wenn in gemeinden jährlich nur mehr 2% (oder 4%???) Boden verbaut werden darf ist nicht möglich.



Figure 3: Besondere Herausforderung Tierschutz und Emissionsminderung zu vereinbaren. Tierschutz fordert Außenklimaställe, natürlich sind die Emissionen aufgrund Sonneneinstrahlung erhöht.



Figure 4: Bodennahe gülleausbringung erfolgt bei uns schon seit jahren, um die Emissionen noch geringer zu halten muss die gülle nun binnen 4 stunden eingearbeitet werden, für uns nicht das riesen problem, da wir genug arbeits- und schlagkraft, aber für viele Landwirte die alleine am Betrieb arbeiten schon, per satelliten fotos kann das von der AMA überprüft und auch sanktioniert werden



Figure 5: Aufgrund der vielen gebäude die ein landwirtschaftlicher betrieb meist umfasst, ist das potential für PV anlagen groß, so kann der eigene Stromverbrauch und darüber hinaus aus sonnenenergie gewonnen werden. Erst wenn über jedem supermarket-, einkaufszentrum-, fußballstadion-, flughafenparkplatz usw. Usw (von jedem einzelnen Dach mal abgesehen) eine PV Anlage errichtet ist kann wertvoller fruchtbarer boden dafür in betracht gezogen werden



Figure 6: Ohne tierhaltung fehlt der wertvolle organische Wirtschaftsdünger für die Kulturpflanzen, man könnte nur mehr synthetisch hergestellten Mineraldünger ausbringen, dessen CO2 bilanz sehr schlecht ist



Figure 7: Breite Brachestreifen neben Gewässer, die Fläche fehlt als Ackerland



Figure 8: Renaturierung auf den Natura 2000 flächen, unsere Kulturlandschaft wird ihr erscheinungsbild drastisch ändern, wie geht es mit den touristisch genutzten gebieten in der au weiter, welcher schon eine große wertschöpfung in der region darstellt



Figure 9: Co2 Zertifikate: finanzstarke Großkonzerne verschieben die Klimaschutzmaßnahmen anders wohin auf der Welt und erkaufen sich ihre CO2 Bilanz, wir pflanzen Bäume und pflegen Streuobstwiesen, erhalten dafür aber kein CO2 Zertifikat



Figure 13: Landwirte als die Klimasünder: wir wollen unseren Hof auch an die nächsten Generationen weitergeben, werden aber in der Öffentlichkeit als die schuldigen dargestellt



Figure 10: Renaturierung in der Au: die böden in der au sind extrem fruchtbar, es ist nur wenig düngung und bodenbearbeitung notwendig im hohe erträge und gute qualitäten zu erzielen, wenn nun genau diese flächen stillgelegt werden müssen, wird noch intensivere nutzung von andern flächcn notwendig