



WP4.1 Diversity in Policies

Final Report

Part II – Interview with key informants



June 2023



Table of Contents

INTRODUCTION	4
COUNTRY REPORTS	8
GERMANY	9
A. KEY INFORMANTS	10
<i>Summary table of key informants selected for interview including identity and expertise</i>	10
B. INTERVIEWS WITH KEY INFORMANTS - FINDINGS	13
1. INTRODUCTORY PART	13
<i>Key informants' views of farmer and territory characteristics</i>	13
2. AGROBIODIVERSITY	15
3. BIOCULTURAL DIVERSITY	19
4. ORGANIZATIONAL DIVERSITY	24
5. AGRICULTURAL MODELS AND THE COMMON AGRICULTURAL POLICY	28
<i>Views on agricultural models proposed at the national/regional level</i>	28
<i>Common Agricultural Policy</i>	29
6. SUSTAINABLE AND DIVERSE FOOD SYSTEMS	31
<i>Sustainable food systems</i>	31
<i>Sustainable food systems and key policy – synthetic survey</i>	32
<i>Diverse food systems</i>	34
<i>Diverse food systems and key policy – synthetic survey</i>	34
POLAND	37
A. KEY INFORMANTS	38
<i>Summary table of key informants selected for interview</i>	38
B. INTERVIEWS WITH KEY INFORMANTS - FINDINGS	40
1. INTRODUCTORY PART	40
<i>Interviewee's Identity and expertise - Summary table</i>	40
<i>Interviewees' views of farmers' and territory's characteristics</i>	43
2. AGROBIODIVERSITY	45
3. BIOCULTURAL DIVERSITY	47
4. ORGANIZATIONAL DIVERSITY	51
5. AGRICULTURAL MODELS AND THE COMMON AGRICULTURAL POLICY	56
6. SUSTAINABLE AND DIVERSE FOOD SYSTEMS	59
<i>Diverse food systems and key policy – synthetic survey</i>	62
<i>Comments</i>	63
ENGLAND, UK	66
A. KEY INFORMANTS	67
B. INTERVIEWS WITH KEY INFORMANTS - FINDINGS	68
1. INTRODUCTORY PART	68
1.1 <i>Interviewee's Identity and expertise - Summary table</i>	68
1.2 <i>Interviewees' views of farmers' characteristics</i>	70
2. AGROBIODIVERSITY	72
<i>Factors determining variety choice</i>	73
<i>Exchange of seeds between farmers</i>	75



<i>Other laws or policies affecting agrobiodiversity</i>	75
3. BIOCULTURAL DIVERSITY	77
<i>Main laws/policies affecting diversity of agricultural practices and food cultures</i>	77
<i>Main factors encouraging Organic/localised farming</i>	79
<i>Promotion of local and/or traditional products</i>	80
<i>Policy sensitivity to healthy and sustainable diets</i>	82
4. ORGANIZATIONAL DIVERSITY	83
<i>Access to land</i>	83
<i>Diversity of farmers</i>	84
<i>Role of producers' organizations</i>	84
<i>Main drivers of farmers selling through short food supply chains</i>	85
<i>Public procurement</i>	86
5. AGRICULTURAL MODELS AND THE COMMON AGRICULTURAL POLICY	88
<i>5.1 Views on agricultural models proposed at the national level</i>	88
<i>5.2. Common Agricultural Policy and UK replacement to the CAP</i>	90
6. SUSTAINABLE AND DIVERSE FOOD SYSTEMS	92
<i>6.1 Sustainable food systems</i>	92
<i>6.2 Sustainable food systems and key policy – synthetic survey</i>	94
<i>6.3 Diverse food systems</i>	96
<i>6.4 Diverse food systems and key policy – synthetic survey</i>	97
NORWAY	101
A. KEY INFORMANTS	102
B. INTERVIEWS WITH KEY INFORMANTS – FINDINGS	103
1. INTRODUCTORY PART	103
2. AGROBIODIVERSITY	107
3. BIO-CULTURAL DIVERSITY	110
4. ORGANIZATIONAL DIVERSITY	114
5. THE NORWEGIAN AGRICULTURAL MODEL	120
6. SUSTAINABLE AND DIVERSE FOOD SYSTEMS	124
ITALY	129
A. KEY INFORMANTS	130
B. INTERVIEWS WITH KEY INFORMANTS – FINDINGS	132
1. INTRODUCTORY PART	132
2. AGROBIODIVERSITY	138
3. BIO-CULTURAL DIVERSITY	143
4. ORGANIZATIONAL DIVERSITY	150
5. AGRICULTURAL MODELS AND THE COMMON AGRICULTURAL POLICY	156
6. SUSTAINABLE AND DIVERSE FOOD SYSTEMS	159

Introduction

Due to the diversity of legal systems and the lack of necessary details, it is not possible to operate a strict comparison between countries. Nevertheless, it is possible to highlight key features.

Relationship with the EU

UK – major transformation due to Brexit (2020) but still high influence on the structure of policies

Norway – it is the most different system, due to the maintained control over agricultural policies, but EU (EEA) is a factor in shaping policies

Germany, Italy – members since 1958

Poland – member since 2004 – probably still seeing transition effects

Influence from International law

- Seed law - UPOV
- Trade law - WTO

Seed law and trade law are the most homogeneous legal frameworks due to the adherence to international regimes. The consequence is little regulatory space left to States and relatively little room for change.

Most diversified legal framework

Land access and tenure

- No direct EU policy
- Key strategic asset
- Historical differences
- **Norway and Poland** – strong public control on land access

Food price

- **Norway** – national level price setting
- Agrobiodiversity

Peasants' varieties

- **Italy** – national law on agrobiodiversity: possibility to exchange seeds in the network (2015); recognition of farmers' rights (2021)
- **Norway** – new interest in non recognized varieties; recognition of farmers' rights
- **Poland** – farmers rights for a certain typology of farmer
- **UK** – opposite route: new interest in new breeding techniques

Quality schemes and traditional products

- **Italy** – high relevance of quality schemes, mountain products, local food labelling schemes, traditional products
- **Germany** – stronger attention on food sustainability, many local level labelling schemes

Direct sales

- **Italy** and **Poland** have strong schemes for encouraging direct sales
- **Germany** has a private-led system
- **UK** – Dynamic Food Procurement

- **Germany** and **UK** have National food strategy policies
- **Norway** has a Strategy for urban agriculture

Workers rights

Germany – minimum salary for agricultural workers

UK – fairness in the supply chain since 2009

General impression, Main challenges

Germany	Poland	Italy	Norway	UK
Impact of war on prices and demand Consumers pay too little for food	Decreasing number of farms Age Unwillingness to cooperate Dual agricultural system: large scale v. small scale (part-time; self-consumption)	High burocratic burden Wild animals Access to market Financial stability Farmer's capabilities Diverse agriculture (mountain agriculture) Raising awareness on diversification	Relevance of part-time farming High burocratic burden	Financial stability Agency against retailers's power Impact of war on prices Flat yields despite growing input use

Agrobiodiversity

Germany	Poland	Italy	Norway	UK
<p>Yields – Stability – Agronomic factors - Market preferences – Quality (standardized) Depends from the farm size and model Organic farm – availability of organic varieties / Old varieties - personal motivation</p>				
Old varieties are not a trend Encouraging factors: Local labels, innovative agriculture models Other varieties could be used with new agritechnologies Old varieties are grown by conventional agriculture	Old varieties are used by small scale farms for self-consumption and sold to usual consumers Seed exchange is very common but for economic reasons (not biodiversity)	Need certified seeds for organic agriculture fundings Personal identity of the farmer Research on old varieties and consultants Legal framework (for some) human network (for others) Connection between wild biodiversity and agrobiodiversity is key	Between 2004-2010 it was illegal to exchange or give away seeds Food standardization shaped consumers preferences Grow food using local seeds varieties seem very limited since Norwegian farmers depend on imported seeds Hygiene law hinders seeds import	Alternative protein industry as a new source of demand for old varieties of pulses UK law did not introduce heterogeneous material rule yet Grey area for exchanging seeds Trade agreement with Australia Dual approach: improving environmental standards on some farmland whilst leaving the rest unchanged

Biocultural diversity

Germany	Poland	Italy	Norway	UK
<p>Monetary aspects and willing consumers</p> <p>Organic agriculture is chosen by smaller farms, big farms can compete on low prices</p> <p>“network” effect</p> <p>Local foods labels, but difficult when processors shut down, e.g. if a dairy or slaughter house</p> <p>High hygiene standards</p> <p>Double standard for consumers refusing to eat cold cuts or “nose to tail”</p>	<p>organic farming in Poland is developing mainly due to state support.</p> <p>A lot of small organic farms non-certified due to high costs when Poland joined the European Union</p> <p>traditional and local products began to be searched</p> <p>History and quality schemes: huge emphasis on traditional products</p> <p>Hygiene standards</p>	<p>Personal belief, motivation and the example</p> <p>Quality schemes – ambivalent</p>	<p>Organic – not relevant national strategies to encourage business development based on the agricultural resources on the farm</p>	<p>farmers markets in the UK are not part of food culture – a novelty add-on”</p> <p>public procurement is limited by ‘nanny state’ concerns</p> <p>Repeal bill</p> <p>Fertilizer prices increase pushed for organic conversion, but little public support</p> <p>Non-organic nature-friendly farming</p> <p>No local food incentives</p>



Country Reports



Germany

A. Key Informants

Summary table of key informants selected for interview including identity and expertise

ID	Level (national/local)	Job / Role in Institution	Collaborating institutions	Have direct contacts with farmers? What are their characteristics?
I1	Local	head of competence centre organic farming (belongs to the regional authority for environment, agriculture, geology, of the Federal State of Saxony)	other federal and national institutions, universities, non-university research institutions (e.g. Leibniz Centre for Agricultural Landscape Research (ZALF))	yes, with organic partner farms, counselling and research
I2	Local	Head of Association Organic Farming (VÖL): umbrella organisation of the 5 organic farming associations of Hesse	communication interface between organic farming and the Ministry and downstream authorities and universities, etc.	Yes, farmers of organic farming associations
I3	National	University Scholar, in food policy, coordination and project leader (of subproject) of research project SUSKULT, hydroponic food production, resources used from purification plant	transdisciplinary scientists from universities and research institutes, retailer	Yes, in study participating farmers
I4	National	food buyer (whole sale fruit and vegetables), employee of a whole saler	Association of Organic Processors, Wholesalers and Retailers (Bund für Naturkost Naturwaren (BNN): representing the interests of the organic food and natural goods sector on a political and economical level. Lower Saxony State Office for Consumer Protection and Food Safety for Quality Control of their products, Bioverita (label for	yes, smaller farmers who produce for them, preferably farmers who produce high quality organic products (e.g. demeter, Naturland, Bioland, etc.)

			organic varieties), Demeter, Öko-Kistenverband	
15	Local / national	farmers association (ABL)	Farmer, spokesperson for association for peasant agriculture in Hesse, committee for business administration-process engineering (Ausschuss für Betriebswirtschafts-Verfahrenstechnik), public education and counselling organization of the State of Hesse (LLH), agricultural committee of the State of Hesse, community of interest against fees for recreation	yes, organic and conventional farmers
16	Local	Employee of public authority/administration	project aims to support organic and regional products /support the organic farming in the region, cooperation also with processors and public canteens, to municipal administration	yes, support for organic farmers
17	Local	Head of public canteen	vendors, working groups to increase organic and/or regional products, serve daily between 5500-7200 meals	indirect
18	Local	Hessian ministry of environment, climate protection – employee	Hessian Producers Organisations fruit and vegetables, Federal Ministry of Food and Agriculture, Federal Office for Agriculture and Food, Hessian agricultural departments, Marketing association of regional products, association of direct trader, association of organic farming, Thünen institute, organizations e.g. demeter, Naturland, etc., farmers association	yes
19	Local	Head of marketing association of regional products	Retail, public institutions (e.g. Hessian ministry of environment, climate protection, regional councils (Regierungspräsidien), public education and counselling	yes, farmers can apply for regional labels

			organization of the State of Hesse (LLH), associations, farmers	
I10	Local (has national pendant)	Chair of Farmers association of Gießen/Wetzlar/Dill	Contact with local authorities, veterinary office, department for rural affairs, works also for hessian Producers Organisation rapeseed, association for landscape conservation, collective, "Märkerschaft"	Yes, (mainly conventional farmers)
I11	National	Research Institute of Organic Agriculture (FiBL) planned		

B. Interviews with key informants - findings

1. Introductory Part

Key informants' views of farmer and territory characteristics

The collaborating farmers of the interviewees were often organic farmers, but also conventional farmers (especially the farmers association). The following concerns of farmers were mentioned:

Main concerns are related to increasing prices and lower demand for organic products and insecurities due to the new CAP.

- **I2, I10:** insecurities exist about the changes of the new CAP (because many aspects were not clear until the end of the year (e.g. concerning the exemption to devote 4% to non-productive features due to the war in Ukraine), however farmers need security and information earlier when planning the next year, hence one interviewee reported of farmers, who just decided themselves what to do:

"So basically, they don't know at the moment whether what they have done now, because as a farmer you simply have to follow the annual calendar, will turn out at all next year that it was right or not. There are already enough who say with a certain defiance: well, that's just the way it is, it will work out somehow-." (I2)

Hesse's "diverse cultures" program is now coming to an end. In principle, there is now one to one the same in this new CAP, but with significantly less financial compensation. And for many farms, the economic viability is no longer given. (I10)

- **I6:** The impact of the war in Ukraine on prices, e.g. energy costs for milking plants are very high for dairy farmers, also there are concerns if the milk can be collected. Also, there are examples that organic farmers cannot sell their products anymore.
- **I6:** Also prices are collapsed in the organic sector and sectors with production of higher quality food. A common complaint in Germany is that consumers pay too little for food, that there is too little appreciation. Prices for food in Germany are very low which creates the impression of strong oppositions. (In addition, I8 mentions that consumers often tend now to cheaper products).

Even though some prices of conventional products increase more than for organic products, consumers still think that organic products are more expensive. Due to this, consumers still buy conventional products, if they have less money to spend. This lead to a decline in sales up to 30-40% (I2).

I4, I8, I9: During the COVID-19 pandemic the demand and sales of organic products was very high.

Opinions differed concerning milk (farmers), whereas I6 mentioned a particularly difficult situation for dairy farmers I8 thinks that the price for milk is good and I2 describes that milk and butter are partly more expensive in discount supermarkets compared to specialised shops, however this still leads to a decrease of sales as consumers do not purchase more in specialised shops.

2. Agrobiodiversity

Corresponding interview track section

- *What are the factors (both laws, public interventions and environmental/economic/social conditions) that determine the choice of growing one variety over another?*
- *What are the factors that encourage farmers to maintain local or ancient varieties? What are the most effective public or private instruments for this purpose?*
- *Are there any instruments that facilitate the exchange of seeds between farmers? Factors that hinder it? Has anything changed in recent years?*
- *Can you think of any other law or policy affecting agrobiodiversity?*

Local and old varieties:

Profitability of any product (local, old, etc.) was the reason which was mentioned most for farmers to grow them (I1, I2, I9, I10). The main reason for farmers to cultivate old varieties is personal interest (I1, I8), as there is (almost) no profitability for farmers (I8). Local or old varieties are only a niche market, because in the classical crop or field beans there do not exist old varieties anymore. This would rather apply to lentils, e.g. in southern Germany (Schwäbische Alb). I2 mentions that Emmer and Einkorn are not culturally grown here (at least in Hessen), however I1 mentions them as examples for old varieties and adds that a certain use and special qualities of old varieties, for instance resistances, might be a reason to grow them. Another factor, which deemed necessary is the (regional or direct) marketing infrastructure, i.e. to have processors or customers who buys old varieties (I1, I10). For example, might a big processor demand one variety with certain qualities, whereas an artisan baker can bake a sample and knows how to use the flour (I1). This applies also to rare varieties, i.e. if customers know the farmer, can see the land and know it is a rare variety. This strategy could work for consumers even with paying a higher price (I1).

Generally, reasons to choose certain products, I4 mentions quality and yield. I2 adds health and stability ("Standsicherheit") as relevant factors to choose a variety and mentions that guarantee of yield and stability might be more relevant for conventional farmers than for organic farmers. For the latter the fact becomes more important, if the variety is organically bred. Nowadays organic breedings also have high yields, but often have a resistance as well. I10 also adds the potential need of expensive technical equipment to grow a crop and interplay/interdependence in the crop rotation, what kind of growing breaks needs the crop. Also, in general the location and qualities of the farmland is critical which crops can be grown in a certain spot.

According to I1 the key criterion for organic farmers might be the certainty of yield, not necessarily the extent of yield. Composite Cross Populations (CCP) have a lower yield compared to the pure variety, but over several years the yield ranges in the top 30%. I1 and I2 differentiate in this case between organic and conventional farmers.

Supportive public interventions (for crops) were not known (beside gene banks) to I1. Neither known for old varieties to I10.

Two labels “Organic from Hesse” and “Prooven Quality – Hesse” shall inform and guarantee consumers about the regionality (of the complete value chain) of a certain product. To I9 are there in best cases two reasons for farmers to apply for the labels. At least the promotion of sales is one. But also, it serves as a community of values and farmers can use the labels for their own marketing e.g. in direct sales.

Not necessarily old cultivars, but also different crops (e.g. lentils, quinoa) are grown from a few farmers recently, which are more resistant to weather conditions. Old cultivars are tested from conventional and organic farmers but do not play a big role for the marketing and because the quantity is so little it does not have an impact on the diet (“*it is not even a trend*”). Also implementing old breeds and “*former structures*” would only be possible, if someone would pay for it. However, in most cases consumers will not be ready to do that and if the government will not finance it, these kind of changes will not be possible according to I9.

I1: Regional products might be more likely marketed in direct trade or through a retailer as long as a regional relation is present. To market regional products processors are important, to have also medium sized processors to develop a market that products do not have to be transported throughout the country to be processed and being sold in the production region as local product.

For I8, farmers only start cultivating old and rare breeds, if they have an intrinsical motivation and can sell the products profitably. The minimum wage of 12 € (also paid in the agricultural sector) might lead to a lower use of work intensive and cost intensive crops and breeds. The federal state Northrhine-Westphalia funds the breeding of all livestock named in the Red List/Red Data Book. In Hesse, farmers of two cattle breeds, two sheep breeds and one goat breed can receive funding for 5 years (Rotes Höhenvieh, Deutsches Schwarzbuntes Niederungsrand, Rhönschaf, Coburger Fuchsschaf, Weiße Deutsche Edelziege, <https://umwelt.hessen.de/Landwirtschaft/Foerderungen/Gefaehrdeten-Nutztierarten>, 06.01.2023). For instance, Bavaria also funds 6 cattle breeds (<https://www.stmelf.bayern.de/agrarpolitik/foerderung/003663/index.php>, 14.12.2022). However, the main preservation of old breeds is conducted by private people (e.g. sideline) compared to farmers. Also, organic farmers do not work with old breeds, due to the cost of organic feeding, organic conditionalities, hence mainly old breed preservation is done in the conventional sector (I8).

“From measures which are eligible for funding, federal states can decide themselves which they want to fund, according to the respective situations in the regions” (I8).

The Society for the Conservation of Old and Endangered Livestock Breeds is an transdisciplinary, private association with 2200 members, founded in 1981 in Bavaria. It is working overall Germany and its goal is to preserve the endangered farm animal breeds. It is linked with international organisations like Rare Breeds International, Donauländer Allianz für Genkonservierung and SAVE. (<https://www.g-e-h.de/index.php/die-geh/ziele-und-aufgaben>, 14.12.2022). They started the „Ark-project“ in 1995, where farmers keep endangered breeds and use them on the farm. (<https://www.g-e-h.de/index.php/arche>

projekt, 14.12.2022). Here it is possible to access the GENRES (Information system genetic resources by the Federal Agency for Agriculture and Food (BLE).

Future oriented agriculture can also have an impact on agrobiodiversity:

Due to climate change (i.e. drought and crop failure) alternative production ways must be sought, for instance hydroponics. This system is interesting for vertical farming and can be located close to cities. This closeness to consumers can enable to cultivate old cultivars (e.g. tomatoes with softer peel which does not need to endure the transportation from Spain to Germany. A retailer in Hesse produces and sells basil with aquaponic (I3).

Variety protection law (SortSchutzG 1985, Sortenschutzgesetz) hinders according to I5 the potential to increase (agrobio)diversity. It protects the intellectual property associated with plant breeding (<https://www.bundessortenamt.de/bsa/en/variety-testing/plant-breeders-rights>, 08.02.2023). The farmers association (ABL) founded a Community of interest against the cultivation fee to support farmers against this fee and especially the way the fee is obtained through an organisation (<https://www.ig-nachbau.de/start>, 09.02.2023). They also had won some lawsuits (I5).

However, I5 criticizes that varieties are wiped out through this system and the Community Against Fees for Recreation tries to preserve diversity:

...the old cereal varieties and they are just better, some of them are also totally resistant to any kind of disease and of course close crop rotation is conducive to diseases. (I5)

However, in animal breeding it is vice versa: In the past (until 1991) it was allowed to breed plants as farmers wished, but for animals strict rules applied, to guarantee good and healthy animals, etc. And this freedom of animal breeding would have increased the diversity (I5).

I5 claims that with genetic engineering, there is no diversity at all.

I4 explains that some farmers do not appreciate **open-pollinated varieties** so much, because fewer seeds grow, hence the fruits/vegetables become bigger. Compared to some hybrid variants the quality or yield is not as good. Customers (i.e. retailers) think it is interesting, but find it difficult to communicate this topic to the consumers. If products are not as uniform, this must be communicated with the consumers, this takes time and is difficult. And the yield can be lower, hence the farmers want to receive a higher price. During the pandemic it was possible to sell anything, now it is more difficult. Consumers want cheaper products.

„So, if one stands in front of a beautiful kohlrabi and next to it lies a chunky one and the one says: Look, this one is open-pollinated, costs twice as much. The big one, beautiful one, is not open-pollinated-.



“People ask: I think this is organic? Is there good organic and bad organic? To communicate this is difficult. People want to have products in their stores, which sell by themselves.”

I4: **Cytoplasmatic male sterility** (CMS) free seeds can be more difficult for farmers, more work. Whereas CMS hybrids can have growing advantages.

3. Biocultural diversity

Corresponding interview track section

- *What are the main factors encouraging organic farming and extensive livestock farming?*
- *To what extent the production and commercialization of traditional products is promoted? What are the main factors hindering or encouraging that?*
- *To what extent the consumption of local products is promoted? What are the main factors hindering or encouraging that?*
- *At the public policy level, is there sensitivity to healthy and sustainable diets? How do such policies influence the type of agriculture practised? And how do they influence food processing?*
- *Can you think of any other law or policy affecting the diversity of agricultural practices and food cultures?*

Bio cultural diversity at farm level

Increase in organic farming and extensive livestock:

Monetary aspects and willing consumers who buy and support this agriculture were mentioned:

To increase organic farming and extensive husbandry it is necessary to I8 that consumers must buy and be willing to pay for this agriculture, hence, only with a high demand the system is more independent from external funding. A system can only be resilient, if demand and supply match (I8).

I10 agrees, for increasing organic production it is necessary to have the suitable market, not to produce past the market. It would also be important to receive the higher price, because of the higher effort and lower yield by hectare. However, organic farms receive more subsidies than conventional farmers.

„The better the price for the generated products, hence the meat, the more likely it is that the animals are kept and vice versa. And wolf is now of course an influence factor, which stunts that rather than promotes. Thus, the settling of wolves“. (I2)

The appearance of wolves in Hesse has begun approx. 2 years ago.

To calculate the real costs (e.g. impact of pesticides on biodiversity) which arise in conventional farming would support organic products according to I4.

Future-oriented agriculture can also impact agrobiodiversity:

However, hydroponics, as another form of agriculture, lacks the possibility to be certified organic.

“Hydroponic production systems cannot be certified organic, because of lack of soil.

Also, fertilizers from recyclates of wastewater cannot receive a CE certification so far (see Düngemittelverordnung)” (I3).

According to I6, so far the number of organic farms depended on factors like division of estate among heirs, because the farms are much smaller and it is more difficult to work economically efficient. Compared to northern Germany where farms were not divided between heirs or in eastern Germany, where farms were collectivized. In this region the farms are very small, that many cannot live solely from the revenues of the farm. For those farmers it can be more attractive to work in the organic sector with the upper price segment and get the higher funding to survive as a farm at all. Conversely, a very big conventional farm can work that efficiently that they can even cope with the conventional prices. Also, conversion to organic farming depends on the prior agriculture, e.g. for farmers with pasture farming (Weidehaltung) it is much easier to transform than for crop growers or farmers with a conventional Schweinemastbetrieb (pig farming). I6 is wondering, if there is some kind of “network” effect, e.g. when in one region there are 20 farmers and one organic farmer, this might be the outsider. But if there would be already five organic farmers, this might make it easier or more likely for another farmer to shift to organic agriculture.

I5 objects that having control over finances is necessary, but is often not the reality. I5 thinks that a farmer cannot manage 60 cows economically than he/she will not be able to manage 100 cows.

To make organic agriculture the standard (to normality) and to give consumers an impulse to buy organic products would be to name the real costs of products, to include the costs of externalities. Also, in the region of Hesse it seems that when a farm is succeeded from the next generation the young farmers at least often think about shifting towards organic farming. However, this might be due to the locality, as there are many organic farms. In regions with few organic farms this might not be interesting (even for the younger generation) I6.

The political funding system as it is now bears some injustice for organic farmers:

According to I2 new funds for measures which support biodiversity (e.g. use of trefoil-grass) would fund conventional farmers substantially, but organic farmers not at all, because they were using this already. (see also chapter “Agricultural models and the Common Agricultural Policy”). In Bavaria it was accomplished that some climate protection measures were funded, but this was not possible in Hesse (I2).

Traditional products (TSG) do not play a major role in Germany. I10 mentioned a few initiatives on selling and producing typical products of a region, but that are mainly private, single initiatives I10 knew about. The boundaries to typically local products are fluid.

Bio cultural diversity at the table

Promotion of consumption of local products:

EU quality policy aims to protect the names of specific products to promote their unique characteristics, linked to their geographical origin as well as traditional know-how (https://agriculture.ec.europa.eu/farming/geographical-indications-and-quality-schemes/geographical-indications-and-quality-schemes-explained_en, 09.02.2023). These logos might guide consumers towards such products.

However:

“It can be difficult for consumers to understand those labels [note author: PGI], e.g. to understand for Black Forest ham that only the final step in the production must be performed in the Black Forest, but the pork can be originated anywhere” (I8).

Trying something similar, there exist on a federal state level of Hesse “Organic from Hesse” (“Bio aus Hessen”) and “Proven Quality - Hesse” (“Geprüfte Qualität - Hessen”), which are official labels. The federal country of Hesse commissioned the Marketing Association “Good things from Hesse” (“Gutes aus Hessen”) with the marketing of regional products. (<https://www.gutes-aus-hessen.de/faq/>, 15.12.2022).

The number of participating farmers increased in the past. However, it is difficult when processors shut down, e.g. if a dairy or slaughter house closes it could be difficult to process the milk and meat for up to 120 farms, which cannot participate any longer, if no substitute in Hesse can be found (I8).

For I10 was one reason to get certified for “Good things from Hesse” (next to economical reasons), because I10 was building a hall and funding was connected with regional products.

“Landmarkt” is a brand, implemented on the initiative for direct trade of the coalition/union/association of hessian direct marketer (Vereinigung der Hessischen Direktvermarkter e.V.). Products are sold on farmers markets, farm shops and more than 300 selected REWE supermarkets. The approximately 4000 products are controlled neutrally and independently. A precondition to use the brand is that the peasant family is in charge of the production, processing and marketing (<https://landmarkt.hessische-direktvermarkter.de/>, 15.12.2022). REWE supermarkets of the region “middle” (mainly in Hesse) are maybe the most important partner of the MGH concerning to I2. Under this umbrella, a project promotes „hessian organic grazing cattle“ which is funded by the Hessian Ministry for environment, climate protection, agriculture and consumer protection. Partners are the Organic Model Region Hesse, a cattle Producer Organisation and the Association of organic farming. <https://www.gutes-aus-hessen.de/allgemein/markteinfuehrung-fuer-hessisches-bio-weiderind/>, 15.12.2022).

Several actors (several nature conservation associations, Association Organic Farming, farmers association (ABL), Slowfood, network of hessian Food Policy Councils) established an “Alliance for an agro-food turn” (Allianz für die Agrar- und Ernährungswende) which developed an agenda to recollect organic and local products for consumers as they tend now towards cheaper products. Agencies are about to develop concepts and projects in order to allow the alliance to apply for BLE funding (I2).

CSAs also work in this direction to I2 as production and consumption is based locally.

Also, to increase the consumption of regional produce, I9 argues firstly for more education and information of consumers and in schools about food and nutrition and the production of food (which, according to the respondent, was done too little in the past and still is). Secondly, appreciation is lacking (also for processors) and thirdly, to find successors who want to work in the respective fields. Political decisions, i.e. to increase the minimal wage since October 1st, 2022 to 12€/h (<https://www.bundesregierung.de/breg-de/aktuelles/12-euro-mindestlohn-2006858>, 21.12.2022) makes it difficult to compete with other countries like Romania with very low wages. Also, the high German standards for food safety and production conditions are posing difficulties. Double moral standards of consumers, e.g. wish for high animal welfare, but refusing to eat cold cuts or “nose to tail”, makes it even more difficult to market the complete animal (I9).

In the similar direction argues I3: By decreasing the diversity of supplied products in supermarkets in the past might have formed the idea of consumers how products are supposed to look like. Also, labels and standardization helped to inform consumers about regionality or sustainability of a product. I3 mentions critically that in the moment more affluent and better educated people are interested in regional products, hence it might be that supermarkets could also try to use this to gain affluent consumers. To diversify consumers of regional and sustainably produced food, the real costs should be represented in the price, which would be a task for political decision makers. Urban gardening projects have a potential for cultural exchange for instance by cooking together. However, to make this happen political support is necessary, e.g. provide space where food can be grown (I3).

Public canteens also can work towards more consumption of regional products. The canteen of I7 offers daily one regional and seasonal vegetable, for a higher price (but not in the same large quantity compared to the other vegetables). Also meat with the label “proven Quality from Hesse”, all fish is MSC/ASC certified and organic-fair trade coffee. One site has an organic share, because they have a cooperation with an integrative farm (I7). It is difficult to increase the amount of organic and regional products in canteens, because in the opinion of I7 not very many vegetable breeds are grown. Hence, the supply is limited to a few breeds. A limiting factor is that the products must not be too expensive as they serve in a low price range. Therefore, I7 supports to use and offer regional vegetable but NOT organic and suggests that farmers of a region form for instance a cooperative. Such cooperation would increase the security for the canteen to receive the products they need. Although it would only be possible to know that the product is from the region (e.g. 50 km or a federal state) and not from one special farmer, this could be a step towards more regional products in public catering.

Bio cultural diversity at the table

During the COVID-19 pandemic the canteen started with their own butchery and bakery. During the pandemic the canteen produced their pasta themselves. To that end, the most difficult time during the pandemic the canteen have no complete convenience products beside fish. The vegan pea protein products are prepared in the butchery. They experiment with meat reduced meals. Apprentices of the canteen even work as product and recipe developer. A student assistant (who lives vegan since 10 years) is employed to test all vegan meals. Also, they keep beehives. These activities are mainly due to personal commitment. The canteen serves up to 55- 60% meatless meals daily.

Gluten free meals are available daily in many canteens. Religious requirements (e.g. halal meat) are not considered, because the one meat dish per day would become more expensive for everyone and there is a certain insecurity, if people asking now for it would still buy it. Also, the meat is purchased from Hesse and they do not offer kosher or halal meat. Before the pandemic “traditional” meals played a bigger role and they served “grandmas meals” and also advertised it. Because old breeds and varieties are more expensive, it is also not applicable for this kind of canteen, rather a restaurant. To offer a vegan milk alternative for coffee machines will be implemented in the future when they buy a coffee machine with two milk containers. In addition, requirements of the plant drink that the drink components do not sediment must be met for canteens.

I6 suggests canteens to think about new recipes, maybe inspired from different cuisines, so that a certain vegetable, which can be produced in the region is not only served in one single way which increases the “monoculture of the mind” (Shiva, 1993)

„Because I always think it is a pity, when to a certain raw product always only one thing, you can make out of it, is in the head than.“ (I6)

Sustainability concerns

Application for “climate plate” (Klimateller) is a funded possibility. Weakness can be found in vendors that do not need to inform about the origin of the products, hence the calculation of the climate impact will be incomplete. This reveals the need to improve laws (either EU or Germany), to know where the product is from and not where the last processing step is conducted. I7 does not consider subsidies a proper incentive for change. Cooking competences and knowledge (e.g. using less temperature to save energy and reduce loss of nutrients) can be applied in canteens. Also, to use the greens of e.g. radish for pesto (use as much of a product as possible) and avoid food waste with planning the exact dispense per meal.

4. Organizational diversity

Corresponding interview track section

- *What is the situation regarding access to land in the national/local context? What are the main obstacles to access? Are there instruments that facilitate access to land?*
- *What is the situation of young farmers and women farmers? Are there policies encouraging diversity in farmers' age and gender? Are they effective?*
- *What role do producers' organizations play at the national level and in the local context? What is the situation of a farmer who does not want to be part of a producers' organization?*
- *To what extent do public policies support the integration of agri-food chains? What are the consequences of the characteristics of processed products? And on agricultural practices?*
- *What are the main drivers for farmers to sell their products on local markets or through direct sales? How do they influence the type of farming practised? And the characteristics of processed products?*
- *Can you tell me about public procurement for the supply of products to public canteens? What are the factors that most encourage producers to participate? How do they influence the type of agriculture practiced? And the characteristics of the processed products?*
- *Can you think of any other law or policy affecting organizational diversity?*

Access to land:

Respondents report that it is very difficult and expensive to get access to land. Subsidies for example for biogas were rather disadvantaging for (new) farmers to enter the market (I4).

I2 explains that the interest in land is very big, leases are very high, which makes it difficult for beginners. Additionally, the loss of land is also high (approx. 4 ha in Hesse daily is lost, always more or less good arable land, due to the location which is combined with the good soil). Also, the use of photovoltaics leads to loss of land and increasing prices. And biogas is again acknowledged to be a resilient source of energy, which also uses land which is not available any more for food production and leading again to increasing prices.

Biogas was mentioned by I4 as well, with examples of companies (e.g. furniture store) buying land to grow corn, receiving the subsidies and compete with farmers for land. The ABL tries to raise awareness for this topic, but the dynamics in free enterprise are difficult to change.

I5 mentions also the initiative of the ABL, which is called "welfare leases" (Gemeinwohlverpachtung). Landlords have a great influence on the structure of a village, etc. They can decide, if small and diverse farms/businesses are located in an area or big farms with intensive agriculture. ABL claims that administrations often have the task to decide, but are not always ready to do that, therefore the ABL suggests criteria on which to decide whom to give the terrain. (To support rural peasant structures and

to increase the share of organic farming in agriculture.) (<https://www.ablev.de/appendix/news/details/gemeinwohlorientierte-verpachtung>, 01.02.2023).

To find a successor for the farm is the major concern, mean age is less a concern and gender does not play a role at all in the assessment of I1.

I10 mentions that young farmers can get a slightly higher funding (for investments) in the first five years (see part I), however I10 is sceptical that this funding makes a difference when deciding, if a person wants to get a farm. More important factors are: motivation, ambition, size of the farm, political conditions. The latter are critical in the moment, in I10s opinion it will challenge the continuation of farms, if it will be prohibited to use pesticides in all sanctuaries.

Even though it is difficult to access to land and become self-employed, I10 sees a big potential to get attractive jobs in agriculture, as there are many farms which want to advance and look for competent staff.

Structural differences within Germany:

I1 mentions structural differences between "old" and "new" (former GDR) federal states. Farm sizes in Saxony vary in the organic sector from 15 ha in secondary occupation to 4000 ha. However, an increase of CSAs are apparent in the bigger cities of Saxony (Dresden and Leipzig). Also, I1 thinks that the „old“ federal states have a more diverse structure and have more niches, where farmers could join and subsequently grow a market (e.g. for regional products) (I1).

I6 also mentions differences of farm sizes within Germany. In Hesse, the farms are much smaller and which makes it more difficult to work economically efficient. Compared to northern Germany where farms were not divided between heirs or in eastern Germany, where farms were collectivized (former GDR). In Hesse, the farms are very small, that many cannot live solely from the revenues of the farm. For those farmers it can be more attractive to work in the organic sector with the upper price segment and get the higher funding to survive as a farm at all (see chapter Biocultural diversity (at farm level)).

I9 explains that there is a decline in the pig farming in Hesse: until 2 years ago, there were in average 275 pigs in one farm (now less). Hence, this cannot be compared to an intensive animal farming with up to 40,000 pigs, but makes it still difficult for farmers, if media and consumers proclaim not to want to have intensive animal farming. Therefore, I9 urges to differentiate the demands and questions, if the situation is really that bad and what the alternatives are.

Producers Organisations (PO):

In Germany, approximately 30% of the fruit and vegetable farmers are member of a PO. In comparison, up to 90-100% of these farmers are members of a PO in the Netherlands or Belgium. According to our respondent, being a member has many advantages and one disadvantage, namely that the farmer might

not be able to decide by him- or herself. Especially for smaller farms it can be advantageous (I8). The success of POs depends on various aspects, e.g., the location, logistics, quantities, which products they sell, etc. Therefore, a general statement is not possible (I9). I10 assesses POs to be helpful for balancing out the power imbalance on the market with very powerful retailers and single producers who are comparably weak.

If farmers decide to distribute their products via POs depends on the proximity of a potential market and the personality of a farmer: When farmers are close to a city, this makes it possible to sell the products directly or on a farmers' market, if the farmer is interested in such a format. However, with POs it is more likely to reach out to bigger processors, on the cost of the regional or local context (I1).

I4 estimates that POs can make sense to have a stronger voice, but is sceptical, if it really makes a difference/has an impact in the organic sector. I4 has the impression that organic farmers are not as well organized or have access to farmers associations.

I5 made the experience that collectives were not able to arrange a good price, a good buyer or help with marketing of the products. I5 favours if farmers are the entrepreneurs, e.g. to be in charge of the dairy ("the system") not "businessmen". Hence, in collectives it is important that there are farmers active who work for farmers.

I2 might not have completely understood the question, but suggests that POs can be useful, when a farmer wants to enter or start a new market, e.g. with "new" products, where the infrastructure does not exist yet. POs could help in the sense to buy together necessary new processing machines, etc., which would not be economically sound.

Alternative farm organization:

I5 points out that farmers often purchase themselves (e.g. concentrated feed, pasture, etc.), whereas I5 tries to produce as much as possible on the farm, to close the circle on the farm (leading to a bigger diversity), so that the need to purchase themselves is as small as possible.

No regularities or public support for things like ideas, e.g. "brother" calves of milkcows are known to I5.

Local markets and direct trade:

Monetary reasons were mentioned most to be key for going into direct trade.

For I2 several factors influence the decision to use direct marketing, like the location (if there are enough customers in a certain region), farm structure (size) the kind of produce of a farm, hence, if this business model suits the business organization. (Big amounts e.g. 1000 pigs cannot be sold through a farmers shop and would also financially only be an add on. In a farmers shop more processed food and small-scale products? (kleinteiliger Erzeugnisse) would be more suitable.). When these circumstances are given, the factor of the farmers personality also plays a role, if they want to have direct contact to customers.

For I10 the main reason is to increase the own added value by avoiding intermediaries. This is especially interesting for farmers with lower quantity and limited land to generate a suitable income. A small farm might rather (also) grow vegetables, potatoes, etc. to be able to sell it via the farm shop or in front of the farm. Whereas bigger retailers are not interested in such small amounts.

To I6 are factors like work capacities, time effort crucial and speculates that not in every village can be 3 farm shops for direct trade, which also would have an influence. However, if the work capacities allow it, direct trade is often favourable, as better prices can be obtained and farmers can get a bigger revenue. I6 assesses that the personal contact to customers also helps to sell their products. Furthermore, if farmers have e.g. a personal commitment/bond to their animals it can be the case that farmers “*want to be with the animals until the end ... and not just walk them on some trailer*”.

To I5 is “*intermediary trade actually the death of the farmer. ... And there is no more diversity in the trade sector. There are fewer and fewer of them.*”

Public procurement:

Who produces or provides food for public canteens depends on the call for tenders. Different institutions can be in charge, e.g. cities or administrative districts for schools and kindergardens (Gießen) or a property management (“Liegenschaftsbewirtschaftung”) for all canteens of the federal state of Saxony (I1). This property management does not put a big focus on organic or regional products so far (I1). The company of I4 offers goods which are not perfect for processing. Products which are too big, etc. are sold for a lower price which is used in public canteens. For canteens and restaurant businesses processed products are necessary, but only few processors exist in the region, which makes it difficult to increase the number of regional products in canteens, etc. (I9). I6 explains that it is very seldom that farmers have directly contact to the canteens. Usually there is a retailer as an intermediary

When the canteen was completely closed during the pandemic, the canteen put up vending machines for the public to buy components of meals (e.g., pasta and sauce) to prepare at home. However, the demand is regressive and they need to reconsider, because of sustainability concerns, e.g. because of the amount of packaging although it is not more than comparable products from the supermarket (the canteen is certified for ISO 14001). A new artificial intelligence cash register system shall be purchased. The system can calculate how many meals will be likely needed using data from the past additionally with data like weather, bank holidays, combination of meals, etc. The canteen already measures the “garbage” and try to divide the “bad garbage” which cannot be used anymore and the “good garbage”, like bones to make a broth. There are discussions, if in future unpeeled products could be used (if they are only washed or brushed).

Other impact on organizational forms/agriculture:

Respondents consider the impact of the consumer to enable a change of agriculture, too (I1), this corresponds with the experience of I4, that consumers bought any organic product during the COVID-19 pandemic, which has changed now. (I6, I8, I9 also describe the power of the consumers choice when purchasing products). On „world vegan day“ the canteen offered only vegan food for lunch and they received as many positive as negative feedback (I7).

I5 mentioned Nestlé guidelines for regenerative agriculture (<https://www.nestle.de/frag-nestle/klimaschutz-feld-regenerative-landwirtschaft>, 01.02.2023). Also I5 criticizes that there is often no area-dependent animal husbandry, i.e. the farm does not produce enough feed for the animals and must purchase feed, etc. themselves. A circular farming system often does not exist any more like it used to be in the past. Furthermore, I5 illustrates the consequences, if farmers do not have control over finances (or do not receive the prices they need):

“Yes, and I’m on the road 24 hours a day, and if the day isn’t enough, I work nights and all that sort of thing. And then the marriages break up or the whole families break up. That’s all standard now, isn’t it?”

Concerning the **future of retail**, there is a discussion in Germany about how much online trade will be dominating for which products (e.g. maybe not for fresh produce, as consumers might want to use their senses for making a purchasing decision). Also, food areas and consuming on the spot might be a scenario which gains importance in the future, so that shopping becomes more of an event rather than only running errands. I3

5. Agricultural models and the Common Agricultural Policy

Views on agricultural models proposed at the national/regional level

Corresponding interview track section

- *What is the model, or models, of agriculture that has been promoted over the last thirty years?*
- *Has the model(s) evolved over time?*
- *What is the vision of agriculture in the future?*

Respondents mentioned that bigger farms with higher technical infrastructure were in favour for funding which led to a decline in the number of farms, but an increase in size and specialisation.

GAP financial support in the past 30 years was rather for bigger, specialised and engineered farms. Funding of organic farms was not a focus. After the fall of the Berlin Wall there was now also the form of former agricultural production collectives (Agricultural Production Cooperatives, LPG, legal bodies). Next to these structures, there were numerous land returned and was supposed to be farmed. This co-existence was not a harmonious construct to I1 (I1). To I2 the focus lay on the world market and an increase in industrialisation which lead to a decline in peasant structures and a dominance of the trading/distribution structures (retailers who want to purchase large amounts (units) and want to have fewest possible negotiators).

The organic market also tends towards this direction now, however there still exist parallel structures with farmers shops and stores specialised in organic food (I2). Organic farming is supported in Saxony (independent of farm size, however a certain threshold must be met) and has now a higher political significance. Funding programs increase which include environmental protection and biodiversity (I1).

As the organic market is rather new and started in the past 30 years and developed diversly and is just now relevant in the market (I2).

I2 hopes that a significant part of the population realized that the industrial system has major challenges and is not resilient at all which leads to several problems. A solution would be to create resilient peasant and processing structures which existed up to the 1960s. However, also due to the war in Ukraine a converse opinion to excellerate the development of the past to be able to produce enough food for the world. (I2)

I5 mentions that the requirement is to become more and more profitable which increases industrialisation further.

Common Agricultural Policy

Corresponding interview track section

- *How did the old CAP hinder diversity (in the three dimensions)? How did it promote diversity?*
- *How does the new CAP hinder diversity? How does it promote it?*
- *What have been the effects of direct payments? What have been the effects of the Single Common Market Organization? What have been the effects of rural development policies? On small/large farms/ naturally disadvantaged areas?*

I1 thinks that the new GAP goes into the direction of environmental protection (concerning agrobiodiversity, water Framework Directive and the Regulation of fertilising products). I2 considers the

new GAP rather disadvantageous for organic farmers even though it aimed to be more ecological (less premiums and more controls). I2 deems the new GAP does not go "far enough" and these new rules make it more complicated and more demand for controls which makes it more difficult and complex for farmers. I9 agrees that it is very difficult for farmers to overview all instructions from all kind of different legal requirements. They do not have the same resources to fulfill the amount of bureaucracy as a family business compared to a commercial company. Also, to the knowledge of I9 there is no improvement due to the new GAP. Furthermore, changing regulations, laws, etc. every 4 years is not feasible for such businesses, some kind of protection should be implemented (also concerning acquisition of land from major investors). I3 considers the new GAP still focussing on size and funding as the main share of agriculture still will be conventional farming. Sectoral organization (agriculture, environment, economics) of politics is still a topic. (Sustainability means economic and ecological aspects in the organisation of I1).

I5: What stayed the same so far is that there is no set-aside, crop rotation is out of force (not as economically viable as in the previous year), organic farming of conventional farmers with big impacts in the long run (in 2 years or more), fears that some of the conventional farmers will leave the system, those who calculate the costs. So red means 130 kilos of nitrogen application, nothing more. What will become present is an "organic subsistence strategy of conventional farmers", with major consequences in the future. I5 fears that up to 20% of conventional farmers will leave the system in two years... ... And the legal certainty in the individual ecostreems, as they are called, is not yet there, to put it mildly. So there is still a LOT of room for improvement. Especially as far as Hessian politics is concerned, we are present there, and we have to see how things develop. ... I claim that about 20 percent of the farms, if everything remains as it is now, then also with the closure in the year after, so now in the coming year, but in the year after, if it comes so, they will then say: you know what, here, goodbye.

I10 deemed advantageous from the old CAP the possibility to adapt measures to operational requirements, where to focus on ecological Vorrangflächen, e.g. that side strips were more attractive than fallow land. The old CAP was more flexible, to reach goals also with intertillage. Now, the strict 4% rule makes it necessary for some to increase their amount of fallow land:

I10: ...Nowhere is the growth in size promoted to a certain extent. But that there the requirement already changed to some extent. I have just said that this incentive "regional production" for example, (if one is given the things?), that there is a point ranking. (...) Also with the animal farmers, that one naturally rather gets a promotion, if one invests in animal welfare, there for example the Hühnermobile got the last years immense feed. It's a similar story with cowsheds, and pig farmers have, I don't want to say, almost fallen out of the picture. But there is a clear tendency on the one hand towards young farmers, business start-ups or support for not giving up an existing farm, and on the other hand towards animal welfare and the regional aspect.

I2: Agriculture will become more complicated overall and also a control of controls, so what is controlled there, that will be much more and more costly.

I8 to question: And can you think of any other law or regulation or strategy that concerns agrobiodiversity in order to promote it?

...Exactly, so it makes yes, so as I said all, there is such a large construct, where you can pick out quasi, which things are generally eligible for funding and then decide the states themselves, which specific things they then promote. This is then also relatively individual, depending on what is available in the federal states and what makes sense there.

What we also promote in Hesse, for example, are the diverse arable crops.

6. Sustainable and Diverse Food Systems

Sustainable food systems

Corresponding interview track section

Speaking of Sustainable Food Systems:

How does your institution interpret the concept of sustainable food systems?

What are the main obstacles to the implementation of sustainable food systems?

What actions should be taken to promote sustainable food systems?

Abl: S. Homepage

Two pillars for a sustainable food system is when it is ecological and regional to I2.

I2: "A sustainable food system is an ecological (organic?) food system. One with a regional production-and processing structure. Regional, I would define regional in this context as hessian wide, to begin with."

Elkershausen/LS referred to the homepage of the company, which claims to pay their employees tariff (union) wages and to act to create a future. Also, they support and partner with specialised organic stores, as they are key for the organic movement (<https://www.naturkost-elkershausen.de/unternehmen/>, 14.03.2023). To preserve rural structures and jobs is very important to the company. Therefore, the company focusses on trustful relationships, fair prices for all partners and the knowledge about the origin of the products (<https://www.naturkost-elkershausen.de/kooperationspartner/direkterzeuger/>, 14.03.2023). However, the interviewee reported about his opportunities in daily business is to inform customers about farmers who realize more than EG-organic standards, so that not an anonymous product is bought. Also prospectively, they would like to implement a system to trace one product back to the producer, also to distinguish the company, e.g. to other retailers with (anonymous) EU-organic logo. They also work with a project which is certified for social standards (e.g. permanent contract of employees, do they have access to appropriate accommodations, job safety, etc.).

ÖMR does not have a definition for sustainable food systems, however due to the kind of work they do, MCZ thinks that in a sustainable food system as much as possible should be produced organically with short distances, to keep a product in a somewhat small region, to keep processing structures in a certain region to support the local economy, to increase the amount of self-sufficiency. The biggest obstacles for this goal is that there is so little (or nothing) left in some areas and it is very difficult to build structures new

On the one hand, because now other systems have simply settled in that work to some extent, at least in a certain way, and with which most people are somehow satisfied, if only because they don't know what they're missing, so that it's difficult to create something else. And also, of course, in order to rebuild such things, entrepreneurial will and investment are necessary in a space, in a system, at a time when it is very uncertain whether it is worthwhile, whether it will work or whether you will just go crashing into private insolvency. And (...) then somewhere to find the lever - and quite often you come to points where it's like this: I move when he moves, but I move when he moves. Finding the first step. That is very, very difficult.

Sustainable food systems and key policy – synthetic survey

Not all respondents were comfortable to answer all or parts of these questions/ give an assessment/estimation

SUSTAINABILITY	1	2	3	4	5	6	7	

	Very negative impact	<i>Quite negative impact</i>	<i>Mildly negative impact</i>	It does not have any impact	<i>Mildly positive impact</i>	<i>Quite positive impact</i>	Very positive impact	depends
The regulation on seeds and reproductive material		2		2	1			2
Agriculture in protected areas (natural parks, Natura 2000 sites)				2	1	1, RN	RN	2
Quality schemes (PDO, PGI, mountain products)					4	1		2
The regulation of organic production					1	2, RN	1, RN	1, LS: Sehr wichtig, Bürokratisierung negativ, SS: positiv 6? (viel)
Food hygiene regulations	3	2			1, LS	LS		SS: eher kein guter Einfluss, KM (von leicht negativ, bis sehr negativ, es gibt bestimmt welche mit positiven Auswirkungen)
Technical standards for agricultural		TT(QN), 2	1	2	RN	RN		2 Themenblock zu groß

products and foodstuffs								
Producers' organisations				1	TT, RN	3, TT, RN		1
Supply chain contracts				1	1	2		3, LS haben keine klassischen Verträge, Absprachen, SS nicht sehr förderlich?
Food and rural districts						3	2, RN?	SS: Eher positiv
Consumer needs		1			RN	RN		5

Diverse food systems

Corresponding interview track section

Talking about diversity of food systems:

How does your institution interpret the concept of diversity of food systems?

What are the main obstacles to achieving food systems diversity?

What actions should be taken to promote the diversity of food systems?

It seemed that diversity in food systems was quite difficult to grasp for the respondents, especially because sustainable food systems were also a topic talked about. Therefore, answers were difficult to obtain.

MCZ: Diversity is important for them as they try to increase the number of available products (hence farms) in the region, e.g. vegetables. Diversity is also important concerning cattle. There are smaller breeds (in the region, which are beneficial for the grazing land and which are better **Futterverwerter**) which are difficult to market in standardised marketing structures/ways

KM(HMUKLV): spielt eine Rolle, fördern Ackerkulturen und genetische Ressourcen

Diverse food systems and key policy – synthetic survey

Answers on diversity mainly focused on biodiversity, which was most tangible for respondents.

Diversity	1	2	3	4	5	6	7	
	Very negative impact	<i>Quite negative impact</i>	<i>Mildly negative impact</i>	It does not have any impact	<i>Mildly positive impact</i>	<i>Quite positive impact</i>	Very positive impact	depends
The regulation on seeds and reproductive material	TT, 1	TT	2	1	1			KM: alte Sorten und Rassen sind nicht per se gut und besser als neue Züchtungen. (...) Würde ich mir schwertun, das einzuordnen. (...) Weil es gibt sie ja am Markt, aber wenn sie halt nicht gepflanzt werden, (...) dann kann die Verordnung noch so viel sagen
Agriculture in protected areas (natural parks, Natura 2000 sites)				2		2, TT?	1	SS: (mehr) positiv als bei Nachhaltigkeit, KM

Quality schemes (PDO, PGI, mountain products)		1		2	1	1	1	1
The regulation of organic production				2		3	2	SS: positiv 5? (einen weniger als bei Nachhaltigkeit)
Food hygiene regulations	RN	1, RN	1	2				SS: kein guter Einfluss
Technical standards for agricultural products and foodstuffs	RN	3, RN	1					MCZ eher negativ, SS: fördert keine Diversität, KM
Producers' organisations				1	4			1
Supply chain contracts					3, RN	RN		2, SS nicht sehr förderlich?
Food and rural districts					1	6	1	SS: eher positiv
Consumer needs					RN	RN		6



Poland

A. Key informants

Summary table of key informants selected for interview

- As it was pointed out in the desk research report, all regulations regarding the food system in Poland are produced on a national level. There are dozens of institutions responsible for executing these regulations. Many of them have, apart from their central units, the units that operate in each of 16 Polish administrative regions. These entities are designated as operating on national/regional level. They are implementing national regulations on a regional level.
- We have very strict regulations concerning personal data in Poland. We don't collect them unless it is indispensable. We don't have permission to use respondent's names in this report, so we had to skip them.
- In some cases I conducted an interview with more than one person at the same time. I couldn't do anything about it, as some of the respondents didn't feel confident enough to cover all the topics included in the interview scenario by themselves. It was also difficult to meet one on one in some of the public institutions, as the only persons eligible to speak on their behalf are their heads. So their employees preferred to have a companion that could witness that they are not going beyond their competences. Interviews with more than one respondent are designated with a relevant number of "XY" marks.
- I selected respondents who were supposed to deliver information useful from the perspective of supplementing the desk research report. In some cases I didn't ask the respondents all questions from the interview scenario and we focused only on topics corresponding with their professions. People working in public institutions in Poland usually define meeting's time limit before it starts. They also avoid talking about topics not corresponding with their professional duties in a direct way. So I had to choose the crucial questions to ask. I added an extra column to a table below. It indicates the key topics discussed during each interview.

Interviewees				
Level (national/local)	Job / Role in Institution (synthetic description)	Key topics	Name	Identifier Code (e.g. 01; 02; 03)
National	Trainer of agricultural advisors	Technical standards for agricultural products and	XY	CDR

		foodstuffs, farm diversification, food processing on farms		
National	Specialist running a register of agricultural plants.	Local/ ancient plant varieties, testing and registration of plant varieties, seed exchange	XY	COBORU
National	Specialists creating policies on organic farming and other food quality schemes	organic farming, traditional products, quality schemes	XY, XY, XY	DEJ
Regional/ National	Agricultural advisors dealing with farm diversification	Organic farming, farm diversification, situation of young and women farmers.	XY, XY	MODR
Regional/ National	Specialist creating protection plans for protected areas (national parks, Natura 2000 etc.)	Agriculture in protected areas	XY	RDOS
Regional/ National	Employees of the Office of Direct Payments, Social and Environmental Actions	Producers' organisations	XY, XY, XY, XY	ARiMR
Regional/ National	The respondent deals with procedures concerning agricultural land trading.	Access to land	XY	KOWR
National	Activist working in association of rural youth	Situation of young farmers	XY	NGO
Regional	Lecturer in faculty of agricultural economy + adviser helping farmers to obtain funds	Effects of direct payments, effects of rural development policies	XY	UR
Regional	Specialist running regional projects dedicated to rural areas	Regional policies concerning rural areas	XY	UMWM

B Interviews with key informants - findings

1. Introductory part

Interviewee's Identity and expertise - Summary table

The question of the interviewees' cooperation needs an additional remark. The table below lists only the most important institutions with which the respondents cooperate. Most of them represent institutions that are subordinate to the Ministry of Agriculture and Rural Development. All these institutions are therefore networked and cooperate with each other.

Identifier Code	Role/Institution (detailed description)	Collaborating institutions/actors	Have direct contacts with farmers? What are their characteristics?
CDR	An interviewee works at Agriculture Advisory Centre (AAC), which is responsible for training of agricultural advisors. The Centre runs "Small-scale food processing training center"	<ul style="list-style-type: none"> • Ministry of Agriculture and Rural Development, • Veterinary inspection • Sanitary inspection • Regional Centers of Agricultural Advisory • Researchers 	Yes. Farmers interested in small-scale food processing. The mission of the AAC is to train agricultural advisors. But many farmers were also interested in such trainings. So the AAC tries to obtain some external fundings to run educational programs dedicated to the as well. So far AAC trained more than 10 thousand people.
COBORU	Research Centre for Cultivar Testing. It is a public entity subordinated to the Ministry of Agriculture and Rural Development. Main tasks: <ol style="list-style-type: none"> 1. registering of plant varieties 2. legal protection on registered plant varieties 3. plant experimentation and examination of economic properties of different varieties. 	<ul style="list-style-type: none"> • Ministry of Agriculture and Rural Development • Plant Breeding and Acclimatization Institute • Agricultural Advisory Units • Seeds producers 	No.

DEJ	It is a department of the Ministry of Agriculture and Rural Areas responsible for organic farming and others food quality scheme.	Dozens of institutions in agri-food sector - too many to enumerate. They cooperate with all the rest of institutions from where the respondents which recruited.	No.
MODR	The interviewees work in Małopolska Region Agricultural Advisory Centre. They are assigned to the Department of Rural Areas Development. They teach farmers how to diversify their farms activities.	<ul style="list-style-type: none"> ● Ministry of Agriculture and Rural Development ● Agriculture Advisory Centre ● Regional government 	Yes. They train mainly small-scale farmers (average acreage of farms in Małopolska region is 4,16 ha). They cooperate with farmers interested in farm diversification. They claim that many farmers are interested in starting new businesses. They believe that farmers in Poland are not eager to cooperate with each other.
RDOS	Regional Directorate for Environmental Protection in Krakow. It is a regional unit of institution responsible for nature protection. They are engaged in the process of approval of payments for Agri-environment-climate actions which are taken on protected areas.	<ul style="list-style-type: none"> ● Local authorities ● National Parks ● Ministry of Climate and Environment 	No.
ARiMR	The Agency for Restructuring and Modernization of Agriculture Branch Office in Krakow. It is a payment agency ¹ - a regional unit of institution responsible for	<ul style="list-style-type: none"> ● Ministry of Agriculture and Rural Development 	Yes. The Agency runs information points for farmers. Agency employees advise farmers not only on their own programs but also

¹ The agency has a complex structure. It is considered the largest Paying Agency in the EU. In addition to the head office and 16 regional branches, there are also offices at the local level. They are located in poviats (counties). Poviats are an intermediate level of local government in Poland. Poviat comprises from a few to a dozen or so communes. The Agency has 11 thousand employees. In Malopolska Region there are 700 hundred employees.

	<p>implementation of instruments financed both from the European Union budget and national funds.</p> <p>Recently, the scope of the Agency's responsibilities has been expanding. For example, they support rural women's organizations.</p>	<ul style="list-style-type: none"> • Agriculture Advisory 	<p>on projects implemented by other institutions. They also run a helpline for farmers.</p>
KOWR	<p>National Center for Agricultural Support Branch Office in Krakow. It is a regional unit of institution responsible for governing of state owned agriculture lands and regulating food products market.</p>	<ul style="list-style-type: none"> • Ministry of Agriculture and Rural Development • Agriculture Advisory • The Agency for Restructuring and Modernization of Agriculture 	<p>Yes. They organize tenders for the sale or lease of state land. Many farmers have had contact with state-owned land and are interested in purchasing it. They are contacted by two types of farmers: 1. Large producers who own a lot of land in a given municipality and want to further concentrate land. 2. Farmers who want to buy back a plot of land adjacent to their land. They are not interested in significantly expanding the farm, but in improving access to the plots they already have.</p>
NGO	<p>Respondent works in the headquarters of The Association of Rural Youth. Association has been operating (with pauses during the communist period) for 95 years. Activities carried out by local units include sports tournaments, charity campaigns, and patriotic events. Activities carried out at the regional and national level:</p> <ul style="list-style-type: none"> • the Olympics of Agricultural Producers (already 40 editions), summer camps for children. 	<ul style="list-style-type: none"> • Ministry of Agriculture and Rural Development • Ministry of Climate and Environment • Agricultural University in Krakow • Chamber of Agriculture - Farmers' self-regulatory organization) 	<p>Yes. Traditionally, it was involved in education and helping the poor. Currently, members of the Association are considering actions adequate to contemporary challenges. They have contacts with farmers on the daily basis. They interact with farmers on a daily basis. They especially work with young farmers. They consider them to be well-educated, development-oriented and innovative.</p>

	<ul style="list-style-type: none"> social projects, e.g. targeted at the unemployed. events dedicated to the rural culture international cooperation (study trips, youth exchange, Erasmus+). 		
UR	He conducts lectures on agricultural economy. His most valuable experience comes from outside Academia, as he also works as a private advisor who assist farmers, who want to obtain EU funds.	Payment agency (ARiMR)	<p>Yes. He is a member of farmers' family. He has contacts with many farmers as a private advisor, not as a lecturer. He divides farmers into 2 groups:</p> <ol style="list-style-type: none"> 1. Farmers who are very ambitious and build up their farms 2. Farmers who don't have any vision of building up their farms and are not particularly attached to farming. They are mainly interesting in obtaining subsidies.
UMWM	<p>The Marshal's Office in Małopolska Region. This is a unit of the regional government responsible for agriculture and rural areas development. But it has very limited competences on creating their own policies in this topics. They focus on promotion of policies that they find valuable. They also conduct some activities that are delegated by central government. They distribute some UE funds.</p>	<ul style="list-style-type: none"> • Małopolska Region Agricultural Advisory Centre • Ministry of Agriculture and Rural Development • Universities 	<p>They seldom have some contact with rural dwellers and some of them is probably running farms. But they mainly cooperate with other institutions which contact farmers.</p>

Interviewees' views of farmers' and territory's characteristics

Farmers are a very diverse social category. In Poland, there is no single definition of a farmer or farm. Different institutions use different legal definitions. The respondents' statements were therefore conditioned by the kind of farmers they deal with.

"There is a definition according to which running a farm requires owning 1 ha of agricultural land. In KRUS² you can insure yourself with 10 ares. So who is the farmer? The person who has a hectare or the person who has 10 ares? Both definitions are correct. Does one or the other definition mean that any of the persons meeting it actually carry out an agricultural activity? Or produce for the market? The production criterion should be more important." (UR)

Useful information on the definition of "being a farmer" was provided by an interview with representatives of The Agency for Restructuring and Modernization of Agriculture. They pointed out that one of the ways to determine the number of farmers in Poland is to check how many people apply for single area payments. This number is decreasing, but gradually and slowly. At the time of Poland's accession to the EU, there were 1.5 million farms in Poland. Currently, there are about 1.3 million of them. In 2004, an average farm in the Małopolska Region³ had an area of 2.93 ha, now it is 4.20 ha. In Małopolska, farms are still usually very small, but if their area increase is expressed as a percentage, it is significant. The average size of agricultural land in a Polish farm in 2022 is 11.32 ha.

An important issue in Poland is the regional diversity of farms. In the north and west of the country, the average area of farms is much larger than in the south and east of the country. It is therefore impossible to draw up a single characteristic that would fit a large agricultural producer and the owner of a small piece of agricultural land. It is impossible to understand the situation of agriculture in Poland without paying attention to the existing division into large production farms and small farms, which are not the main source of income for their owners.

Respondents agreed that large agricultural producers are entrepreneurial and innovative. Agriculture is a profitable business for them. They are able to adapt to market requirements and invest a lot in the development of their farms. Interestingly, according to a specialist from the University of Agriculture, support from the EU or national subsidies are not important for the largest producers. They themselves are able to generate profit, which allows them to finance investments. Also, direct subsidies are not a significant support for them. If they were canceled, large producers would not be forced to leave their farms. Respondents also pointed out that the lack of agricultural land is a problem for this group of farmers. This hinders the development of their businesses.

Probably the majority of farm owners in Poland are people for whom agriculture is not the main source of income. They do not decide to sell their land because of family traditions. The land is perceived as an achievement of previous generations, which is highly valued. It has an emotional value and is an important

² KRUS = social insurance system for farmers. Insurance premiums in this system are much lower than in the general insurance system. Pensions paid to the insured in KRUS are also lower, but for many people it is more important to pay lower insurance premiums.

³ The report contains many references to the Małopolska Region. The capital of this Region is Krakow, and that is why the respondents associated with it were selected.

element of the identity of the inhabitants of rural areas. Of course, financial matters are also important. Agricultural land is currently a good capital investment. It also provides additional income in the form of direct payments. This income can be increased by leasing agricultural land. Additional benefits include tax and social insurance preferences for farmers.

Among farmers who own small farms, there are people who:

- work outside agriculture and their agricultural activity is limited to performing work necessary to obtain direct payments,
- work outside of agriculture, but also produce food for their own needs,
- work outside agriculture, produce food for their own needs, but also sell its surpluses on the market,
- run agricultural activity and try to obtain additional income from additional activities on the farm, e.g. agritourism, food processing.

Respondents pointed out that the number of farmers belonging to the latter group is increasing. This is due to economic pressure, as it is currently impossible to obtain adequate income from a farm of several hectares. Favourable legal provisions are also an incentive to take up additional activity on a farm. Farmers belonging to this group are presented as entrepreneurial, innovative, ready to acquire new knowledge. They must have extensive knowledge and various skills, e.g. in the field of accounting, marketing, logistics.

Despite the regional diversity and the diversity in terms of farm acreage, it is possible to indicate two common features of all farmers, which were often indicated by the respondents. Firstly, agriculture is dominated by older people. There are also visible differences between young and older farmers. Young people are characterized as more entrepreneurial, focused on enlarging farms and introducing innovative solutions to them.

According to the respondents, the second common feature of all farmers is unwillingness to cooperate. This topic was always raised when the question about producer groups was asked. Respondents claimed that farmers do not want and cannot cooperate with each other. Cultural and historical factors were cited as the reason for this inability to cooperate. Respondents also saw no signs that farmers could be encouraged to cooperate more in the future. It was commonly claimed that this is related to the "mentality" of Polish farmers and it takes a lot of time to change it. One of the respondents also stated that producer groups are a solution invented abroad, which does not work in Poland. On the other hand, another respondent recalled that rural cooperatives exist in Poland. Therefore, it is not possible to explain in a simple way why Polish farmers often avoid joint activities. However, one has to agree with the respondents who pointed to historical conditions that still affect the agricultural sector in Poland. They are important for understanding many of the phenomena described in this report, including fragmentation of farms, regional diversification of farm size, promotion of "traditional" rather than "regional" food.

2. Agrobiodiversity

The choice of growing one variety over another is determined by many factors, which are varied between regions and farms. Respondents pointed out that the impact of a given factor on a farmer's decisions depends on the size of the farm. In the case of large farms, market factors are decisive. Farmers choose the plant varieties that can bring them the greatest profit. A specialist from the Research Centre for Cultivar Testing pointed out that a list of recommended plant varieties is published in each region. The list includes varieties that have the highest production value in the conditions specific to a given region. However, many respondents pointed out that relatively few farmers in Poland use certified seed. Their choice of plant varieties is influenced by economic factors and the search for savings. This is not always a rational strategy, because in many cases the use of certified seed could result in better yields. State institutions are taking steps to encourage farmers to purchase certified seed (subsidies), but so far they have not been very effective.

Factors that are taken into account by all farmers are, according to the respondents, soil quality, climatic conditions and farm equipment.

In the case of small farmers, historical and cultural factors are more important when choosing plant varieties. The agricultural advisor pointed out that many farmers in the Małopolska Region run agritourism farms. Therefore, they choose plant varieties that can be useful for preparing meals for tourists. Important factors that influence the decisions of farmers in small farms have been indicated by a specialist from the Agriculture Advisory Centre:

I noticed a trend that in the case of food processing farmers, family traditions have a significant impact. If a family produced something, even for their own needs, this tradition is the first motivation to undertake such activity. The second important factor is the regulations - farmers analyze on what terms they could conduct such activity and whether it makes economic sense. Then, as farmers expand their operations, they become increasingly driven by customer expectations. (CDR)

A specialist from the Research Center for Cultivar Testing pointed out that provisions were introduced into Polish legislation to adapt them to EU requirements in the field of biodiversity. Regional and amateurs varieties of plants can be registered on their basis. There are 20 regional varieties in the Polish register of plant varieties (4 varieties of wheat and 16 varieties of potato). So far, no amateur variety has been registered yet. Plants of regional varieties can only be marketed in the region of origin, so their inclusion in the catalog of varieties at EU level is for information purposes only. When registering a traditional variety in Poland, it is necessary to indicate for which regions of the country it is a specific variety. Interestingly, in the case of potatoes, all 16 regions are indicated in the register. This may be related to the phenomenon that will be discussed later in the report. Employees of the Ministry of Agriculture pointed out that due to historical conditions in Poland, traditional food is more important than regional food.

A specialist from the Research Center for Cultivar Testing described amateurs varieties as "hobby varieties" that have no production significance. In her opinion, the lack of economic application is the reason why amateurs varieties have not been registered in Poland so far.

The Ministry of Agriculture and Rural Development exempted the registration of regional and amateur varieties from fees, which is to encourage their submission. In the case of regional and amateur varieties, there is no study of their economic value. Only tests for distinctness, uniformity and stability (DUS) are

carried out. In these studies, however, more lenient "uniformity" criteria are used, because the regulations allow for a larger number of plant deviations from the standard in the case of regional and amateur varieties.

The law on seeds also defines varieties of traditional plants that are entered into the national register of varieties, but are not included in the EU catalogue (European law does not allow registration of such varieties). They are defined as varieties 'traditionally cultivated in Poland'. Currently, the register includes the following traditional varieties: millet, 4 varieties of buckwheat, 5 varieties of blue honeysuckle.

Respondents pointed out that state institutions support (from national and European funds) activities to preserve regional and amateur varieties. Farmers are interested in these activities, but are often discouraged by procedures and formalities. Some farmers grow these types of crop varieties, but they do so unofficially. One of the respondents stated that this is a common practice among farmers involved in food processing or agritourism. They produce the raw materials they need for their business. However, they do not need an official certificate, because they sell finished products to their regular customers who trust them.

Separate provisions apply to varieties of fruit plants. However, also in this case they are modeled on European legislation. The Research Center for Cultivar Testing prepares a list of fruit plants with an officially known description. It is divided into two parts (List A and List B). List A includes varieties that have passed the full registration procedure and have an official description. List B includes varieties whose description is provided by the applicant. Entry on List B is free of charge, which is supposed to be an additional incentive to submit varieties. List B therefore favors biodiversity as it encourages the registration of new varieties.

Some respondents mentioned that actions are also taken in Poland to preserve native animal breeds. Activities in this area are co-financed under the Polish RDP. Scientific research on native breeds and activities promoting their breeding and consumption are also constantly conducted. An agricultural advisory worker from the Małopolska Region stated that she did not know any farmer cultivating traditional plant varieties, but she knew many examples of keeping native animal breeds. It seems that traditional animal products are also more widely available in stores.

As mentioned above, the respondents pointed out that the state policy is aimed at encouraging farmers to use certified seeds.

"In Poland, the use of certified seed is still too small. Plant breeders often raise the issue that in Western Europe, many more farmers use certified seed. About 30-40% of farmers use it in Poland. This is the weakness of our agriculture." (COBORU)

Many farmers use Farm Saved Seed (FSS). In some cases it is allowed to use FSS produced from certified seed. However, it is not allowed to exchange such seeds with other farmers. In the case of varieties not protected by law, there are no restrictions on the exchange of seeds. Respondents pointed out that in the countryside many things happen unofficially and it is difficult to carry out thorough checks. Farmers practice seed exchange. It can be argued that their main motivation is the search for savings, not the desire to increase biodiversity.

Respondents could not identify any specific state policies encouraging farmers to seed exchange.

3. Biocultural diversity

According to representatives of the Ministry of Agriculture and Rural Development, organic farming in Poland is developing mainly due to state support. During the interview, they referred to the "Framework Action Plan for Food and Organic Farming in Poland for 2021-2027" adopted by the Ministry, which was discussed in the desk research report. According to the respondents, the beginnings of the policy aimed at promoting organic farming are related to Poland's accession to the European Union. Initially, the interest of farmers in organic production was very high. This was due to the fact that support was granted for each hectare of crops declared as organic. This led to the fact that farmers did not produce organic food, but only maintained ecological "lawns" (expression used by one of the respondents). This was clearly negatively assessed by the representatives of the Ministry of Agriculture and Rural Development. On the other hand, representatives of The Agency for Restructuring and Modernization of Agriculture, working in its branch in Kraków, pointed out some advantages of such a solution. In their opinion, this support encouraged mowing meadows in mountainous areas, which are characteristic of the Małopolska Region. This was conducive to preserving the traditional landscape of the Polish mountains.

Currently, the support system for organic farming is being changed in Poland. Subsidies are now linked to the amount of organic products placed on the market. This has led to a reduction in the number of organic farms. However, the aim of the policy pursued by the Ministry of Agriculture is to increase the production of organic food. The new way of allocating support is to help farmers build a strong position on the market. It is expected that this will allow them to maintain organic production after the end of state support. The introduced changes quickly brought positive effects. Representatives of the Ministry referred to data according to which in 2021, despite the smaller number of organic farms, the production of organic food increased by 15%. They expect a further dynamic increase in the value of this indicator. Interestingly, the employees of The Agency for Restructuring and Modernization of Agriculture, which pays support to organic farmers, see it differently:

"For now, the subsidies are not high enough to offset the loss of crops and the increased workload in organic farming." (ARiMR).

Agricultural advisory workers pointed out that many farmers in Poland, especially in small farms, run organic production, but they do it unofficially. They do not want to register organic production because they are deterred by the procedures and high costs of certification.

An employee of The Agriculture Advisory Center was of a similar opinion. According to her, farmers. According to her, farmers were demotivated by the need to undergo an administrative procedure related to certification. Unlike the representatives of The Agency for Restructuring and Modernization of Agriculture, she believed that the support under the Polish RDP is a positive stimulus encouraging farmers to introduce organic production methods.

Representatives of the Ministry of Agriculture pointed out that currently (at the time of the interview, late 2022) a new law on organic farming is being processed in the Parliament. It contains further incentives to take up organic production, including support for farmers for the purchase of organic seed and for the purchase of fertilizers for organic production. On the other hand, the new regulations aim to tighten the system of control and certification of organic production. Therefore, the state policy does not go towards reducing the administrative burden, which is perceived by some as a barrier to the development of organic farming. According to representatives of the Ministry of Agriculture and Rural Development, the control system plays a key role in the development of the organic food market. The purpose of the regulation is to ensure high competence of controllers working in certification bodies. According to respondents, problems in this area have discouraged farmers from participating in this food quality scheme in the past. Therefore, the aim is to ensure that farmers have confidence in the correct operation of the entire system. The second objective is to build trust among consumers who need to be sure that food labelled as organic actually meets the relevant standards.

During the interviews, much attention was paid to the commercialization of traditional products and the promotion of local products. Among the respondents working in the Ministry of Agriculture and Rural Development there was a person directly responsible for creating the policy in this area. In her opinion, the whole process started when Poland joined the European Union in 2004. It was only then that traditional and local products began to be searched for and knowledge about them was promoted among consumers and producers.

Polish regulations concerning traditional and local products are based on European solutions. The interlocutors pointed out that despite the common legal framework at the European level, the situation regarding the use of food labels varies in different countries and is conditioned by historical factors. In their opinion, the leaders in this field are the countries of Southern Europe. National product designations have a long history there, which later inspired the creation of the EU system. In northern and central Europe, the labeling system is still developing and needs time to fully develop.

"So far, we have registered 44 products in EU food quality schemes. I believe that this is not a little, considering that these systems are difficult and demanding. We are working together with food producers on further applications. It is also necessary to build awareness of signs on the consumer market. (...) We lag behind Italy, Spain or France." (DEJ)

Interviewees from the Ministry of Agriculture pointed out that each EU Member State has a different system for evaluating applications for product registration. Only when a given country considers that the application meets the requirements, it is sent to the European Commission. In Poland, applications to be sent are approved by the Minister of Agriculture and Rural Development. He/she is supported in this by a special advisory body - the Council for Traditional and Regional Names of Agricultural Products and Foodstuffs. Pursuant to the "Act on the registration and protection of names and designations of agricultural products and foodstuffs and on traditional products", the Council consists of "persons distinguished by their knowledge of matters related to regional and traditional products, in particular in the field of industrial property law, Polish tradition and culture and ethnography. Representatives of the Ministry believe that the experts gathered in the Council are a significant support in the decision-making process.

The respondents emphasized that for Poland the most important element of the food quality policy is the Traditional Specialty Guaranteed (TSG) scheme. In their opinion, Poland is the leader in terms of registered TSGs. However, they feel that this food quality system is marginalized by the European Commission, which values geographical indications more. The Polish authorities are trying to cooperate with several other countries in order to convince the Commission that this system of traditional specialties is important to us. It includes products that share a common tradition and a common method of production, but are not linked to a specific region. The countries in Central and Eastern Europe have a different history than the countries of Southern Europe and it is necessary to take their perspective into account at the European level.

Employees of the Ministry of Agriculture and Rural Development expressed the belief that the European Commission takes too little action to increase the recognition of protected designation of origin (PDO), protected geographical indication (PGI) and Traditional Specialty Guaranteed (TSG). These activities are undertaken primarily on the external market, while promotion is also needed on the European internal market.

The Polish Ministry of Agriculture conducts very intensive activities to promote food quality schemes. At first, in Poland it was very difficult to identify the first products that could be certified. Consumers did not know food labels and could not identify any product with them. For these reasons, the Ministry of Agriculture has created an information and promotion tool that supports the process of searching for such products - the "List of Traditional Products". The interlocutors described it as a "kindergarten for EU markings". They meant that the introduction of products to the list of traditional products will help to raise awareness about food labeling and will allow to identify further products that will receive EU certificates. Currently, there are about 2,000 items on the list. These are not only food products, but also local dishes. Representatives of the Ministry of Agriculture emphasized that the National List of Traditional Products is not a food quality system, but an information and promotion tool.

Applications for entry into the list are accepted by the authorities of each of the 16 Polish regions. The regional authorities verify them and then submit them to the Minister of Agriculture. Applications can be submitted not only by producers, but also by other interested parties, e.g. non-governmental organizations. Different regions use this tool differently. Some are very active and create their own extensive system of identification and promotion of traditional products. In other cases, the authorities of the Region do not pay much attention to this activity. According to the employees of the Ministry, from the perspective of the regions, the List of Traditional Products is rather a tool to maintain the cultural identity of the region, and not an element of the food quality policy. This is confirmed by the information obtained during an interview with representatives of the authorities of the Małopolska Region, which, due to historical and geographical conditions, is the most active in promoting traditional products.

Agriculture and rural development policy in Poland is created at the national level. It is carried out mainly by regional branches of central institutions. Regional self-governments do not create significant regulations and have limited possibilities to conduct their own policies. However, the Małopolska region is an example of a region that is trying to be exceptionally active in this respect. Its authorities take action regarding bio-cultural diversity. This Region is a leader in activities for the registration of traditional products. Małopolska is also the region with the largest number of products with EU certificates.

Numerous activities promoting the idea of traditional products are carried out in the Małopolska Region. An extensive procedure for evaluating and approving products submitted to the List of Traditional Products was created. This adds seriousness to the whole project, which increases its attractiveness. In the region of Małopolska, the Council for Traditional Products and Culinary Heritage was established. It pre-evaluates applications for inclusion in the list of traditional products. A meeting is then organized during which applicants must answer any questions they may have. It often happens that it is a colorful and joyful meeting attended by applicants dressed in folk costumes and folklore groups. Usually there is also the opportunity to taste traditional products. Employees of the Marshal's Office stated that such setting of the Council's meetings is conducive to the promotion of traditional products.

Experts from the Council and employees of the Marshal's Office provide support to the applicant. They are proud that products that have passed the regional procedure are easily entered on the List of Traditional Products kept by the Ministry of Agriculture and Rural Development. This information was confirmed in an interview with representatives of the Ministry.

The Marshal's Office in Krakow has introduced an additional incentive to submit traditional products, which is not present in other regions. It is the patented food label "Traditional Product from Małopolska". Entities manufacturing products entered on the List of Traditional Products may apply for the possibility of using the label.

As indicated above, the List of Traditional Products is informative. It seems that applicants and consumers do not always understand the idea well. Many people believe that listing products gives them some legal protection. For example, many smoked products were submitted for inclusion on the list, because their producers hoped that this would protect them against possible tightening of smoking regulations. Similarly, the "Traditional Product from Małopolska" mark also does not provide any protection to producers. Traditional products can be produced without any restrictions by all interested parties.

An interesting initiative of the Marshal's Office in Krakow are courses for "baca" – shepherds, people traditionally dealing with sheep grazing in the mountains. The courses were to encourage new people to take up this work so that the tradition could be preserved. The unexpected result of these courses was the training of the first women grazing sheep. Traditionally, "shepherd" was an all-male profession.

The Marshal's Office supports the development of trade in local products. It is planned to create a new place in Krakow where farmers could sell their products. However, this is a long-term plan that will be implemented in a few years.

Some respondents commented on Polish regulations on the production and sale of food on farms. They were mentioned in the desk research report. The interlocutors assessed them positively. In their opinion, the Ministry of Agriculture strives to create the most favorable conditions for the development of such activity. However, there are still some legal restrictions. It is impossible to freely produce alcohol, which many farmers are interested in. Another problem is the high sanitary requirements for the processing of animal products. As a result, the processing of plant raw materials is developing more dynamically. In Poland, there are two institutions that control sanitary conditions. One, subordinated to the Ministry of Health, controls plant production. The second institution is subordinate to the Ministry of Agriculture and is responsible for controlling animal production. This duality causes difficulties in unifying the requirements for food producers.

Respondents had no knowledge of policies related to promoting a healthy and sustainable diet. The Polish government conducts activities aimed at promoting a healthy diet, but they are not very intensive. In 2021, a higher tax rate on sugar-containing beverages was introduced. A program promoting vegetables, fruit and dairy products is implemented in schools. The National Institute of Public Health prepares the public dietary guidelines. All these activities focus on promoting a healthy diet. The topic of the impact of diet on the environment is rather not included in the existing policies.

4. Organizational diversity

Access to agricultural land in Poland is limited by the law adopted in 2016. The purpose of the regulation is to ensure access to land for local farmers. It is also intended to prevent the purchase of land by private entities, in particular by foreign private entities.

At the beginning of the 21st century, when Poland's accession to the EU was being negotiated, one of the common fears was the threat of foreign entities buying up Polish land. This problem was publicized by opponents of accession to the EU. They pointed out that agricultural land in Poland is much cheaper than in Western European countries and therefore constitutes an attractive investment. It was believed that this phenomenon may occur especially in the western part of the country, because there are large farms, partly in decline after the communist period. This was prevented by a 12-year transitional period, during which the possibilities of purchasing agricultural land in Poland by foreigners and large companies were significantly limited.

The transition period ended in spring 2016. An expert from the National Support Center for Agriculture stated that the Polish government had to pass a law regulating access to agricultural land, because otherwise it would become a commodity like any other in the European Union. Despite the increase in land prices since 2004, the threat of mass land acquisition persisted. The new regulations were to result in the largest possible area of agricultural land going to "individual farmers". An individual farmer is defined in Polish law as a natural person who is the owner or lessee of agricultural land not exceeding 300 hectares, having agricultural qualifications and residing in the commune where one of the agricultural real estates included in the family farm is located. Only an individual farmer can run a family farm.

"The law adopted in 2016 changed a lot in terms of access to land. The land trading market in Poland is not a free market, it is a regulated market. A rural inhabitant can easily buy a flat in Krakow. But a resident of Krakow cannot easily buy agricultural land in the countryside. So there is no balance between them. Access to agricultural land is difficult for people who are not individual farmers. But it must be remembered that in the case of private land of up to 30 ares and state land of up to 1 ha, there are no restrictions for non-farmers. In the case of people up to 40 years of age, there is also some facilitation when buying state-owned land with an area of over 1 ha. In the case of older people and larger plots of land, the aforementioned restrictions on access to land appear. The Polish constitution states that the family farm is the basis of the agricultural system in Poland. These regulations are intended to ensure the implementation of this principle." (KOWR)

Despite the regulations that favor individual farmers, in Poland they have a problem with access to agricultural land needed for farm development. This opinion appeared in the statements of several respondents. The problem is caused by regulations favorable for farmers - direct subsidies, tax exemptions and a separate social security system. More information on this will be provided later in the report.

Respondents presented varied opinions concerning young inhabitants of rural areas. Most of them paid attention to rural aging. In Poland, the dominant way of entering the farmer's profession is taking over a farm from one's parents. Some respondents pointed out that young people are reluctant to do this. They often acquire education not related to agriculture and emigrate to places where they can work according to their qualifications.

A slightly different explanation of this problem was presented by a specialist from the University of Agriculture, who also advises farmers on obtaining support from national and European funds. His opinion deserves consideration as he is young, comes from a farming family and works with many young farmers. He linked the problem of generational change in the agricultural sector with the prospects for the development of family farms. In his region, the possibility of farm development is limited by the problem of access to agricultural land.

"The amount of set aside agricultural land is not increasing in my region. In my family, many young people work on the farm. Same with my neighbors who have large, growing farms. Young people want to take over a prospective business. I am not surprised that young people do not want to take over farms without such a prospect. It's better to go to hired work and have a certain salary. This is the normal order of things. In Poland, we have an estimated 1.3 million farms, but it is estimated that only 50,000 produce for the market. These 50,000 farms would be able to take over all the other farms. In my region, farmers would be able to take over any land. They can take over a farm of 3.5 hectares, 20 hectares or even 50 hectares. The more the better! A large agricultural entity is able to generate much more income than any contract work. Such a farm is attractive to young people. A farm with an area of 300 to 500 ha guarantees an annual income of over one million zlotys⁴, with very conservative estimates." (UR)

In conversations with experts, the topic of differences between the older and younger generations of farmers was often raised. It was pointed out that young people are better educated and focused on the development of their farms. They introduce new technologies to agriculture and are interested in innovation. They try to develop their farms by acquiring new land or by undertaking additional non-agricultural activities, farm diversification. It can be argued that such opinions result from the stereotypical perception of young people as more dynamic and innovative. On the other hand, young people take advantage of the opportunities resulting from new technologies and the economic development of Poland. Older generations did not have such opportunities for personal development due to historical and geopolitical conditions. A lot of information on this subject was provided by an interview with a representative of The Association of Rural Youth.

"Young farmers have a completely different outlook on agriculture, which they see as their business. They have an entrepreneurial outlook. When someone focuses on agriculture, he spends a lot of time on gaining knowledge, searching for innovations. This is conspicuous. When EU money came in, newer

⁴ PLN 1 million = EUR 250,000

machines were introduced. But new machines were not always followed by mental and intellectual development. And now many of my colleagues are graduates. And even if they do not have a university degree, they are looking for new solutions and look at agriculture as a business. We know very well that small farms have a problem to survive and be able to compete on the market. Often it's the little things. Farmers have opened up to social media, thanks to which they can promote themselves. Young farmers are also looking for opportunities to obtain additional income, e.g. in connection with organic farming, non-agricultural activities. Young farmers are entrepreneurial, innovative and willing to develop. If someone young takes over a farm, they not only take care of the development of the machine park and enlargement of the farm, but also try to be innovative." (NGO)

Based on the respondents' statements, it can be argued that greater involvement of young people in agriculture can lead to a more diverse food system.

In Poland, there is a network of secondary agricultural schools and agricultural universities. Subsidies for young farmers are also available, mainly from European funds. However, there is no information on wider state activities aimed at encouraging young people to become farmers. NGOs, such as The Association of Rural Youth (see section 1.1), are active in this field. Persons up to 40 years of age are exempt from the obligation to have 5 years of farming experience when purchasing agricultural land. In the EU programming period 2014-2020, people aged up to 40 may receive support for the purchase of fixed assets (PLN 150 thousand = EUR 33.5 thousand). In addition, area payments are higher for young people for 5 years from the takeover of the farm. According to an expert from the University of Agriculture, this support is not attractive to young people in the Małopolska Region, ie it does not encourage them to take over farms. In the past, there were also incentives for older farmers to transfer their holdings to successors. This support has now been discontinued. Many farmers handed over farms to young people only formally in order to obtain additional financial resources. Currently, an incentive has been introduced to maintain agricultural activity at retirement age. In the past, retirement meant ending farming activities. Now you can still be an active farmer despite retirement.

Respondents noted the growing involvement of women in agriculture.

"From my experience in coordinating events, I can say that more and more young women are working in agriculture. More and more of them will be trampled in the Olympiad of Agricultural Producers, which we organize. I know women who run very large farms. I have a friend who, after her father's death, runs one of the largest farms in the region with her mother. And they're doing great. There are more and more young women who want to work in agriculture, who want to fulfill themselves in agriculture. Women also allow us to think about organic farming or processing, shortened supply chains. This may be their domain. Farms run by men could be larger. Or when couples run farms together, men could focus on this more physically demanding work, and women could engage their strength in ecological, local and agricultural activities." (NGO)

According to the quoted representative of the NGO, greater involvement of women in agriculture is conducive to farm diversification. This theme also came up in several other interviews. Respondents pointed to the fact that gender diversity leads to business diversity, as different people are predisposed to deal with different businesses or work related to agriculture.

A farm advisory worker drew attention to the growing social activity of women. In Poland, there are several thousand Groups of Country Housewives. They have a long tradition, as the first Groups were established 150 years ago. They used to be mostly older women. Now more and more young women are involved in their activities. It is also becoming more and more common for men to become members of the Groups. The state actively supports these organizations. A simple way of obtaining legal personality was created for them. Thanks to this, they can obtain financial resources. A special state fund has been created to support their activities. This policy is bearing fruit. For example, Groups of Country Housewives prepare proposals for traditional products, which are then entered on a list maintained by the Ministry of Agriculture (see section 5).

The growing importance of women in rural areas is also related to the fact that they are increasingly in power in rural areas. In the countryside, the number of women elected as mayors or village leaders is increasing.

All respondents had a similar opinion on cooperation between farmers. According to them, producer organizations and producer groups do not work well in Poland. This is due to the reluctance of farmers to cooperate. This reluctance is explained by the "mentality of Polish farmers", "bad experiences", "historical conditions". Some respondents stated that the situation will change, but it will take time for this change to take place. Other interlocutors pointed out that producer groups are a solution invented in other countries, which is not tested in Poland. On the other hand, the representative of the NGO pointed out that projects supporting the development of rural cooperatives in Poland were already implemented in the 19th century. This is certainly not a new topic. There is no doubt, however, that the current activities for the development of producer groups and producer organizations are closely related to Poland's membership in the EU.

Representatives of The Agency for Restructuring and Modernization of Agriculture pointed out that support for agricultural producer groups and producer organizations was included in each Polish Rural Development Program to date. According to experts, the greatest interest in this support was immediately after joining the EU in 2004. In this initial period, 27 groups of producers were established in the Małopolska Region. They were then entered in the register kept by the Agency, which allowed them to receive support. To date, only 9 of these organizations are listed in this register. Some of them may have ceased their activities. Others may still be operating but have chosen not to renew their registration because doing so would require them to meet the DRP requirements. It makes no sense to them, because producer groups operating for more than 5 years are excluded from the possibility of obtaining support.

Support for producer groups is limited to 5 years, because it is assumed that after this time they should have a strong market position that will allow them to function without subsidies. The representatives claimed that a large part of producer groups is actually able to find their place on the market. Others cease their activities when there is no subsidy. The Ministry of Agriculture is trying to counteract this. Currently, farmers applying for support as a producer group must prepare a business plan. This requirement is to make it easier for them to gain a good market position in the future.

Specialists from The Agency for Restructuring and Modernization of Agriculture stated that producer organizations operate better than producer groups in the Małopolska Region. In the southern part of the region, in mountainous areas, there are many fruit growers and vegetable producers. Thanks to the

support from the EU, they expanded fruit distribution centres, thanks to which they can deliver their products to large supermarket chains.

The main factors motivating farmers to sell products on local network markets or through direct sales are described in the Desk Research report. During the interviews, experts pointed to favourable provisions that encourage farmers to undertake additional activities on their farms. Farmers are exempt from income tax and in many cases do not have to pay VAT. They also have the option of enrolling in a social insurance system dedicated to farmers. At the national and regional level, intensive promotional and educational activities are carried out regarding direct sales and food processing. An important factor is also the growing interest of consumers in organic food and food purchased directly from the producer. The dissemination of direct sales is also associated with an increase in entrepreneurial attitudes among women. For many farmers, the search for additional sources of income is a necessity due to the economic situation. It is impossible to earn enough income to support a family from the sale of raw material from a few-hectare farm. For some farmers, direct sale is a way to continue farming without having to expand their farm.

Respondents were asked about green public procurement in Poland. Their answers are consistent with the findings of the Desk Research Report. In Poland, guidelines have been issued encouraging the inclusion of organic food in public procurement. Their use is not monitored in any way. It should be assumed that few public institutions use them. One of the interviewees mentioned the EU School Program for Fruit, Vegetables, and Milk.

5. Agricultural models and the Common Agricultural Policy

Views on agricultural models proposed at the national/regional level

Opinions of respondents on the agricultural models promoted in the last 30 years vary greatly. Some experts claim that it is impossible to indicate any specific model of agriculture that is promoted in Poland. Other respondents pointed to very specific policies that shape the future of Polish agriculture.

One of the main topics that have appeared in debates on the future of agriculture in Poland in recent decades has been the need to enlarge farms. It was pointed out that only large and well equipped farms could supply a large amount of raw material to the market and thus compete with farms in other European countries. Agricultural policy did not fully reflect this narrative. Many activities were undertaken to support small farms. This policy has led to a situation where there are 1.3 million farms in Poland, but only a small part of them deliver products to the market. However, the advantage of these activities was the development of rural areas. The material situation and quality of life of the inhabitants of rural areas improved. At the same time, a group of several tens of thousands of farmers has also emerged, which runs prosperous farms. Thanks to their activity, Poland is an important food exporter in Europe.

According to an expert from the University of Agriculture, no specific model of agriculture is promoted in Poland. During the interview, he compared the measures included in the Polish RDP 2014-2020. The

measure "Modernization of farms" supports the development of large farms. The rules for applying for support are very restrictive, which means that farmers who actually develop their farms apply for support. Support is granted for investments that really increase the productivity of farms. The measure "Restructuring of small farms" is addressed to a completely different group of recipients. The vast majority of these are people who live on non-agricultural income. However, they do not give up owning a farm because it brings them additional profits thanks to direct payments. According to the expert, most of the grants allocated under this measure do not increase farm productivity. Investments are often ill-considered and made only because of the possibility of obtaining financial support.

"We are trying to help everyone and we are not helping anyone. It is easier to spend money through the program "Restructuring of small farms", because hundreds of thousands of farms qualify for it and we can spend the huge money that Poland has guaranteed in the EU budget faster. In more complex programs it would be harder to spend that money." (UR)

According to the representative of the National Centre for Agricultural Support, Poland pursues a consistent policy of supporting agriculture. This is evidenced by the provisions regulating the trade in agricultural land. They are designed in such a way that as much land as possible goes to individual farmers, i.e. farmers running family farms, the area of which does not exceed 300 ha. This direction of policy was set out in the Constitution of Poland, which was adopted in 1997.

Representatives of the Ministry of Agriculture and Rural Development and The Agency for Restructuring and Modernization of Agriculture also claimed that the development of agriculture in Poland is strictly defined. In their opinion, the state supports not only the development of agriculture, but also the development of rural areas as such. This means that various types of non-agricultural activities are being developed. This group of experts believes that Poland is increasingly supporting the development of organic farming and activities related to environmental protection. The development of the largest farms is subsidized, but diversification of the small farms is also supported.

"We are moving towards the consolidation of farms so that they produce more for the market. Direct sales of food and food production on farms, which is very popular in Małopolska, are also developing. The direction seems to be set." (ARiMR)

According to the statements of experts working in government institutions, agriculture in Poland is developing to a large extent in accordance with the directions defined at the European level. Their opinions contrast with those of the University employee. The scientist expressed his private views, but at the same time indicated a consensus among Polish agricultural economists who criticize the targeting of financial support under the RDP. More information on this subject can be found in section 5.2.

A view similar to that of government employees was expressed by a representative of a rural NGO.

"There will be a division into large farms focused on expanding into new markets. On the other hand, there will be smaller farms for which organic farming will be more important." (NGO)

In talks with experts, the topic of defining policy towards agriculture at the central level appeared. This resulted from the selection of experts who were interviewed. Many of them represented regional branches of government institutions. They were therefore responsible for implementing policies in a given region that were defined at the national and European level. These experts pointed out that Poland is a

large and diverse country. There are significant differences between regions due to geographical and historical conditions. As a result, the policy created at the central level affects different regions of Poland in different ways.

"We have always believed that programs should be constructed regionally, because we, as the Małopolska Region, lose some of the subsidies due to the setting of some requirements for larger farms. For example, we had problems with the purchase of equipment as part of supporting the modernization of farms. The criterion for the selection of machines was established on the basis of the guidelines of the scientific institute, which favored machines that made sense on farms of at least 40 hectares. We need a machine adapted to 3 hectares. Our farmers could not use some of the programs. Attempts were made to compensate for this by introducing quota limits for individual regions. If Małopolska is included in the national basket, our farmers lose out. However, we gain from environmental schemes, because we have farms that use payments to areas facing natural or other specific constraints." (ARiMR)

An expert dealing with agricultural land trading pointed out that the regulations governing this market are the same for all Polish regions. They specify, for example, the same size of plots for the whole country, which can be sold without any restrictions. The average size of farms varies significantly between regions, which means that these regulations have different effects in different parts of the country.

Similar comments were made about policy at the European level. It was pointed out that specific European policies are inspired by initiatives launched in specific countries. These solutions do not necessarily work in other contexts.

5.2 Common Agricultural Policy

Rural development policies are assessed positively by respondents. Their statements coincide with the prevailing opinion in Poland that EU membership is beneficial for the country and for rural areas in particular.

"20 years ago, rural areas and agriculture looked different. There were not only subsidies for production, area, animals, but also subsidies to change the image of the villages. In addition to The Agency for Restructuring and Modernization of Agriculture, other institutions support the development of rural areas, e.g. the development of agritourism. Many different programs have been implemented in this area. EU and national funds have greatly changed the Polish countryside." (ARiMR)

The impact of the CAP on the diversity of the food system is noticeable. An expert from the University of Agriculture confirmed that the Polish DRP affects agro-biodiversity, because subsidies encourage farmers to preserve traditional varieties of plants and animal species. Intensive research and promotion activities in this area are also financed from national funds. The Polish government also conducts a very active policy of developing organic farming. It is perceived as an opportunity for the development of the Polish agri-food sector. Polish farmers use less artificial fertilizers than farmers in Western European countries. In the public debate, GMO food is highly criticized and poorly assessed. It is therefore believed that it is relatively easy for Polish farmers to adapt to the requirements of organic production. However, this will only be possible if such production is profitable. Experts were divided on this issue. Some of them argued that

support for organic production does not offset its higher costs. Other respondents pointed out that organic farming is developing thanks to subsidies.

All experts agreed that CAP increases bio-cultural diversity. However, it is difficult to estimate the impact of the CAP itself, as many activities in this area are financed from national funds. However, the CAP sets directions for action and there is a visible synergy between the Polish RDP and national policies. Farm diversification, development of local and traditional products, activities of rural NGOs and various initiatives related to rural culture are supported. Such activities are perceived as an opportunity for the development of rural areas, due to the fact that there are still many small family farms in Poland.

Actions are also taken to promote organizational diversity. Experts unanimously pointed to problems with the development of producer groups and producer organizations in Poland. However, there are also initiatives to shorten supply chains, especially direct sales projects. Initiatives in this area are financed both from RDP and from national funds. Many initiatives on shortening supply chains are also taken from the bottom up, as part of citizen involvement. Greater involvement of women and young people in agriculture helps to increase the diversity of the food system.

However, according to some experts, the CAP also has a certain negative impact on Polish agriculture. This thread appeared most strongly in the statements of respondents dealing with direct payments and in a conversation with an expert in the field of agricultural land trading.

"Subsidies >>cement<< Polish agriculture. I am 100% sure of that. They cement it statistically. Although statistically, as a state, we spend huge amounts of money on agriculture, the changes are small. Every year, from a few to several thousand farms decrease, and the average area of a farm grows by 10 ares a year. Direct subsidies, in my opinion, have led to the fact that people who own land and do not cultivate it do not want to sell this land, because they benefit from the mere fact of owning it. People who work outside of agriculture, but own a few hectares, will not sell them, because they get an additional profit every year. This land is usually cultivated by someone else. Its tenants usually pay the agricultural tax for the owners, and the owners themselves only profit. They will sell the land only in case of some sudden financial need." (UR)

Representatives of The Agency for Restructuring and Modernization of Agriculture stated that for landowners who are not engaged in agricultural production, direct payments are simply social support. An employee of an institution dealing with land trading noticed that subsidies increase the price of agricultural land, because very few people want to sell it. However, the demand for it is very high, because there are farmers who dynamically develop their farms. An expert dealing with agricultural economics stated that the liquidation of direct payments would lead to an increase in agricultural production in Poland. This would happen thanks to the enlargement of farms by large producers. He also pointed out that direct payments have little impact on the activities of large farms. This is evidenced by the fact that they agree to lease land for which the owner collects subsidies (note: the relevant institutions are trying to eliminate this phenomenon by tightening the control system).

Direct payments inhibit the expansion of farms in Poland. However, it should be remembered that the average farm in this country is smaller than in many other EU countries. Experts say that there is no chance of abolishing the subsidies, because it would require a consensus at the EU level. They also note that the changes related to the enlargement of farms are taking place anyway. However, based on the interviews,

it can be concluded that subsidies have some positive impact on the diversification of the agricultural sector. Thanks to them, the villagers keep small farms. They can be the basis for various activities in the field of bio-cultural diversification. One of the experts also pointed out that the current crises (COVID, war, inflation) may cause some rural residents to increase food production for their own use.

6. Sustainable and Diverse Food Systems

6.1 Sustainable food systems

None of the respondents was able to provide a definition of a sustainable food system that is used in the institutions they represent. All the experts knew the term and intuitively knew what it meant. However, there are no specific definitions at the institutional level.

The slogan "sustainable food system" comes up in debates, in our conversations. I know that this is an important topic that is discussed at important conferences. But we don't have any elaborated definition.
 (NGO)

Some respondents asked for a definition of a sustainable food system that would make it easier for them to answer further questions.

The problem was the construction of the question, which assumed that respondents had to specify the way in which their institution interpreted the concept of sustainable food systems. In most cases, they did not feel empowered to hypothesize about these interpretations.

However, the analysis of the interviews leads to interesting conclusions. Respondents often equated "sustainability" with "diversity".

Respondents were asked to assess the impact of factors they did not know about. In Poland, government institutions are very specialized. A person who deals with seeds does not have a more extensive knowledge of direct payments. Similarly, a person dealing with traditional products does not know the details of the regulation of agriculture in protected areas. When evaluating the factors included in the table, they were guided by intuition. Very often they pointed out that regulations limit freedom of action. In their opinion, this resulted in the unification of the food system, which was therefore less diverse. I noticed this regularity at a fairly early stage of research. During subsequent interviews, I tried to pay attention not to suggest such a way of thinking to the respondents. However, it appeared in subsequent interviews.

6.2 Sustainable food systems and key policy – synthetic survey

Respondents found it very difficult to assess the impact of various factors on the sustainability/diversity of the food system. Many of them openly admitted that they were guided only by intuition and not knowledge. Some respondents refused to answer. No questions were asked about supply chain contracts and food or rural districts, because they probably have no Polish equivalents.

	1	2	3	4	5	6	7
	Very negative impact	Quite negative impact	Mildly negative impact	It does not have any impact	Mildly positive impact	Quite positive impact	Very positive impact
The regulation on seeds and reproductive material					6	1	2
Agriculture in protected areas (natural parks, Natura 2000 sites)		1	2	1	3		1
Quality schemes (PDO, PGI, mountain products)				1	1	4	1
The regulation of organic production		1	1		3	1	2
Food hygiene regulations		2	1		3	1	1
Technical standards for agricultural products and foodstuffs			1		2	2	1
Producers' organisations		1	1	1	4	1	
Supply chain contracts	-	-	-	-	-	-	-
Food and rural districts	-	-	-	-	-	-	-
Consumer needs					3	3	1

Comments:

- The regulation on seeds and reproductive material
 - One of the respondents said that he associates this factor with GMO restrictions, which is why he assesses its impact positively.
 - Representatives of the paying agency stated that the current regulations have a positive impact on the food system. However, even stricter regulations are needed because farmers are reluctant to use certified seed.

- A specialist from the Research Centre for Cultivar Testing stated that the current regulations organize the seed market and thus have a positive impact on the food system.
- An employee of the Agricultural Advisory Centre associated these regulations with the promotion of traditional varieties and native breeds. On this basis, he attributed to them a positive impact on the sustainability of the food system.
- Agriculture in protected areas
 - People who positively assessed the impact of this factor pointed out that agriculture in protected areas offers a chance for the development of rural tourism.
 - It was also pointed out that regulations in this area hinder the development of agriculture. The fact that there are areas excluded from agricultural activity has a positive effect on the sustainability of the food system.
 - Respondents who negatively assessed the impact of this factor indicated that no agricultural activity should be conducted in protected areas.
- Quality schemes (PDO, PGI, mountain products)
 - Respondents from the Agricultural Advisory Center pointed out that food quality schemes are conducive to preserving traditions, facilitate the development of regions and their promotion. This can indirectly affect the sustainability of the food system.
 - Certified food was associated by respondents with organic food in general, which is why its impact was assessed positively.
- The regulation of organic production
 - Respondents generally positively assessed the impact of the regulation of organic production on the sustainability of the food system. However, some of them pointed out various problems that offset this positive impact
 - High prices for organic food
 - Leaks in the control and certification system
 - Lack of consumer confidence in ecological certificates
 - Greater restrictiveness of Polish regulations compared to other EU countries.
- Food hygiene regulations
 - The respondents' opinions were divergent. Many of them pointed out that food producers complain about excessively restrictive hygiene regulations. On the other hand, it was pointed out that restrictive regulations are good for consumers because they ensure food safety.
- Technical standards for agricultural products and foodstuffs

- Technical standards for agricultural products were assessed positively, as respondents emphasized that they protect consumers against counterfeits.
- Producers' organisations
 - Respondents argued that producer organizations should, in theory, contribute positively to the sustainability of the food system. However, their positive impact in Poland is diminished by the fact that there are very few of them operating here. They were described as a solution that did not match the Polish conditions, because it was taken from other countries.
 - One of the respondents stated that he is a strong individualist who supports the free market. For this reason, he is against associations, because he associates all organizations badly.
- Consumer needs
 - All experts who answered this question were convinced that food producers must take into account the needs of customers. In their opinion, this has a positive impact on the sustainability of the food system.

6.3 Diverse food systems

The term "sustainable food system" was familiar to the interviewed experts. However, they were unable to present its interpretation, which is valid in the institution they represent. It was similar in the case of "diversity of food systems". Most of them recognized that a system that has many different elements is more diverse than a system that consists of a small number of similar elements.

Most experts said that regulation of the food system was needed, but at the same time pointed out that it limited its diversity. According to the representatives of the Ministry of Agriculture and Rural Development, it is important to find a balance between the restrictiveness of regulations and the restriction of freedom. Excessively restrictive regulations may have the opposite effect to that intended.

Diverse food systems and key policy – synthetic survey

	1	2	3	4	5	6	7
	Very negative impact	<i>Quite negative impact</i>	<i>Mildly negative impact</i>	<i>It does not have any impact</i>	<i>Mildly positive impact</i>	<i>Quite positive impact</i>	Very positive impact

The regulation on seeds and reproductive material			2	2	3	1	2
Agriculture in protected areas (natural parks, Natura 2000 sites)		1	1	2	1	4	
Quality schemes (PDO, PGI, mountain products)			1		3	2	2
The regulation of organic production			2	2	1	3	
Food hygiene regulations	2	1	2	2	1		
Technical standards for agricultural products and foodstuffs			2		4	1	
Producers' organisations	1	1	3	3	1		
Supply chain contracts	-	-	-	-	-	-	-
Food and rural districts	-	-	-	-	-	-	-
Consumer needs				1	3	3	2

Comments

- The regulation on seeds and reproductive material
 - The seed expert stated that the regulation on seeds and reproductive material promotes diversity. He particularly positively assesses the impact of regulations that allow the registration of conservative varieties that could not pass normal registration procedures.
 - Some experts did not see the impact of the plant varieties used on the diversity of the food system. "If someone is going to sow wheat, what difference does it make if he sows one or the other?" (ARiMR)
- Agriculture in protected areas
 - Expert opinions were divided. Some of them believed that the regulations hindered the development of agriculture in protected areas. Restrictions therefore make the food system less diverse.
 - One of the respondents pointed out that the limitations of agriculture in protected areas make farmers look for innovative solutions. This is conducive to a greater diversity of the food system.

- Quality schemes (PDO, PGI, mountain products)
 - The impact of quality schemes on the diversity of the food system was assessed very positively. Only one respondent had a different opinion, who said that the certification process is too complicated.
- The regulation of organic production
 - Some respondents stated that organic farming regulations are ineffective. An example was a situation where a farmer receives an organic certificate even though only a small part of his production complies with the requirements.
- Food hygiene regulations
 - Negative assessments of food hygiene regulations were motivated by the fact that the regulations are very restrictive and limit the activities of food producers.
- Technical standards for agricultural products and foodstuffs
 - Many respondents assessed the impact of technical standards on the diversity of the food system positively. The assessments were justified by the fact that the standards exclude counterfeit products from the market. Such statements contradict the logic of other answers. Respondents in most cases claimed that regulations reduce the diversity of the system.
- Producers' organisations
 - Some respondents stated that producers' organizations have no impact on the diversity of the food system in Poland or that this is a negative impact. Such answers were justified by the fact that there are too few such organizations in Poland.
- Consumer needs
 - Respondents were of the opinion that food producers must adapt to customer expectations because the free market forces them to do so.
 - Some experts emphasized that consumers are becoming more and more interested in the quality of food and have more and more knowledge about it. This makes the food system more diverse.

Key topics derived from interviews:

1. Gender diversity and women's involvement lead to business/agricultural/farm diversity.
2. Involvement of young people in agriculture as a driver for more diverse food system.

3. Direct payments as a factor hindering access to agricultural land.



England, UK

November 2022

A. Key informants

1. Summary table of key informants selected for interview

ID	Level	Institution/Occupation	Name
	National		
1 NatSocF	National	Sustain: the Alliance for Better Food and Farming	Vicki Herd
2 NatSocM	National	The Soil Association	Rob Percival
3. NatGovM	National	Department for Food, Environment and Rural Affairs (DEFRA)	Anonymous
4 NatEduM	National	Professor of Agri-Food Studies, Countryside and Community Research Institute	Damian Maye
5 NatSoc/FarmM	National/local	Land Workers Alliance (LWA) / Organic Growers Alliance (OGA)	Tony Little
6 Loc/FarmM	Local	Farmer at Gothelney Farm / South West Grain Network (SWGN)	Fred Price

Codex

11	Nat	Gov or Gov/Farm	F
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- **Number of the interview**
- **Nat/Loc = geographical scope of expertise**
 - Nat = national level expert
 - Loc = local level expert (Living lab area)
- **Edu/Gov/Soc/Farm – inst/occupation:**
 - Edu = Education (academia)
 - Gov = public institution/agency
 - Soc = Civil Society
 - Farm = farmer
- **F/M – gender:** F = female; M = male

B. Interviews with key informants - findings

1. Introductory part

1.1 Interviewee's Identity and expertise - Summary table

Identifier Code	Role/Institution (detailed description)	Collaborating institutions/actors	Direct contacts with farmers? What are their characteristics?
1NatSocF	<p>Head of farming and supply chains at Sustain.</p> <p>Sustain is an alliance of 110 UK organizations concerned with better food and farm policy and practice, ranging from health and food poverty and access through to supply chains and international justice.</p> <p>Her role covers everything related to farming policy and supply chains beyond the farm gate. Very interested in retail diversity and routes to market for farmers, including improving regulation of conventional supply chains.</p>	<p>Sustain are made up of a multitude of collaborating national organisations who are engaged in making more food and farming more sustainable.</p> <p>They also collaborate with more mainstream actors who aren't members where they have common goals:</p> <p>e.g. with the National Farmers Union (NFU) (the biggest farming trade union in the UK – mostly conventional farmers) on trade policy and the regulation of supply chains.</p> <p>e.g. formed the 'Groceries Code Network' which created a Groceries Code Adjudicator in 2013 and ensured it was powerful enough to fine big retailers if they're abusing suppliers; and more recently got fair dealing regulations into the Agricultural Act</p>	<p>Direct contact with farmers and farming organisations: they help direct the work of the organisation, and Sustain regularly meets farmers through farming events. There are about ten farmer organizations in their membership.</p> <p>Farmers have tended to be Organic and small scale, but this is shifting with a lot more members joining who are conventional farmers introducing aspects of sustainable farming into their practices.</p>
2NatSocM	<p>Head of Food Policy at the Soil Association.</p> <p>The Soil Association is an organization campaigning for Organic and regenerative food and farming - partly a certification body certifying Organic agriculture and partly a charity.</p>	<p>Actively collaborating with lots of related organisations, including the Sustain Alliance, the WWF, and the Sustainable Food Trust. Because they work across the food system on diets and production and across the whole range of environmental and health issues "we're quite diverse in our partnerships."</p>	<p>"Lots of farmer stakeholders around." Lots of farmers employed in the organisation, including close colleagues. Beyond this engaging mostly with farmers through social media.</p>

	<p>His role is part of the charity side of the Soil Association, leading their advocacy and campaigns work, focused on sustainable diets and dietary change.</p>		
3NatGovM	<p>Evidence and analysis for the department for environment for the rural affairs (Defra).</p> <p>Defra leads development of agricultural and environmental policy.</p> <p>Role involves providing evidence and analysis and technical support to the different policy areas at the Agri-food Directorate, ensuring that policy developed at the department is based on the most robust and unbiased science available.</p>	<p>Collaboration “is a fundamental part of our work.”</p> <p>Within government collaborate with the very wide range of departments and agencies involved in food policy “so we can effectively can tackle the food challenges that have different dimensions will affect in different policy areas”</p> <p>Outside government, they engage with the whole spectrum of the community with an interest and food – from stakeholders in the food and drinks industry, to related NGOs and producer organisations, to academic institutions and research councils. The latter is particularly important given his role.</p>	<p>Not huge engagement personally, but Defra does have “quite a lot of engagement with the farming community”, aiming to work with farmers directly around innovation and good practice.</p> <p>Engagement “at different levels, at the science and the policy levels, and within that with different structures representing the farming community”</p>
4 NatEduM	<p>Professor of Agri-Food Studies, Countryside and Community Research Institute</p> <p>Areas of expertise cover: rural development; Organic farming; sustainable agriculture; food systems; rural studies; plant disease management; agricultural policy; plant protection; agricultural development; climate change and agriculture; and food security</p>	<p>Collaborates widely with other academics and related institutions and organisations, as well as with government departments such as Defra and short food supply chain producers associations.</p>	<p>Yes, in a research capacity. Research centre works with farmers on a range of research projects - some for government departments such as Defra to assess new support schemes</p>
5NatSoc/FarmM	<p>Works for both the Landworkers Alliance and the Organic Growers Alliance.</p>	<p>Collaborates with other Organic growers, seed producers and other actors in short food supply chains, as well as similar groups representing sustainable producers and retailers.</p>	<p>Currently roles often desk-based, but previously has worked with farmers on farmer-led research projects, closely with Welsh farmers setting up local supply chains</p>

	<p>Role with the Landworkers Alliance involves developing direct and short supply chain food systems.</p> <p>Role with Organic Growers Alliance involves campaigning on issues that affect professional Organic growers.</p>		<p>and has farmed seed potatoes himself.</p> <p>Mostly Welsh, small-scale, mixed farmers who were 'mostly agroecological in some form or another' and driven by this motivation – whether Organic certified or focused on low-input systems outside of this certification.</p>
6Loc/FarmM	<p>Farms nearly four hundred acres – mixed agroecological farm growing diverse population wheat and rearing pigs on feed grown on the farm.</p> <p>Founded the South West Grain Network and part of the Pasture for Life association.</p> <p>Over his career has transitioned from farming industrially, to discovering more about the soil and ecology, to recently focusing more on "the social political aspects.. because... we had to rethink... what we're doing [and] the food system that we were producing food for" to overcome limits to the sustainability of production possible without systemic transformation.</p>	<p>Collaborates with other farmers and alternative supply chain actors, both locally and through producer/supply chain organisations.</p> <p>Most collaborations are outside his commercial needs and have no direct commercial benefit to the farm, although there are indirect benefits to collaboration and they improve the quality of his life, e.g. doing presentations for organisations such as Pasture for Life, or sharing knowledge directly with producers who are keen to learn how to farm differently.</p> <p>Through the South West Grain Network, linked to the UK Grain Lab at the national level, and sister organisations internationally "we actually have a kind of global network, and have been visited by people from all over the world."</p>	<p>Has direct contact with neighbouring farmers in his local area, sustainability-focused farmers who are part of alternative supply networks and agroecological campaign networks with him, and conventional farmers living nearby or interested in transitioning.</p>

1.2 Interviewees' views of farmers' characteristics

General traits of farmers interviewees have contact with

Apart from Defra (who engaged with all types of farmers, perhaps mainly conventional), those interviewed predominantly had contact with farmers who were focused on growing more sustainably in some way. The scale of farmers engaged with, the extent of their involvement in sustainable farming practices and the types of supply chains they sold through varied widely however: from large farms with Organic certification selling to supermarkets, to small scale agroecological producers selling through local supply chains based on 'relationships rather than commodification', to livestock farmers in the 'pasture for life' movement, to

conventional farmers adapting aspects of their production to comply with LEAF accreditation or join the 'Nature Friendly Farmers Network'.

"when it first started it was probably more Organic only and small scale, and they're still very important, and... farm size diversity is critical... but we've got a lot more members now who are interested in getting conventional farmers who all have to make the transition to towards more environment, climate, nature friendly farming... It's about all farmers being able to do it, not just those who are going to go all the way with Organic, or fully pastured" (Vicki, Sustain)

Sustain and the farmer interviewee also came into some contact with conventional farmers and their representatives where their interests overlapped (e.g. some of the import regulation improvements Sustain is campaigning for, and shared lanes and localities for the farmer). Academic respondents had very little direct contact with farmers.

Main aspirations and concerns

"[farmers that I have contact with] have a long list of concerns around the future of agricultural policy: farm support payments linked to the post-Brexit policy context, emerging trade deals, rising input costs - trying to run a successful farm business is challenging at the best of times and very difficult at the moment." (Rob, Soil Association)

Financial stability and shifting the supply chain to ensure that it adequately supports sustainable farming were key to the concerns the participants heard coming from the farmers they had contact with. Fred (Gothenley Farm) reported that his neighbours who are farming conventionally and other conventional farmers who get in touch with him share very economic concerns around instability inherent in their powerlessness interacting with big supply chain players who determine and quickly change the prices they could get for their produce and the quantities that were demanded (e.g. within 90 days one farmer was told he had to cut his production of chickens by 40% as that was all their buyer was going to buy now). This consequently denies them agency over farming techniques – the only option is to produce highest yield for lowest costs to insure against this instability as much as possible.

"it's a critical part of sustainable farming that farmers don't get abused by the supply chain, and until the Agriculture Act (2020), the only regulations were really on the big ten... now it's big fourteen, supermarkets... But we now have, under the agriculture Act, the potential to affect with legally binding and full enforcement, the rest of the supply chain - everything between the farm gate and the retailer. So all the food service sector, manufacturers, etc., which is really critical, because a lot of farmers don't sell direct to supermarkets, so they don't feel the current [groceries] code does much" (Vicki, Sustain)

Smaller farmers trying to sell sustainable produce through short food supply chains were also worried about their stability. Although they have more agency, they are facing risks around the potential fragility of trying to build adequate supply chains outside the conventional system. "5 years ago I didn't know any farmers like us locally – I've found people now, but just as many leave the industry as start" (Fred, Gothenley Farm).

Change over time

“they perceive what I’m doing as risky, I perceive what they’re doing as risky” (Fred, Gothelney Farm)

Participants generally reported that the situation for farmers was only getting harder and more volatile, with input costs rising steeply and uncertainty more prominent:

“having just come out of the covid situation, we now have Russia invading Ukraine and everything that's flowed from that around energy prices, rising feed costs fertilizer costs, cost of living squeezing budgets - and all that seems to be ever evolving. There's no end in sight, really. So it's a difficult environment” (Rob, Soil Association)

The plateauing of yields in the context of escalating environmental degradation is further adding to the corrosion of stability and squeezing of margins across the board:

“we're basically depleting our soils on the one hand, plus all the other variables that we're controlling with agrichemicals like the pests and diseases... There's a small lag, maybe, but they're basically all developing resistance to the things we're using. So there's this race. At the beginning you just ramp up the rates, and then you start stacking all the chemicals together, and then, at some point, which I think is this decade that we're in now, at some point you have to say ‘We're losing here guys, we need a different strategy.’

...From the 90's average on farm wheat yield in the UK has plateaued... despite farmers using double or triple the inputs.... and despite the genetic potential of new varieties going up by 2 or 3 percent every single year. We should be on a two or three percent rise, everything else being equal. The system is so dysfunctional and... the risk to farmers from exiting the system now is even greater than it was ten or twenty years ago, because we're so deep into it and our soils are so inert... [when my aunt] ran the farm in the late 90's, early 2000's, she would have maybe used one pre-emergence herbicide, two fungicides and the rates she was using were x. By the time I was farming in 2007-2012... we were stacking three or four pre-emergence herbicides, and we were using five fungicide spray timings, and we were using rates like 3x, and that was *within ten years*. If you go back to when my grandfather started using chemical it was... basically... the same active ingredients [but] he was using 10% of what we were using by 2000. So the stakes are higher [from exiting the conventional system] because they're so far down that road that there is no natural resilience and we've created super resistance. It's cliff edge territory really.” (Fred, Gothelney Farm)

In this context the Sustain Alliance are shifting towards supporting mainstream farmers to incorporate sustainability more into their practices, as well as supporting their historical base of small-scale Organic producers. For Fred this context prompted a shift in the opposite direction, to finding resilience outside the conventional system in non-certified Organic production, selling through localised supply chains made up of diverse actors, not using external inputs or buying in feed (so removed from fluctuating commodity markets). Covid brought big shocks to this system, but the human connections suffusing his supply chains enabled them to continue as all sides are willing to give and take where they could based on established relationships of trust and reciprocity, which provide a real strength in tough times. This solidarity and diversity, he believes, is what creates a “truly resilient low risk system.”

2. Agrobiodiversity

“I've gone from choosing off a list to thinking much more about the farming system I'm trying to create, which is like, ‘stand on your own two feet, be independent of external inputs’... and varieties can be really useful in that. Diversity is incredibly useful in that.” (Fred, Gothelney Farm)

Factors determining variety choice

Conventionally, variety choice is typically determined by yield “[on] the ‘national recommended list’... I would just go for the top lines... and would control inputs for what would maximize yield” (Fred, Gotheney Farm). Quality characteristics are also important, such as protein content for wheat. “The commodity system provides simple conditions for quality which helped you choose varieties and sell produce based on these conditions” but even in alternative supply chains varieties need to “have enough of these quality characteristics which buyers looking for and fit with what Organic farmers want on the production side” (Fred, Gotheney Farm). Beyond this, resistance to diseases comes in – for instance in potatoes “blight resistance is absolutely a driver for variety selection” (Tony, LWA/OGA). However, resistance to disease is not a fixed characteristic of varieties and decreases in proportion to the quantity of the variety grown. Monocultures create a selection pressure to let pathogens evolve to target them, meaning seed companies can only sell some popular varieties for a limited number of years before they succumb to diseases.

“when you have one variety, effectively you've created a selection pressure for a particular disease, and this happens on the recommended list. So you'll have a variety with like a 20% market share, and it has a score of 8 to Septoria. Within two years the Septoria score is 3, and it and it's delisted, and that's because everyone grew it because had a resistance level of 8... obviously the pathogen evolves quicker because it's 20% of the UK population.... imagine you've done the R&D, and you've developed that resistance gene, and it's cost you a million pounds. Well, if you if you're only going to sell it for two years before it's lost the efficacy then that's not a good investment... it is such a sound principle that even the industrial narrative is having to think about diversity.” (Fred, Gotheney Farm)

Choosing varieties based on lower inputs is still largely limited to farmers outside the conventional system, despite increasing input costs, because high inputs are so essential to conventional farming at this stage (as discussed in the previous section). Varietal diversity is crucial to enabling resilience to a range of conditions with less inputs:

“Your population is never boom and bust, which you can be in an industrial system where you've only got one set of genetics, and then the other thing is the diversity of a cross-composite population can then adapt to your specific circumstances, so over many years in one place with one set of conditions, gradually the things that do well for you will express themselves more, and so effectively if you start with a cross-composite population, it should get better, not worse, which is really cool.” (Fred, Gotheney Farm)

Route to market was also mentioned as an important determinant of variety choice. For instance, producing for a vegetable box scheme implies producing a range of crops and a range of varieties that will ensure produce throughout the year. Being able to capture more of the value through selling through shorter supply chains allows producers not to focus so much on yield: “if you are selling your own meat boxes or supplying a butcher, then that could lead you down the route of having slower growing native breeds ... so I think that actually supply chain is a major factor affecting the biodiversity of farming systems” (Tony, LWA/OGA).

What are the factors that encourage farmers to maintain local or ancient varieties?

Currently there were seen to be few factors encouraging farmers to maintain local or ancient varieties. Although their higher retail prices would make them attractive to grow, the size of the market is incredibly limited: “one medium sized grain farm would saturate whole of the UK farm for the next 10 years” (Fred, Gothelney Farm). Factors which would enable this market to grow include: celebrating these varieties among food vendors (e.g. some bakeries have started prioritising using ancient grains), educating the consumer about the unique tastes and culinary possibilities of these varieties, bridging the skills gap among growers used to modern varieties, breeding to incorporate some modern quality characteristics into traditional varieties alongside their low input requirements. The interviewee from Defra mentioned a burgeoning alternative protein industry as a new source of demand for old varieties of pulses which have fallen out of favour elsewhere: “a few companies are looking at commercialising ancient varieties. Certain beans are recovering because of the alternative protein sector... [e.g.] the high protein wrinkle pea.... diversity can be a driver of business models” (Defra interviewee).

What are the most effective public or private instruments for this purpose:

Market drivers were mentioned by several participants as key instruments for this purpose. For instance, consumer demand for food sold through short food supply chains increased a lot during Covid and the money for infrastructure and support for farmers to come together for direct selling which are included in Wales’ proposed new Sustainable Farming Scheme (2025) could support the kind of supply chains which would enable low-input ancient and population varieties to be viable. A shift toward dynamic procurement systems in public purchasing (currently under consultation for inclusion in government procurement guidance in England) was also mentioned as potentially important in a similar vein, as they “could potentially open up markets for smaller and more diverse farming systems” (Tony, LWA/OGA). See section 4 for more about public procurement and diversity.

Legal barriers were cited as a major factor holding low input variety selection back – especially in terms of heterogeneous varieties or ‘cross-composite populations’. While the EU has a new legal framework to support the exchange of heterogeneous seeds, there is currently no legal space to sell heterogeneous varieties because there has been no update to old EU legislation which was copied into UK law.

“it is technically illegal to develop and sell wheat populations. There is no legislative framework that is set up to do it... it's really frustrating... now in the EU if you're an organic farmer, you can grow, sell, develop heterogeneous material.... there's literally legislation in the EU that we are at a disadvantage to, because we don't have it in the UK.... [although] we can literally just copy and paste it back over here.” (Fred, Gothelney Farm)

This legal grey area is a major obstacle to scaling up as exchange of seeds has to stay small scale and informal – but this brings its own risks.

“there are some risks that occur when things are small scale and informal... [in contrast to] a kind of coordinated community effort that could exist around the safe transfer and registration of seed... whilst it's

a piecemeal effort, because there is no legislative space to coordinate these move movements more formally I think a) there's a risk for from seed health and disease being spread around, b) there's a limitation to how much funding can go back into the development of the and sport of these communities, and c) I think there's a lot of work that's being duplicated" (Fred, Gothelney Farm)

Exchange of seeds between farmers

Exchange of seeds between farmers was perceived to be common in small scale farms but very restricted on a larger scale for similar reasons to those mentioned above. There was perceived lack of clarity around the legalities of passing on seed which leads to it not being widely discussed or promoted: "I think that if you're not a registered seed Company, I think it's difficult, or possibly illegal [to exchange seed].... it's very murky" (Tony, LWA/OGA). The UK Grain Lab, of which Fred and the South West Grain Network are part, sets out the current legal obstacles to exchanging non-uniform seeds developed to suit local conditions and promote agrobiodiversity in their advocacy paper:

"[UK seed] laws remain rooted in the requirement for pre-marketing variety registration based on Distinctiveness, Uniformity and Stability ("DUS"), and Value for Cultivation and Use ("VCU") criteria and on technical questionnaires initially drawn up to protect plant varieties through intellectual property rights, irrespective of how impractical, uneconomic, and inflexible that system has become for small-scale markets and stakeholders working with and for diversity. Current seed laws that govern anything larger than plot-scale cultivation in the UK are based primarily upon a cumbersome process of variety registration where non-uniform populations and on-farm agrobiodiversity management practices find little to no place. The process of approval is relatively costly and slow, which immediately puts small scale production of any promising crops at a disadvantage." (Gaia UKGL, 2021)

In the small-scale arable sector the exchange of seed between farmers is driven especially by population varieties thanks to the benefits mentioned in the previous section and the small-scale alternative supply networks which have grown to facilitate "getting these grains into bellies" (Fred, farmer). Clearing up the legalities around heterogenous seed mentioned in the previous section would facilitate the exchange of seed between farmers and allow the scaling up of seed swapping rather than buying from monopolies – currently "four agro-chemical companies own sixty percent of the world's seeds and a responsible for seventy five percent of all pesticide sales" (Rob, SA).

Other laws or policies affecting agrobiodiversity

"Sorry... I always end up going down lots of rabbit holes... it's all linked, which is a great strength, and reflects that food touches everything in our lives - but it's a huge problem when it comes to actually getting logical policies" (Vicky, Sustain)

Interviewees pointed out that the range of policy areas affecting food, and thus affecting agrobiodiversity, covered virtually every department of government (see Parsons et al., 2020). For instance, planning policy has a huge impact on what farmers can do and how the supply chain and infrastructure can develop to support agrobiodiversity. Competition policy affects how supermarkets are able to treat producers, the stability and size of their margins, and thus their ability to invest in agri-environmental practices which might sit outside strict yield maximisation. The recently established Groceries Code Adjudicator (Groceries Code

Adjudicator Act, 2013) falls within this remit and was cited by Vicky from Sustain as a major potential improvement.

Since Brexit a raft of law and policy specifically focused around encouraging farming more in harmony with ecosystems and agrobiodiversity has been brought in or is currently in the process of being developed – although respondents expressed a lot of doubts about whether these currently ‘half-baked’ interventions would be fit for purpose.

“if we want farmers to be employing more nature-friendly methods, diversifying the foods they produce and supporting on farm biodiversity they need to be paid for it. Otherwise the safest route for a farm business is back into the previous model of intensification... the supply chains are all set up to support the status quo.” (Rob, Soil Association)

“in theory there should be a good match between the Environment Act [2021] and the Agriculture Act [2020] in such that the targets and outcomes from the Environment Act should be reflected in what the Agriculture Act measures deliver when it comes to farmland... there isn't that close connection as yet, but there could be and they should be.” (Vicky, Sustain)

The wide Agricultural Transition Plan 2021 to 2024 brought in a major move toward using ‘public money for public goods’ in UK agricultural subsidies, stating that “food is still the primary purpose of farming... [but] farmers also play a crucial role in protecting and enhancing the natural environment. If we want farming and food production to be resilient and sustainable over the long term, then farming and nature can and must go hand in hand” (Defra, 2022a). The related Environmental Land Use Scheme (ELMS) which will replace the CAP in the UK shifts incentives toward paying for environmental benefits rather than just land ownership. This is seen as a very promising development by Defra and one of the few agricultural measures mentioned in the 25 year Environment Improvement Plan. The Sustainable Farming Incentive within it contains a number of elements supportive of particular aspects of agrobiodiversity, such as soil health standards, although not currently an agrobiodiversity standard as such (despite Sustain’s campaigning) and its contents and scale may be at risk from a new administration which is currently reviewing it. ELMS is covered in greater detail in section 5.2.

“If the new environmental land management scheme which is progressively being rolled out doesn't have enough budget behind it to actually support farmers to do the environmental stuff then they won't do it”
 (Rob, Soil Association)

“the agricultural transition [plan] could yield greater diversity, but it depends on how ELMS is designed and whether farmers accept it” (Damian, CCRI)

Currently only around 35% of UK agricultural land is in agri-environmental / environmental stewardship schemes ([Defra, 2022b](#)), and progress around incorporating agrobiodiversity into farming is being undermined by other policies included in the agricultural policy reformation in England that is mainly geared around “creating a sector that... increases food production and contributes to export growth” ([Defra, 2022b](#)). For instance, “we're signing a trade deal with Australia that potentially floods the market with low quality, cheap meat – that could prompt some producers to feel that they have to be intensifying to compete at that low price point” (Rob, Soil Association). The Net Zero targets and legal climate change obligations of UK

government, which could be integrated well with agrobiodiversity, can also serve to undermine it, as with moves toward intensive monoculture bioenergy production.

“agricultural policy in relation to climate... is incoherent... There's a big gap. The Climate Change Committee has been calling them out for it. The NFU have set a target of net zero by 2040, which is commendably ambitious, but they haven't figured out the numbers, and in scrabble to get towards it they're investing in intensification, bioenergy... those of us in the periphery are saying that there's all these other solutions... You can benefit climate and nature, but not in the current [intensive model]... We need lots of agroforestry.

We need natural regeneration of woodland on farms where you put hedgerows back in [etc.]... but the alternative train of thought is just bung loads of energy crops in the ground and hope for the best [and that's currently winning out]” (Rob, Soil Association)

The approach of government was seen to be still very much ‘othering’ biodiversity improvements rather than integrating them into mainstream agricultural production – improving environmental standards on some farmland and related to certain farming practices whilst leaving the rest unchanged or even worsening agrobiodiversity through intensifying production around these islands of environmental improvement.

3. Biocultural diversity

Main laws/policies affecting diversity of agricultural practices and food cultures

Many interviewees cited the legacy of the Common Agricultural Policy and our implementation of it as a major driver of agricultural practices in the UK and whether or not we have diversity of practices. They felt this had generally had a standardising influence, with agri-environment schemes only improving this for a minority of producers.

“Historically payments through the basic payment scheme (pillar 1) have tended to support farming practice and maintain livelihoods. This support has enabled farms to remain in business, although you could argue is not the most efficient way to support innovation and as a consequence has limited diversity. Early rounds of agricultural subsidy through pillar 2 did encourage farmers to be more multifunctional and diversified in practice, but actually a large chunk of money was still basic payments and a means to maintain the status quo. Some payments and measures did encourage on-farm diversification but agricultural policies don't really support as much diversification as we need - payments have tended to favour landowners and large farm enterprises.” (Damian, CCRI)

“I think a lot of the culture of farming has been changed by the CAP – such that it's very hard to change it in any other way. But I think that's happening... a lot of farmers have... taken Countryside Stewardship funds or previous iterations of agri-environment schemes, and have changed their cultural practices to put in more rotations, changed livestock breeds, and things like that. But that's a small minority, and the large majority of farmers have sort of continued what their father did, or their mother did to be gender neutral -

carried on as before, because the market was the main driver of what they do. And the markets said, 'deliver this kind of grain at this level of gluten at this time' or 'this kind of size of apple at this time' otherwise we won't buy it from you. They're really controlled by the supply chain and their buyers" (Vicky, Sustain)

Highly concentrated food supply chains controlled by a few major players don't only homogenise farming practices through their demands of producers, they also serve as a homogenising influence over food cultures through their dominance of the foodscape. "The UK food culture is again not a great example of diversification - the foodscape is too dominated by larger corporate interests, private governance and supermarketisation" (Damian, CCRI) "farmers markets in the UK are not practical, not part of our food culture – a novelty add-on" (Fred, Gothelney Farm). Food culture in the UK was seen as quite weak across the board "we're trying to forge a food culture but it doesn't exist much – the strongest food cultures are those we import" and these also tend so fit with more traditional varieties – for instance "most of the imported cultures with flatbreads can be made with heritage grains" (Fred, Gothelney Farm).

Policies around public procurement were seen as a potential avenue for diversifying agriculture and food cultures, "a key leaver for both the shaping dietary norms and for providing a market for certain types of produce, so it can [also] shift what's happening on the land" (Rob, Soil Association). However, active food governance through public procurement is limited by 'nanny state' concerns (more in section 4):

"One key driver for food culture is school dinners and public procurement. Some developments are happening here that might yield a shift in food culture, but... UK food governance... scared of what might be perceived as nanny state intervention... Some of the devolved countries have the most progressive food policies and cultures - especially the work in Wales and Scotland on procurement, the right to food, etc... It is interesting that these visions [also] articulate a different conceptualisation of culture and wellbeing."

(Damian, CCRI)

Vicky from Sustain pointed to the impact of the large reduction in farm numbers in the UK and increase in farm size on diversity in agriculture: "you lose not only people from the countryside and from the rural economy, who are connected with the land, you lose a lot of features, hedgerows, woodland trees, messy bits, those connectivity bits which are critical for environment and... for biodiversity" (Vicky, Sustain). Not only has the government not tried to reduce aggregating trends in farming, some of its policies to promote efficiency in farming have exacerbated this process:

"huge fields with huge machinery, fossil fuelled farming systems, should not necessarily be defined as the most efficient. But there's still a huge culture out there of people who think it is, and that's how we feed the world. Problem is what we're feeding the world with isn't actually nutrition linked... it's all grains and very cheap meat. None of that is particularly good for the world. So it's having that culture change across the farming community, but it's very hard for them to shift if policy or supply chain isn't shifting" (Vicky, Sustain)

As part of the UK's continuing extrication from the EU there is a 'Repeal Bill' currently going through Parliament at the moment which would mean that unless the Government actively legislates to keep the EU law that was carried over into UK law post-Brexit it'll all be dropped at the end of 2023, with huge implications for diversity in food and farming:

"This is ninety percent of the UK's Food law, most of our environmental protections, most of our food policy protections, food standards regulations, everything you can think of from on-pack labelling to contaminants in foods. Pesticides. GM. It's all potentially going to disappear off the statute book at the end of next year... There are various bits of regulation... around environmental protections, food production which could have a huge impact on diversity on the land, and which on the dietary side could end up shaping what's on supermarket shelves, and what people are eating, and so on... Defra alone has to review almost six hundred pieces of European legislation, complex bits of regulation, within the next few months to decide what to do with them... it's completely mad. It's completely unknown how it's going to play out, but there's a huge amount at stake in terms of farming and diets. It's a recipe, if nothing else, for mistakes to be made, for bits to accidentally get dropped, bits of regulation or for things to be changed with unexpected consequences... the default is that we have basically no food or environmental laws at the end of next year. (Rob, Soil Association)

Main factors encouraging Organic/localised farming

"Organic has been... shafted for the last ten years. It should have been growing and growing, as it has been in many European countries - we should have been really recognizing the benefits organic, not from a marketing perspective, but from an environmental one... and it really needs a big boost because it sort of provides... a system based approach, and that's what we need." (Vicky, Sustain)

Having Organic standards written into law was seen as boon to the movement, allowing "farming with nature, without agrochemicals... intrinsically sensitive to local context... [and] intrinsically oriented towards diversity" (Rob, Soil Association) to find a market and command higher prices through legal standards. However, there was widespread criticism that not enough has been done from policy side to support its development, with specific Organic support schemes 'evaporating' over the last 5 years. "I instigated a campaign called the 'Get Organic Targets Bill' in 2000 to get 30% of the land under organic by 2010. You can see how much of a failure that campaign has been... in the Netherlands in other countries they've had massive growth... I think it's partly to do with our incredibly competitive retail sector, partly to do with... our government sort of naturally not wanting to intervene. We'd have had so many benefits if we'd got that" (Vicki, Sustain).

This weak policy support was seen to be "at odds with the top-level policy objectives of sustainable farming, climate change all of these sorts of things... I'm not seeing the those big games reflected in the actual support policies on the ground... [we need] policies that actively disincentivize intensive farming.... somehow internalizing the costs of intensive agriculture which is currently external... Things like sustainable farming scheme in Wales and elms in England are rewarding that kind of practice, but on its own I think it's not sufficient - I think the payments are simply not high enough to make the difference between somebody farming intensively in somebody farming agroecologically" (Tony, LWA/OGA). A lot of emphasis was placed on the importance of financial incentives as determining motivations: "I think the increase in input costs will be a major driver... when I was working at organic centre Wales. You know we could talk a lot about benefits

of organic farming, and we get a little bit of interest. Fertilizer prices increase sharply and suddenly our phones start ringing" (Tony, LWA/OGA). Our interviewee from Defra also acknowledged Organics differences with other EU countries, mentioning that a policy/regulations review is ongoing and will conclude in 2023/24. This might increase support for sector development, but policy needs to consider all the different angles affecting the food system such as food security elements which favours adoptions of more productive agricultural approaches.

Beyond Organic, there has been a move towards nature-friendly farming more generally, with a buzz around regenerative farming and a broad recognition of role of farming in nature crises coming in with a new generation of farmers: "Historically organic has been a bit of a niche, but there's... lots of energy from the generation coming through around more diverse modes of farming... there has been a bit of a shift in recent years, I think, towards that that more diverse approach, with a more diverse cohort of new entrants.... I think more needs to be done to support new entrants to come into farming, but I think there is a bit of a shift" (Rob, Soil Association). This can be seen in the recent growth of other environmental farming accreditations and organisations such as the Pasture Fed Livestock Association, the Nature Friendly Farmers Network, Linking Environment and Farming (LEAF) and Grown for Nature.

"[these have] managed to grow because some retailers have recognized the benefits, but probably in marketing terms... it's getting farmers on the ladder of agroecology, which is the main goal... Waitrose and now Tesco are using the [LEAF] label. all those schemes are there, and they're ready to help farmers as ELMS kicks into play... because the market doesn't pay, you know... [people think the] huge price of organic in the shops, that's organic farmers getting a lot of money. They're not. They're getting a little bit of a higher farm gate price, but they don't see the rewards that supermarkets do" (Vicki, Sustain)

In terms of smaller-scale producers, responses were more focused on the intrinsic motivations of farmers trying to do the 'right thing' and the growth of short food supply chains increasing market feasibility as drivers for Organic and locally produced food.

"I think there's a strong drive from farmers and growers saying, I want to do this simply because I think it is the right approach... you talk to a lot of.... conventional farmers supplying supermarkets... about why they're doing that. They'll say it's basically an economic necessity. I say – 'Well, if there was a way in which you could produce less in a more agroecological way and still maintain income and viability - would you switch?' 'Yeah, of course'... It's certainly.... food farming economics that drives monoculture....margins are really small... the only economic way out of that is to produce as much as possible, and industrial monoculture farming is the answer to the question 'How do I produce as much as I possibly can for the smallest financial cost?'" (Tony, LWA/OGA)

From a practitioners perspective, Fred found very little policy support designed for local food production, and located the main factors encouraging local and Organic food around anything which created deeper connectivity in our food system: "anything that makes social closeness between farmers and eaters" whether that be physical or mental. "Laws and policies tend to be about setting minimum standards, rather than promoting good practices... Good practices tend to be promoted from the bottom up – farmer to farmer, or through farmer organisations" (Fred, Gothenley Farm).

Promotion of local and/or traditional products

"the National Farmers Union... bang on about local, endlessly [in terms of British]... the supermarkets are oriented squarely away from local. It's not the way their supply chains operate... And I think if you went to the public they'd associate buying local with being sustainable... but... most of the food we buy has come from supply chains that aren't oriented towards that." (Rob, Soil Association)

Interviewees shared the opinion that the promotion of local or diverse traditional foods was limited, certainly outside of highly-priced niche markets. The UK does have some protected origin designations and there is a move to create more, but overall the UK is not as focused on promoting local 'brands' or protections and the governmental help on offer is balanced by the small size of sector.

Rob from the Soil Association linked the limited production or consumption of distinctive local varieties to a 'huge simplification going on' in mainstream supply chains and difficulties with accessing markets for more diverse varieties. The orientation of agricultural policy toward producing large quantities cheaply means that only a few varieties can make it and creates a food culture around identical food, eroding diversity.

"we're not eating the local varieties, the distinctive varieties... Apples are a great example.... [hundreds of] distinct varieties of apples in the UK, and we eat, what, a couple imported from Chile and Granny Smith and whatever. There are still local orchards around the place growing these distinct varieties, but it's very difficult to find a market and it's not supported. I think that apples are emblematic of all sorts of different food types.... Agricultural policy is oriented towards producing lots of food efficiently, which intrinsically means you're biased towards a handful of high-yielding varieties in whatever category. Supply chains dominated by the retailers are set up to buy this stuff. We've created this culture where we all expect our food to look and taste identical the whole year round and it's eroding the genetic diversity of our food base, the diversity of our diets, diversity of land use... It's a picture of crude simplification, I think." (Rob, Soil Association)

In a broader sense, one of the major factors affecting limited promotion of local/traditional products may be that they were not seen as uncomplicatedly positive in the UK context. Interviewees problematised local/traditional products in terms of their 'elite' status in the UK market, and their lack of embedded environmental benefits.

"It's widely seen as middle class, sometimes a bit luxury... among that market I think that it is promoted the really well, and it is unquestionably relatively growing, but what we're not seeing is good local food being provided to the majority of the population, particularly low income.... the traditional, the regional, are often presented as the specialities [not for mainstream]" (Tony, LWA/OGA)

"[if the] UK Government is... going to have its own schemes like the PDO schemes, the geographical origin schemes and cultural things... those cultural things need to reflect environmental things as well, because they don't at the moment. Pork Pies don't come from happily reared pigs... Stilton comes from a particular area... But... they don't define environmental sustainability... or climate or nutrition... some of them do have a connection with the biodiversity in the area... but it's quite weak... *cultural diversity is seen as a good, and it can be, but just being hard-headed about it - who says that just because that Parmesan comes from that area, the ground in that area is being looked after? Or the workers are being looked after?... Say the*

uplands, if we could define... hefted Lamb from a biodiversity rich landscape that would be great, and that would help people to think about buying less and better meat, which we do need to do." (Vicki, Sustain)

Policy sensitivity to healthy and sustainable diets

"In academia and civil society, there's unambiguous recognition that healthy and sustainable needs to be joined up in diets. But in terms of public policy that is really absent... they have an obesity strategy, they're doing stuff around healthy eating... But they're really failing to get to grips with the sustainable component of diets" (Rob, Soil Association)

Healthy eating recommendations are outlined in the 'Eatwell Guide' which is widely promoted, along with some policy around increasing fruit and veg consumption – and this guide is being reviewed to consider the inclusion of some sustainability considerations. Although not focused on sustainability as such, the Defra interviewee pointed out that some research indicates that increasing from low to high levels of adoption of the Eatwell Guide would be able to reduce dietary carbon emissions by around 30%. There are some sticking points around the integration of healthy and sustainable diets - for instance around meat reduction. This was the subject of a recent legal challenge brought against the UK government on the grounds that their Government Food Strategy (Defra, 2022c) ignored clear advice around meat and dairy reduction from their Climate Change Committee and Food Strategy, coming into conflict with net zero commitments.

"Henry Dimbleby's Food Strategy made all sorts of recommendations which the government's backed away from - meat and animal foods is the contentious bit they don't want to go near.... And the NFU and farming lobby is in complete denial about healthy and sustainable diets... They can't countenance less of anything - British is the shorthand for healthy sustainable - that they can't imagine a world where they're producing slightly less beef or much less chicken, or that government has a role in suggesting to the public that diets should shift from one food category to another" (Rob, Soil Association)

A shared understanding by interviewees was that the current government is "backing away from anything that looks interventionist or nanny state" (Rob, Soil Association) and this limits the scope for policy to shift diets, especially in contested areas like that of reducing meat consumption to promote health and sustainability.

4. Organizational diversity

Access to land

“The Government has just announced some pilots on new entrants, but they're not nearly doing enough on land access to land. It's all about entrepreneurship, and they might do some match making between the entrants in the pilots and landowners and financiers... But it's not actually tackling the problem of no land available... we could have... financial incentives for landowners to make land available for new entrants... but we also... should be restoring land to nature and producing less food on those [areas], which means you need to produce food elsewhere and reduce food waste and the amount of crops you put into cars or livestock” (Vicki, Sustain)

Interviewees agreed that there was a huge problem with the amount of land available for new entrants to buy and little by way of policy supports to facilitate access for new entrants to farming. Huge amounts of capital are required to start anything but a very small-scale horticulture farm, especially if aiming to go down the conventional farming route, and land very often just isn't available – often being added to the land holdings of surrounding farms when farmers do sell, rather than opened-up to new entrants. The land which does come up often doesn't meet the requirements of new-starters, such as being close to conurbations.

Some interviewees mentioned the county farm network set up after the war as a potentially effective means of getting new farmers onto the land and facilitate their training and progression through the food system. In England alone these publicly-owned farms currently cover 200,000 acres, but “austerity – coupled with a sense that county farms are ‘a thing of the past’, and an unwillingness by some councils to innovate to develop new income streams or business models – is driving decline in the overall extent of county farms” – the area they now cover is less than half what they covered 40 years ago (CPRE, 2019). “By selling them off they [local authorities] can make money that will then allow them to pay for care homes or staff whatever. So it's a real problem” (Vicki, Sustain).

The Lump Sum exit scheme was designed to pay farmers to leave the farming sector, and in theory could open up land for new entrants, but has proved to be most popular with smaller farms, sparking concerns that this could lead to further consolidation in the UK farming sector.

Beyond these support was seen to be really lacking, certainly at the scale required to combat the ecological impacts of the farm consolidation trend. A young entrants scheme in Wales no longer exists and the response to new entrants was not seen as commensurate with the stated aims of encouraging uptake. Suggestions for changing this included putting a tax on selling land “the equivalent of stamp duty” and using this fund to support new entrants accessing land (Tony, LWA/OGA). Tony also mentioned he found some hope in the number of land owners who are trying to invite farmers onto their land “in one ear I'm getting people saying, I want to come in as a new entrant, and I'm really struggling to find land, and then in the other ear I have people saying, I've got land... and I can't find anybody to come in and farm it. So there's a bit in the middle of

that that's missing." The Defra participant mentioned that the new entrants policy is currently under review, considering a more dynamic regulatory framework to encourage new entrants and a New Entrants Support Scheme currently being developed.

Diversity of farmers

Interviewees felt that making progress around improving the diversity of farmers and encouraging young/new entrants had been largely left to NGOs in the absence of policy (e.g. the Land Workers Alliance run a new entrants scheme; the Soil Association run an apprentice scheme). Defra are running 'pilot incubator projects' with related organisations to support new entrants, and the Welsh Government were running programmes to bring together women farmers to share experiences, but these were seen to be small gestures compared to the scale of the lack of diversity among farmers. Training opportunities in particular were pointed out as a huge lack:

"top-level policy aims of creating vibrant rural economies and sustainable farming systems... [but] the response to new entrants is not... proportionate to that wider aim. I think training is a huge gap, specifically around agroecological and Organic systems. And again, it's quite often left to other organizations... it's not hardwired into training and education in the way that you would expect if governments were genuinely serious about their stated ambitions" (Tony, LWA/OGA)

Additionally, Tony noted that agroecological farming tended to have a much better gender balance and more racial diversity than conventional farming, being more accessible and attractive to a wider more diverse group.

Role of producers' organizations

"there's all to play for, and a lot of farmer engagement at the moment.... farmers talking to each other more about what they can do differently and ideally collaborating more, that really is what's needed. So they become a stronger voice to get better returns from the marketplace, and to get the right kind of policies to help them" (Vicki, Sustain)

"I think farmers are getting to see it [agrobiodiversity] as a prerequisite for being in business in ten years time, and I think the producer groups and representative organizations, I think should be clamouring for agrobiodiversity as a matter of self-preservation" (Tony, LWA/OGA)

While there are a diverse range of farmer and producer organisations, the largest, who have had a lot of policy influence, were seen to be mainly lobbying on behalf of farmers financial interests and not interested in diversity, while those interested in diversity and "doing lots of grassroots work on the agroecological side" were seen to be lacking in policy influence by some (Rob, Soil Association). However, it was agreed that producers associations would have an essential role to play in enabling agricultural transformation at scale:

"producer groups are absolutely fundamental to that... without that structure, collaboration, framework, we're simply not going to be able to deliver agroecological food to 20 million people" (Tony, LWA/OGA)

“the kind of things that could... [change the way our] general food system operates in terms of promoting good practice, it's usually bottom up farmer to farmer, and it's usually organizations like the pasture for Life Association, and maybe I would say, also think things like Soil association or Organic Farmers and Growers... there is a lot more to those bodies than just minimum standards.” (Fred, Gothelney Farm)

Main drivers of farmers selling through short food supply chains

“Being able to say... this is the end result in terms of the process of growing this food. And this is why I need to charge you... three times more than it is at Sainsburys... That's the connectivity... going to farmers market enables you to have that conversation, and you can therefore set your price... The human connection is unbelievably powerful” (Fred, Gothelney Farm)

The predominant driver, mentioned by every interviewee, was seen to be price – autonomy over prices and retaining a larger proportion of the money spent on food rather than it being lost across a long supply chain. Currently “producers get hammered consistently by low prices” in the conventional system (Rob, SA), getting on average “9% of the food pound - the gross value added of the food system - which is a tiny percentage given how many risks they take, how they've got to deal with the natural system which is not predictable” (Vicky, SA). The ability to control prices to reflect the costs of farming more ecologically also enables farmers to avoid the environmental problems that necessarily arise from having to prioritise low costs and yield above all else to ensure against the low and volatile prices of mainstream commodity markets.

“in the other system you don't control your price... So what do we do as farmers in this mad food system, where we don't control our price, and yet shoulder all of the risk?... I tell you what we do... we grow a massive great bloody heap of it there. So even if the margin is low, we've got a shed ton of it... and the other thing we do is we get really really big, and we focus in on that... So if you get really really big, you can reduce all of your costs per per acre, and therefore your cost of producing a ton of wheat or barley, or whatever it is, comes down. But then, now you're a really big farm. So what does that mean? I have to be really simple, because I can't now manage any kind of complexity, because I'm doing like three thousand acres. So I'm... now managing one or two crops - we're getting all these problems that we never used to have, because our system is so simple. We need to use more sprays, more fertilizers. So this whole thing about price is really linked in [to the erosion of diversity]” (Fred, Gothelney Farm)

“ideally more diverse, retail at the local level would allow farmers... to choose where they sell... so... they could bargain more, get potentially higher portion of the retail price to cover the costs, and therefore they'll be able to invest in agroecological practices... in on farm processing, so they get more of the added value. They'd be able to change rotations, grow something differently ... possibly putting livestock back into the system allowing more mixed farming” (Vicki, Sustain)

Short food chains also offer opportunities for the valorisation of ecological produce through consumer conversations: “being able to have the conversation enables you to set your price” (Fred, Gothelney Farm). Having contact with other consumers and local farmers also creates a valuable sense of community –

solidarity with other farmers and the community of people who come to the farm or farmers market, or buy through one intermediary who can tell them about each of their suppliers.

“a closer relationship with their customer... [means] you can be responsive. You can help customers recognize why the produce is different. Why the tomatoes might be different sizes. Why it might be good to eat more of the animal as opposed to just the normal cuts.” (Vicki, Sustain)

As the interviewee from Defra commented, there seems to be a proliferation of short food supply chain outlets at the moment, but not necessarily driven by policy. “I still think economics is the key... The Covid pandemic was an important moment for short food chains here in the UK - many local food producers really stepped up and proved their resilience and adaptability, and it also provided a push for some producers to engage or re-engage with direct marketing. The big question now is will those markets be maintained, especially in the current cost of living crisis” (Damian, CCRI). Public procurement reforms might be able to aid these markets, but Tony (LWA/OGA) pointed out that the scaling up of short food supply chains currently faces a bottleneck in “the middle of the supply chain... all of the appropriately scaled wholesalers and logistics companies that fill in that gap. I think that's where we're really struggling... Things like the better food shed in London; Organic North in Manchester... if we're going to create a local food system that feeds twenty million instead of two those are the sorts of things we'll need.”

Public procurement

“I don't think [public procurement really influences the type of agriculture practiced at the moment] because we have a very concentrated system... very few large corporations running most of the procurement. But where there is a divergence from that, for instance, for the Food For Life scheme... which includes local organic, seasonal, fresh... that model has grown and grown. But it's still a very small market share. That would be a great model for all public procurement, but the majority of it is just sourcing the cheapest from wherever. We've been campaigning on that for a very long time, and we haven't got very far.” (Vicki, Sustain)

Currently public procurement was seen to be sustaining mainstream high-input monoculture agriculture, but it was seen as a site of great potential for the transformation of food and agriculture: “if we increase the publicly procured food from small producers that then makes local food available to every school child... that's a route in” (Tony, LWA/OGA). Government buying standards are mandatory for central government (optional for broader public sector – under review 07/2022) and contain sustainability standards but “they're not very strong... they are there - but they're not monitored or implemented. So a lot of what's coming through in schools and hospitals is low quality produce, lots of it imported, no sense of what the production standards were - we can assume for some of it that's pretty bad” (Rob, Soil Association). Recent research found that change in regional procuring would need to be driven by top-down decisions, because procurers were largely unable to change their practices - either because of very low budgets, established practices or perceptions of what they're allowed to do (Wilkinson et al., 2022). “It's a very opaque, complex area of law, procurement law, and procurers are often either unwilling or unable to see beyond the perception of what the standards are... [to] go outside, their norms, so to speak” (Vicki, Sustain).

However, the a reform of public procurement is currently underway and Defra are currently consulting on genuinely ambitious proposals for the Government Buying Standards for Food and Catering Services, including “an aspiration that 50% of food expenditure be spent on food produced locally or to higher environmental production standards such as Organic, Linking Environment and Farming (LEAF) Marque or equivalent” and supporting the sector “to work with more small and local suppliers” (Government Food Strategy, 2022). “If defra implements this, which would be around spring next year, it would be very a very good thing... but they need to be properly implemented, and that means monitoring compliance and enforcement, and so on, not just putting out a new policy” (Rob, Soil Association). Currently Food For Life (run by the Soil Association) is the only sustainability scheme in the public sector. “What's brilliant about food for life is it shows you can actually save money, and deliver really great food in those settings where the per person cost is tiny... I'd like to see them adopt Food for Life and introduce Dynamic Procurement across the board” (Vicki, Sustain). At the moment 50% of English primary schools and around 50 hospitals have some level of accreditation through this scheme: “so there are caterers out there doing really good stuff - delivering high quality sustainable food through Food For Life - and they're doing it in spite of government policy, not because of it” (Rob, Soil Association).

The interviewee from Defra were currently reviewing responses to the consultation. Although one of the key objectives is to increase sustainability, “this is a complex area because of legislation around trade to promote locally produced food. Generally, transport of commodities is a really low percentage of emissions,” which makes it difficult to justify the GHG emissions savings from locally produced food. However, increasing targets around the purchasing of goods certified as having higher environmental impacts, or using the ELMS, could be a more beneficial approach – by encouraging farmers to produce more under these schemes, providing a positive pull from government policy for more sustainable food.

In addition to these moves from central government, there is substantial interest from different councils looking at Dynamic Procurement models, although these are still at the ‘proving the model’ phase to demonstrate that they work practically and enable councils to learn from one another.

“there is a case study showing that it [dynamic procurement] can save money and deliver.... The platform... will aggregate them [small producers], so that it's not a big deal for the procurers who are used to doing large contracts with large players.... And ideally it will be supporting small scale producers doing more diverse production systems and more culturally diverse systems... [but dynamic procurement] requires effort... It's hard to inject into a system which is on his knees. And... there's not much training budget around... it requires local authorities to take action - that it's very hard for them to do when they've got no budgets and no staff.” (Vicki, Sustain)

From the perspective of small producer organisations, Tony cautions that it is also crucial to talk to farmers about what they would find attractive, as public procurement is currently very unattractive to sell into compared to local retail opportunities.

“when they develop, systems also have to take the needs of farmers and producers into account, because next to retail, the market for the procurement is really not attractive.... it's prices are lower... it's more complicated because of all the due diligence, and payment terms are quite long. If you're getting really good retail prices from a box scheme... [and payment] sometimes even in advance, It's very difficult to make the business case to move from that system to public procurement. I think the trick is to really pick

out the areas in which public procurement could actually solve problems for small producers - around gluts and around the meat producers selling the cheaper cuts which are harder to ship on the retail market as a baseline of steady income.... as well as developing the procurement systems... We also need to be talking to farmers about actually how they would see this work and what they would find attractive."

(Tony, LWA/OGA)

5. Agricultural models and the Common Agricultural Policy

5.1 Views on agricultural models proposed at the national level

"Agrobiodiversity is more or less a function or a product of the way you farm and for several decades the way we farm has been oriented towards an efficiency, high yield, agrochemical-based model of intensification, and that hasn't been good for agrobiodiversity both in terms of on farm, biodiversity and the diversity of the foods that we're producing" (Rob, Soil Association)

Over the last 30 years models of agriculture have been amended to include more environmental considerations, but these were seen very much as add-ons to a model fundamentally focused on using high inputs to achieve high yields at large scales. Even the interviewee from Defra acknowledged an element of paradox around the 'sustainable intensification' model which a lot of activity and investment has been focused around by the UK government in recent years. He saw this model as a heritage of the green revolution, which has been both an incredible success and a worrying failure: enabling us to produce far more food but with much less diversity at all levels (production systems, diets, crop varieties and ecosystem biodiversity). Now we know about the externalities of such intensive systems we need to act at all levels to shift the agricultural system to avoid these – currently all levels form a network which supports intensification. For Fred, the recent history of environmental adaptations to farming models has been a story of incorporating systemic solutions into business as usual, reducing them into simplistic 'one-size fits all' solutions which can be bolted onto the current capital intensive models of farming and ignoring the underlying problems of simplification and riding roughshod over situatedness, complex systems, and resilience borne out of diversity. For instance, over the last 10 years regenerative farming has been "packaged up into sexy climate sorting machine" and reduced into off-the-shelf solutions like 'no-till' which then implies allowing glyphosate herbicides, and precision farming has been tied to investing ever more money in ever bigger capital.

"It's the same approach as they've always been doing, like 'got this problem - we'll try this solution,' when actually it's about stepping back and working out what's going on and saying, 'why've we got this problem? Oh, that's because we have this really simple farming system. Why do we have that? Because we're deeply in a commodity based industrial agriculture system. So can we start reworking that? it's really complex and really complicated.' Regen's all slick and sexy... [now it's become] just no till" (Fred, Gothelney Farm)

Vision of agriculture for the future

“the Food Strategy recommendations... [give] a clear sense of the serious systemic issues impacting UK agriculture and food systems at the moment - especially the junk food cycle and the nature crisis (climate and biodiversity)... If you then compare that with the government white paper (response)... many of the recommendations are ignored and the emphasis is productivity and a renewed focus on food security and sovereignty. The white paper is a very weak vision of the future of agriculture, failing to really grasp the urgency for systemic thinking... That said, some of the early thinking related to 'natural capital' and 'public goods' is quite radical, compared with other European countries. [But] what we are seeing now is a watering down of those early visions to a degree... The official vision is still too obsessed with growth and productivity, which is a complete misreading of what is really needed... The white paper does accept the challenges that are ahead regarding net zero and climate change, with targets for increased mitigation and sequestration strategies, but again the scale of the problem is not fully in view, in the sense that what is needed to meet 2030 and 2050 targets is quite a radical transformation of UK agri-food systems, not just planting a few more trees.” (Damian, CCRI)

In terms of a vision for agriculture in the future, many interviewees worried about ‘crude understandings’ of food security and carbon sequestration locking the UK into large scale, high-input monocultural agricultural models of agriculture, in the context of inadequate surface-level words and actions around nature-friendly farming.

“I think the vision is lacking, and I think that's a problem. The policy agenda that Michael Gove instigated around public money for public goods was pointing towards the more sort of environmentally integrated nature-friendly model of UK production. The Government's response to Henry Dimbleby's food strategy, however, which was partly responding to the global situation and food security fears, was very much oriented towards the old productivist model. So they seem to be in two minds. They want to see the environmental stuff. They're also talking about food security in very crude terms... So it feels a bit incoherent.”

The Defra interviewee pointed out that the Environment Improvement Plan includes several pillars around improving biodiversity and environmental benefits, that the Agriculture Act (2020) and the Environmental Land Management Scheme create sustainable farming incentives and a space for agroecology and agrobiodiversity as part of the mix of UK agriculture, and that Defra has invested in creating a systemic approach to their work, for instance through recently commissioned research focused on the question ‘what would a sustainable food system look like?’ Additionally, a major recent development from Defra – arguably underpinning their vision for farming and the environment – can be found in the Natural Capital and Ecosystem Assessment Programme which sets out to “underpin the immense value of managing our natural capital, transform the way we make decisions and policy and ensure we invest in environmental reforms that achieve maximum benefit” (Defra, 2022d). This project is not just about farming, but about distributing the balance of the land to deliver range of ecosystem services that we need from an optimal mix of land use.

Despite these improvements, other interviewees critiqued the vision from government for accompanying understandings of the value of natural capital and agrobiodiversity with approaches to food security and

resilience which are still narrowly focused on maintaining capacity to import food from around the world through investing in large scale farms and commodity products: "I am not seeing the war in Ukraine filtering through – I'm not seeing Defra waking up and saying, actually, you know what? that's not actually a good basis for food security... and I am not seeing the kind of push for the agricultural systems that I would like to see" (Tony, LWA/OGA). Similarly, in Wales the headline statements from government are focused on sustainability, biodiversity (tree planting) and keeping people on the land, but their food policy is still based around producing high quality produce for export rather than building the three types of diversity considered in this report to increase their self-sufficiency: "what I'm not seeing in Wales is a strong emphasis on increasing the diversity of food farmers, marketing systems and a move towards agroecological systems" (Tony, LWA/OGA). Agroecology has existed as a niche for many years, and local agricultural collages are still not giving it much consideration, meaning that the farmers of the future are still being educated in high input-based farming (maybe with some environmental amendments) rather than systems approaches. Future financial support available might "be with strings attached in hopefully really progressive ways like stewardship, really strong guidance, really sensible grant packages towards [environmental aims], but at the same time all of those things will be very mainstream, so it'll be 'how can a 3,000 acre farmer do this?'... They're not thinking about agroecology and community and social occasion." (Fred, Gotheney Farm)

5.2. Common Agricultural Policy and UK replacement to the CAP

Views on the impact of the Common Agricultural Policy (CAP) were mixed. Through providing area-based payments and including incentives to keep land productive, participation in CAP was seen to reward large farm ownership as well as "clearing what we would call natural regeneration or wildland, and so on... [but] I think that CAP is often blamed for failures in domestic agricultural policy. There are places around Europe that fall under the CAP where they're doing lots of really good stuff to encourage agroecology - France, for example. But the UK domestic policy was never ambitious enough to mitigate the negative effects of CAP" (Rob, Soil Association). However, agriculture policies that promote environmental stewardship were also a noted positive feature of CAP subsidy support, and the UK did use "a significant chunk of pillar 2 funds to support environmental policies, compared for example with a more 'agricultural' approach that you find in e.g. French agricultural policy" (Damian, CCRI).

UK replacement to the CAP

"The big picture is that there are lots of farms up for this. There's a big buzz around regenerative farming... But if they're consistently undercut by half-baked government policies that won't actually happen" (Rob, Soil Association)

Post-Brexit a major feature of agri-environmental policy in the UK is the idea of 'natural capital' and a direct attempt to transition agriculture towards 'public goods.' A key pillar of the so-called 'agricultural transition' was the introduction of ELMS (the Environmental Land Management Scheme), which has the potential to be a "big improvement on CAP in terms of directing incentives toward environmental benefits" (Defra interviewee). ELMS is broadly split into three tiers: a sustainable farming incentive, local nature recovery, and landscape recovery - with payments flowing through each of those and the sustainable farming part

linked to public money for public goods. The scheme is still going through a process of 'test and trial' and how extensive it will be is still to be determined. Its development is currently under threat partly from farm lobby pressure for 'food security', partly from lack of farmer support, and partly from changes in the UK administration.

"The basic idea and rationale [of ELMS] have a great deal of potential to support biodiversity, but the design of the policies is the weak point - and because of that farmers could lose faith in the process... and not engage" (Damian, CCRI)

Across interviewees, the ELMS was seen as having great potential benefits for diversity, especially diversity of farming practices and agrobiodiversity. Although at the moment there are "only two standards that are really relevant - the two soil standards - next year we'll have a lot more - assuming the new Secretary of State doesn't change anything - and then, the year after we'll have more, so farmers will be able to... get money for delivering public goods in a whole range of areas, and those farmers who are already doing it... can get paid for what they're already doing which is exactly right... because the market doesn't pay... we've actually got agreement from government about an agroforestry standard, which could be really exciting... in terms of landscape, in terms of farmers incomes, in terms of soil... I would probably point to that as one really positive thing out of ELMS - it's potentially going to come out next year, maybe the year after, as a standard, as a grant that you can apply to" (Vicki, Sustain).

However, as ELMS is still in development these benefits are still largely hypothetical, and interviewees expressed fears about the adequacy of the policy to incentivise the scale of shift in farming required. "ELMS will support those already interested in and able to farm more sustainably, but as an incentive to switch it's insufficient alone" (Tony, LWA/OGA). So far, less than 2,000 farms have applied for the Sustainable Farming Incentive scheme [\(REF\)](#). While it is a narrow version of what should be included by 2024, as Defra has a target of 70% of farms participating in ELM schemes over the coming years, this is nonetheless a concern for ELM more widely, and low uptake could put the farming budget for England at risk of being cut if the Treasury does not see benefits.

"It's not quite clear that it's gonna function or be well funded... There are lots of farmers who are going to go bust if they get this wrong... it's the small scale, mixed farmers who are the most vulnerable. They have historically been reliant on CAP - and that's where a lot of the diversity sits both in terms of production systems and on farm biodiversity... some of the good stuff is going to struggle potentially... it's not clear that there's enough money going into it, or that they've thought about how that money is gonna flow through to farms based on the various environmental outcomes they meant to be delivering... it's a significant reduction [in funding compared to CAP], I think, and no long-term commitment to the budget as well, which means it's at risk of being eaten up by an enthusiastic treasury... If you want to invest long term in changing your system, doing more environmental stuff you need reassurance that there will be investment long term" (Rob, Soil Association)

While ELMS should improve diversity to some extent, the perception of most of those interviewed was that large improvements in agrobiodiversity, diversity of supply chains and diversity of farming practices would require a broader shift in farming, probably driven by a reversal of current farming economics and actively

disincentivising conventional farming through internalising its externalised costs in some form. The stewardship model promoted by ELMS was seen to be still “very much othering - e.g. 8% of the farm wonderful high level sustainable farming, but rest stays the same damaging intensive high input farming” (Fred, Gotheney Farm) whereas the necessary transformation requires an integration of diversity and holistic engagement with complex systems as part of agricultural policy.

“It's simple systems isn't it? They're offsetting bad shit with some good shit, whereas actually you could get way more good out of the good shit if it was structured in a different way, and was more integrated with the farming practices... So I think that's where ecology is really interesting - if they were to be able to have an advisor or an expert... [with] a really agroecological focus on their stewardship like ELMS. I think that would be really positive, because fundamentally I think you can have both. I think you can have healthy, productive farms and nature. They're not different things, they're the same thing.” (Fred, Gotheney Farm)

“we've been sitting in the ELMS meetings for the last four years, saying these are great, but what about animal health and welfare... what about climate... you know, it's the interconnectedness of food and land use to all things, really” (Vicki, Sustain)

6. Sustainable and Diverse Food Systems

6.1 Sustainable food systems

How does your institution interpret the concept of sustainable food systems?

As might be expected, the civil society actors had much more justice-informed concepts of sustainable food systems than Defra. For Tony, from a Land Workers Alliance perspective, the “main thing about it is that it extends not only to production systems, but also food justice and accessibility, and the rights and dignity of everybody in the food system.” And for Rob from the Soil Association, sustainable food systems encompassed “agroecological land use – diverse pattern of land use mixing nature friendly food production and natural regeneration” as well as “this social justice concept which comes with it... about food, sovereignty, and a fair price for producers and fair deal for consumers and... a narrative around relocalising supply chains, supporting independent businesses, redistributing power across the food system. And... a significant dietary change... and engagement with consumers as food citizens who have a stake in the future food system.” Whereas, from Defra's point of view, sustainable food systems could be summarised in terms of “environmental sustainability, social benefits and economic benefits” and the need to have a holistic understanding of the whole supply chain to ensure the coherence of policy instruments in avoiding negative spillover effects from promoting any aspect of this ‘triple bottom line’ at the expense of other aspects.

Interestingly, Fred's definition as a sustainable food system practitioner was very close to the working definition from Defra, or 'what we learnt at school,' but with one crucial difference – the integration of all three aspects of sustainability “that's the one thing I'd put onto the school definition” (Fred, Gotheney Farm).

“We didn't get out of bed, and decide 'we need to sort out the carbon emissions from Gotheney farm, so we're going to go no till and spray it all, and then we can put some stewardship in, then we're going to add value to our goods and services by getting a grant.' That's one way of doing sustainability... [we focused

more on] 'what's the kind of farming that I want to do?' Oh... this is farming that is great for biodiversity and quality, and it is really appealing to people, and they come every Saturday to this bakery and then get chatting, and that forms a community. How beautiful is that?" (Fred, Gothelney Farm)

What are the main obstacles to the implementation of sustainable food systems?

Concentration of ownership and buying power in supply chains "in the hands of organisations not acting for social benefit but for their shareholders" (Tony, LWA/OGA) came up across several interviewees as major obstacles to the implementation of sustainable food systems. Other major obstacles included incoherent government policy, entrenched dietary trends among the public which are difficult to shift, access to land ("most of the innovation comes from new entrants"), heterogeneous seed legislation and lack of capacity for deep and joined-up thinking about complex systems.

From a policy practitioner vantage point, the interviewee from Defra discussed problems with adequately understanding the trade-offs between the triple bottom line sustainability measures as the major obstacles to progress. For instance, it is easier to provide flood protection without ecosystem services interventions, and agroecological/extensive approaches are harder to guarantee the outcomes of than sustainable intensification. "We have a very fixed target and you need to be able to get there." Navigating the incredible complexity makes it very difficult to implement effective action (e.g. to reach net zero). "You cannot just trigger a policy without understanding impacts across the whole of society" and there isn't enough evidence to be able to quantify the wide range of benefits that agroecological systems deliver. "Academics can give caveats, but we cannot, because we are working in the real world" and therefore there is a great need to address evidence gaps and overcome caveats before can act responsibly to implement sustainable food systems. For instance, diet recommendations of the Climate Change Committee for meat reduction 'haven't included trade' and it isn't possible to actually estimate this impact yet.

From a farming point of view, Fred raised the disconnection and consequent lack of understanding between different parts of the food system as a major barrier to sustainable food systems. For instance, consumers don't understand the real costs of food or the real value of sustainable food systems – estimated by NEF to be £3.70 in social benefits for every £1 spent in short food supply chains (NEF, 2020).

"I think that's hidden from us - all of us. What is the cost of the way we're producing food in the UK right now? Or importing food? Or the food we're buying in these supermarkets? What's the real cost of that? And how are we paying for that? Because I think if people really truly understood... And on the other hand, if people were really able to understand the value in other systems like... for every one pound you spend in this kind of food system you get three pounds seventy of value... if people actually like understood that, what the hell are we doing?" (Fred, Gothelney Farm)

What actions should be taken to promote sustainable food systems?

All stakeholders focused their actions at the national level, recommending a range of policies and legal changes across the supply chain. Only the interviewee from Defra refrained from making policy

recommendations as such, focusing his recommendations around building the underlying evidence base to ensure a good mix of interventions for different actors and to balance different pillars of sustainability.

Rob (Soil Association) focused on specific actions from government and retailers: the government introducing a Food Bill to implement all the recommendations from the Food Strategy; the Climate Change Committee joining up their land use model with natural England around biodiversity and nature to create a nature and climate land use approach not just a climate-driven policy; and retailers 'doing more' to support agroecology, diverse models of farming and diverse diets – implementing a "range of interventions around pricing structures, which foods are promoted, procurement policies - working down the supply chain to support more ethical production pricing structures and ethical procurement... Government has a role to play in raising baseline standards, tightening regulation. But the retailers also need to engage pre-competitively around some of the big issues, and be a bit braver in embracing that role in the world... they're... narrowly oriented towards consumer demand.... they fail to recognize that they also create that demand. They're not really beholden to it."

Tony (LWA/OGA) focused on directly shifting the economics for food producers and consumers: we need an economic framework that rewards agroecological farming and penalises polluting practices, including support for direct marketing systems as drivers for agroecological production, and more equitable policies around wealth redistribution to address poverty and enable everyone to afford good food.

The Defra interviewee focused on the need to prioritise interventions using a more developed evidence base and the importance of measures for holding the government to account. We need to understand a lot from the natural and social science perspectives and draw on democratic measures to take into account all views and to work out interventions which can have the most beneficial outcomes for everyone through the right mix of regulation, behaviour change, incentivising research and development, etc.

Fred (Gothelney Farm) focused on what would support sustainable food production on-farm: implementing the legislation around heterogeneous seed ("madness that something so sensible is illegal"); redesigning farming policy more through the integrated, systemic lens of agroecology "not totally doing it, but designing policy which could be compatible with it"; changing the Farming policy target of net zero: "which frames farming as bad and just being less bad to get down to zero, but farming could sequester carbon – it's actually more effective and more resilient with more carbon in the soil... why aim for zero?"

6.2 Sustainable food systems and key policy – synthetic survey

Interviewees gave their views on the impacts on sustainable food systems of each of the areas on the left. Most answered with reference to the current state of play in each area, but Fred answered a few hypothetically about their potential impacts if they were 'well' utilised toward improving the sustainability of food systems. Not all respondents answered regarding all areas, missing out areas they didn't feel they knew enough about.

1 2 3 4 5 6 7

	<i>Very negative impact</i>			<i>None/unsure</i>			<i>Very positive impact</i>	<i>Comments</i>
The regulation on seeds and reproductive material	1, 5		2, 1	4				<i>lack of biodiversity and the concentration of breeding & development in few companies</i> ⁵
Agriculture in protected areas (natural parks, Natura 2000 sites)				5, 1	2, 4		3	<i>Dpn't know – stringent planning makes it hard for small scale processing units</i> ⁵ <i>Mixed</i> ¹
Quality schemes (PDO, PGI, mountain products)			1	4	2, 1, 3,		5	<i>Support native breeds/species</i> ⁵
The regulation of organic production			1		3, 4	1, 5, 2		<i>But don't adequately address social aspects</i> ⁵ <i>Inadequate promotion of Organic</i> ¹ <i>Positive but still small</i> ⁴
Food hygiene regulations		1, 5	1	2, 3		4		<i>designed for big food systems – overburdening small operations, who not necessary for</i> ⁶ <i>small, local abattoirs – less of an issue in other sectors</i> ^{1, 5}
Technical standards for agricultural products and foodstuffs		1, 5	1	2		3, 4		<i>same as above – reason we have all these complex minimum standards is because don't have relationships</i> ⁶ <i>standards drive uniformity</i> ¹ <i>– don't drive improvement – just recording not progressing – a lot of potential though</i> ⁵
Producers' organisations	2			4	1		1, 5	<i>NFU</i> ² <i>For CAP definition of producers associations</i> ¹
Supply chain contracts	5, 1	2		1*	4			<i>in peer to peer networks</i> ⁶ <i>Could be more influential</i> ⁴

Local food purchase agreements	5			4	2	1*, 1		<i>Hypothetically⁶ But major promise⁵ where they exist (e.g. FFL)^{1,2} Too small for impact?⁴</i>
Consumer needs	1	5, 2	4		3		1*	<i>Potentially - they just don't know what they need unfortunately⁶ Currently defined by advertising, marketing, etc.¹ food] poverty – necessitates the cheapest food;⁵ still too focused on cheap food⁴</i>

1 Vicki, Sustain; 2 Rob, Soil Association; 3 Defra interviewee; 4 Damian, CCRI; 5 Tony, LWA/OGA; 6 Fred, Gothenley

Farm * indicates referring to potential rather than current reality

6.3 Diverse food systems

How does your institution interpret the concept of diversity of food systems?

Although the gist was similar, stakeholders responses varied substantially in emphasis according to their perspectives. The Soil Association response focused on the centrality of diversity “to the whole organic agricultural ethos... we are working on various fronts to promote biodiversity throughout the food system” (Rob, Soil Association). The response from producers associations focused on the importance of diversity across supply chains and their actors “diversity of production systems, lots of small scale farmers, diversity of supply chains – diversity as the main factor for ensuring future sustainability... including the diversity of farmers themselves” (Tony, LWA/OGA). From his sustainable farming practitioner’s perspective, Fred was focused on contributing to diversity in terms of people, scale and genetics – as well as through increasing the complexity of his systems. Defra’s definition of diversity was “not very articulated” – they are working on it because of sustainability and resilience but participating in research like this to establish a better understanding to be able to answer key policy-relevant questions around agrobiodiversity and diversity in systems of production, such as: What is a good level of diversity? How do you set up a target? What’s the minimum? What are the trade-offs on other areas of policy? What will the impacts be of increasing biodiversity on society when people already struggling to feed themselves adequately, let alone sustainably?

What are the main obstacles to achieving food systems diversity?

Interviewees perspectives were similar in regard to achieving food systems diversity and achieving sustainable food systems. Civil society stakeholders again brought up inadequate government policy; retailer

and corporate consolidation of supply chains; and the influences which have established patterns of consumer demand which are antithetical to diversity. The policy practitioner again brought up insufficiency of evidence, as well as inherent problems with breaking the status quo of a system currently set up to support intensive production systems. And Fred the farmer again, similarly, brought up being entrenched in a food system which is the opposite of diverse and wedded to a lack of human connection.

What actions should be taken to promote the diversity of food systems?

“we need a joined up food strategy oriented towards agroecology, with dedicated support for new entrants, investment in farmer led innovation and relocalised supply chains. A shift led by Government policy away from diets oriented around ultra-processed foods, to lots of diverse fresh foods” (Rob, Soil Association)

Tony, in contact with a lot of small-scale producers, emphasised that incentives needed to shift dramatically to reward diverse production *and* penalise intensive farming systems, that food supply chains supporting diversity needed to be better supported “and that means things like the bricks and mortar infrastructure, and also data sharing management systems that enable lots of diverse enterprises to cooperate work together”, and that cultural diversity of food consumption should be included in our food production.

Our Defra interviewee suggested that awareness about the externalities of intensive systems which have greatly reduced diversity at all levels (production systems, consumption, crop varieties, biodiversity) needs to be translated into finding ways to break out of them.

Fred reiterated the importance of amending seed legislation to incorporate heterogeneous varieties, and the importance of including agroecology in farming supports and subsidies. He also raised the need to gather more evidence around the potential benefits of agroecological farming methods like he’s used on his farm: “why are we told it has to be either yield or sustainable?... Dimbleby said the UK couldn’t grow the calories on farms like mine... There’s an evidence gap... What we need is some serious academic research into ‘can this type of farming feed the world, the UK, etc.’ Otherwise they’re risk averse and will go with what they know will produce the calories... The answer is you can, but it’s a total structural revamp and that’s why we’re so far away from it. COVID and the Ukraine war were such incredible opportunities for seismic shifts, but in the long run we’ve just entrenched ourselves further into the existing systems as a result.”

6.4 Diverse food systems and key policy – synthetic survey

Most participants answered this one ‘the same as the one above.’ While they saw diversity and sustainability as separate, they felt that they generally pulled in the same direction: policies that were supportive of diversity were also supportive of sustainability and vice versa. The interviewee from Defra was the only participant who answered the two matrices differently.

	1	2	3	4	5	6	7	
	<i>Very negative impact</i>			<i>None/unsure</i>			<i>Very positive impact</i>	<i>Comments</i>
The regulation on seeds and reproductive material	6, 5		2, 1		4			<i>lack of biodiversity and the concentration of breeding + development in few companies⁵</i> <i>Positive but fairly limited⁴</i>
Agriculture in protected areas (natural parks, Natura 2000 sites)				1	2, 4	3		
Quality schemes (PDO, PGI, mountain products)			6		2, 1, 4	3	5	<i>Support native breeds/species⁵</i>
The regulation of organic production			1		4	6, 2, 3	5	<i>in terms of production⁵</i>
Food hygiene regulations		6, 5	1, 4	2				<i>designed for big food systems – overburdening small operations, who not necessary for⁶</i> <i>More suited to standardisation⁴</i>
Technical standards for agricultural products and foodstuffs		6, 5	1	2, 4		3		<i>overburdening small operations, who not necessary for⁶</i> <i>– don't drive improvement – just recording not progressing – a lot of potential though⁵</i>
Producers' organisations	2			4	1		6, 5	<i>NFU²</i>
Supply chain contracts	5, 1	2		6*, 4				<i>in peer-to-peer networks⁶</i>
local food purchase agreements		5			2, 4	6*, 1,		<i>Hypothetically⁶</i> <i>Lacking⁵</i> <i>Could be stronger but need the markets⁴</i>
Consumer needs	1	5, 2	4		3		6*	<i>Potentially - they just don't know what they need unfortunately⁶</i>

[food] poverty – necessitates the cheapest food;⁵ too price obsessed⁴

1 Vicki, Sustain; 2 Rob, Soil Association; 3 Defra interviewee; 4 Damian, CCRI; 5 Tony, LWA/OGA; 6 Fred, Gothelney Farm * indicates referring to potential rather than current reality

References

CPRE (2019) Reviving County Farms: A report for CPRE, the countryside charity, by the New Economics Foundation, Shared Assets and Who Owns England?. Retrieved 30.11.2022 from:
https://www.cpre.org.uk/wp-content/uploads/2019/12/December-2019_Reviving-county-farms.pdf

Defra (2022a) *New farming policies and payments in England*. Department for Environment, Food and Rural Affairs. Retrieved 30.11.2022 from:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1096744/payments-for-farmers.pdf

Defra (2022b) *Future Farming and Countryside Programme annual report, 2021 to 2022* (HTML version). Department for Environment, Food and Rural Affairs. Retrieved 30.11.2022 from:
<https://www.gov.uk/government/publications/future-farming-and-countryside-programme-annual-report-2021-to-2022/future-farming-and-countryside-programme-annual-report-2021-to-2022-html-version>

Defra (2022c) *Government Food Strategy*. Department for Environment, Food and Rural Affairs. Retrieved 30.11.2022 from:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1082027/government-food-strategy-print-ready.pdf

Defra (2022d) Natural Capital and Ecosystem Assessment Programme (HTML version). Department for Environment, Food and Rural Affairs. Retrieved 30.11.2022 from:
<https://www.gov.uk/government/publications/natural-capital-and-ecosystem-assessment-programme/natural-capital-and-ecosystem-assessment-programme>

Gaia UKGL (2021) *Advocacy paper: Recognising the importance of heterogeneous grain and cereal production in the UK seed legislation*. Retrieved 30.11.2022 from: <https://ofgorganic.org/docs/gaia-ukgl-advocacy-paper-cereal-seed-legislation.pdf>



NEF (2020) *Farmer-Focused Routes to Market: An evaluation of the social, environmental, and economic contributions of Growing Communities*. New Economics Foundation. Retrieved 30.11.2022 from: <https://www.nefconsulting.com/wp-content/uploads/2021/04/Farmer-focused-routes-to-markets-an-evaluation-of-growing-communities-April-2021.pdf>

Parsons, K., Sharpe, R. and Hawkes, C. (2020) *Who is making food policy in England*. Centre for Food Policy Research Brief. Retrieved 30.11.2022 from: <https://foodresearch.org.uk/publications/who-makes-food-policy-in-england-map-government-actors/>

Wilkinson, T., Nye, C., Lobley, M., Clappison, A., Goodwin, A., Hilton, J., West, H., Thompson, S., MacQueen, G. and Fogerty, M. (2022) *Public Procurement of Food in the South West Region: opportunities and barriers to relocating food supply*. Centre for Rural Policy Research, University of Exeter.



Norway

A. Key informants

1. Summary table of key informants selected for interview

Fill this table with synthetic description of each interviewee

Interviewees			
Level (national/local)	Job / Role in Institution (synthetic description)	Name	Identifier Code (e.g. 01; 02; 03)
National	Ministry of Agriculture and Food	Svanhild-Isabelle Batta Torheim	01
National	The Fridtjof Nansen Institute	Regine Andersen	02
National	Norwegian Institute of Bioeconomy Research (NIBIO)	Hanne Sickel	03
National	Norwegian Farmers' Association	Amund Johnsrud	04
Regional	County Governor of Oslo and Viken	Ellen Marie Forsberg	05
Local / National	Farmer/ National REKO-coordinator	Marte Olsen	06
Local / National	Farmer/ Seed Saver org. KVANN	Andrew Mc Million	07
Local	Municipalities of Oslo, Lørenskog and Rælingen	Knut Samset	08

B. Interviews with key informants - findings

1. Introductory part

Corresponding interview track section

- *What is the institution/agency/organisation of which you are a member? What is your role? What did you do before this work?*
- *With which other institutions/agencies/organisations do you collaborate in your work?*
- *Do you have direct contact with farmers? Could you describe their characteristics? What are the aspirations that emerge from them? What are the concerns? The obstacles? Have these characteristics evolved over time?*

1.1 Interviewee's Identity and expertise - Summary table

Fill this table with detailed information on each interviewee

Identifier Code	Role/Institution (detailed description)	Collaborating institutions/actors	Have direct contacts with farmers? What are their characteristics?
1NatGovF	Senior advisor in the Norwegian Ministry of Agriculture and Food. National focal point on the ITPGRFA	Government	No
2NatEduF	Full professor	University, government, other research institutes (EU, non-EU, national level) seed banks	Yes, investigating the process of implementation of international treaties like ITPGRFA at the farm level. Gathering perspectives etc
3NatEduF	Research professor	Research institutes, NGOs,	No
4NatSocM	Senior adviser in policy and agriculture	Government, other farmers' unions, farmers' cooperatives, and other NGOs	Promoting the economic and social interests of farmers
5RegGovF	Senior advisor	National government, Farmer organisations, farmers, other actors in the food value chain,	No

6LocFarmF	Farmer and national REKO-coordinator	Farmers, food retailers	Yes, she coordinates the REKO purchasing groups where local farmers sell their produce directly to consumers
7LocFarmM	Farmer and member of a seed saver association	Farmers, network of seed savers in EU and USA, government (in specific Mattisynet), research institutes	Yes, he sells and exchanges seeds with other small farmers in Europe and outside Europe. He advises on breeding techniques other farmers. He is an organic farmer producer himself
8LocGovM	Director of agriculture in Oslo, Lørenskog and Rælingen municipalities	County governor of Oslo and Viken, Innovation Norway	Yes, with processing applications from farmers for agricultural subsidies. Advises farmers on development measures and support schemes. Helps with applications for Innovation Norway

1.2 Interviewees' views of farmers' and territory's characteristics

Guiding questions

- *What are the emerging traits of the characteristics of farmers as portrayed by the interviewees?*
- *Does the profile differ according to the national or level context (i.e., the farmers' identity, concerns, aspirations, portrayed by local-level-interviewees differs substantially from those described at national level?).*
- *Did such characteristics evolve over time?*

The farmers with whom the interviewees are in contact are young farmers, organic farmers, with a background in agriculture (inherited farm) and involved in other economic activities outside of the farm. Part-time farming occupies a position of special importance in the structure of agriculture not only at the local level, Hadeland, where the research investigation took place but also at the national level. For our farmers, farming remains a secondary source of employment.

We have 3 acres (1.2 ha) of land, but we plan to reduce our farmland to 1.5 acres (0.6 ha). Our job in the farm will be more like a part-time job, it is never going to be a full-time job... we have decided it that way. Maybe we will get some animals if we plan to increase the workload in the farm in the future, but the model will be that of a kitchen garden within a CSA. We hope to sell everything through the CSA 6LocFarmF

The farmers show a great awareness on the different aspects of food chain sustainability that go from production to packaging and to final delivery, and advocate for increased support from the state to continue with their effort to produce organic food.

Use more local resources and rely less on fossil fuel. Use less packaging when you deliver... It is important to grow food by keeping in mind soil health and biodiversity to build an entire ecosystem here around. That is why I have started to produce vegetables and I hope people will choose my produce instead of those in the shops 6LocFarmF.

I don't think that the state should buy all the farms and then employe people... I disagree with that system, but I think [small -scale] farmers throughout Norway shall receive a more stable support from the state so that you don't risk getting in 22 million kroner debt or whatever that is...because it is not my responsibility to ensure that everyone in Dokka [Hadeland] buys/eats vegetables... we should be a socialist country where the state has the overall responsibility [for food production] ... that is the strength of the Norwegian model

6LocFarmF.

One young female farmer, 6LocFarmF, thus ask for more support from the state to produce organic. The other farmer, 7LocFarmM, since he is both a farmer as an active member of a seed saver associations KVANN, mentions that organisations like KVANN shall receive a more steadily support from the state given their centrality to the work of many other small-scale and organic farmers in Norway. Both farmers also mention that state authorities should be more considerate towards the challenges of managing a small but diversified farm.

We should receive more support in terms of subsidies for producing organic, for using green fertilizers and cutting the use of artificial fertilizers and pesticides 6LocFarmF.

We are operating without a fixed budget and support from the state. We must apply every year for funds 7LocFarmM

They argue that is difficult for small-scales farmers to comply with the norms set by the law as they find themselves, simultaneously, managing a vast variety of plants while pursing environmentally friendly methods of production like organic farming. The bureaucratic burden in their everyday operation is reported to be very high.

So, we have three sets of rules that a farmer needs to abide to: the seed rules, the plant health rules and the organic rules. This is not feasible; I don't do any of these things. I am not Debio-certified [orgnaic certification], nor have I registered a single variety with the Plant Variety Board. I'd have chosen to register my seed variety in something called the Open Sort Seed Initiative, which is part of the organic movement in USA, but you don't find something similar in Norway, not that I know 7LocFarmM

Farmers say that higher food quality that derives from organic farming is another important aspect that influences their choice of production methods, but they are aware that higher quality means higher prices for their produce. While some customers seem to understand this and are willing to pay, others - for many reasons combined from economic to cultural ones – choose differently. Thus, farmers consider that the consumers' idea that food shall be cheap is barrier for recognising and appreciating speciality food.

According to the farmer **6LocFarmF**, powerful food retailers have contributed the most to increase acceptance of the standardised food qualities among consumers by omitting the differences in quality between conventional and speciality food products.

I believe that grocery retailers determine at a great extent how we think about food, how food should be, and for them food should be cheap. After all, we've been told for 30 years that food should be cheap, so it's difficult in a way to appreciate and to be willing to pay for higher quality, even more now that the economy is tightening up for a lot of people.

*Beside prices, powerful food retailers are setting the standards also on how food should look like in terms of colours, size and shape. So, when you get something different, you don't know what to with it **6LocFarmF**.*

According to the farmer the result of this forced standardisation of food qualities has been that people do not spend much time around food and this impedes the development of a proper food culture. However, standardisation has been applied not only food qualities but also to seeds qualities. For the farmers, food diversity is enabled by the genetic diversity that exists in the farms. They consider the opportunity to cultivate seed varieties that are traditional, and therefore more suitable to the local climate conditions, as a way to secure food production in the future. But farmers say that the opportunity to grow food using local seeds varieties seem very limited since Norwegian farmers depend on imported seeds that are owned by big corporations.

*Genetic diversity isn't relevant only for food diversity but also for food security. Should a big company own the rights to the seeds? Shouldn't the farmers to a greater extent, or the producers, be able to own the seeds or the have the right the breed the varieties that they want? **6LocFarmF***

Preserving and enhancing biodiversity is essential for the farmers. However, the enthusiasm they show in experimenting with planting different varieties of vegetables in their farm is in line with the approach shown by other small-scale and organic farmers in Norway. The attitude demonstrated by these farmers to cultivate traditional varieties differ from that of larger farmers that have little or no interest in it.

*I think diverse food is important for our health, but the variety of plants present is a farm is also important for soil health and insects and microorganisms. We grow both a red and a green cabbage, for example, and we've had a yellow and a pink radish. It is exciting to have these varieties and they are so colourful...everything seems more lively **6LocFarmF***

*The diversity in my farm is 10 to 15 times higher than that in other farms because I produce organically **7LocFarmM***

2. Agrobiodiversity

Corresponding interview track section

- *What are the factors (both laws, public interventions and environmental/economic/social conditions) that determine the choice of growing one variety over another?*
- *What are the factors that encourage farmers to maintain local or ancient varieties? What are the most effective public or private instruments for this purpose?*
- *Are there any instruments that facilitate the exchange of seeds between farmers? Factors that hinder it? Has anything changed in recent years?*
- *Can you think of any other law or policy affecting agrobiodiversity?*

From 2004-2010 it was illegal to exchange or give away seeds that were not officially approved due to a wrong translation of the European regulation into Norwegian legislation that put a ban on all forms of exchanges of seeds, without distinguishing between commercial use and non-commercial use. Scholars have argued that this hindered any wide promotion of on-farm management. However, Norwegian legislation was amended in 2010 and since then farmers and others are allowed to use farm-saved seeds in their own production as well as to exchange material on a non-commercial basis, except for potato seeds⁵. Further policy initiatives that helped to strengthen on-farm management in Norway included: the Strategy for the Norwegian Genetic Resources (Skog og Landskap 2013) and the action plans on conservation and use of plant genetic resources (2016-2019) and (2020-2025). Furthermore, the establishment of Norwegian Community Seed Bank in 2018 made it possible for farmers to access planting material of landrace and other traditional varieties of grains.⁶ In other words, the legal provision for on-farm management in Norway is secured.

Before 2010, the seeds that were allowed to sell were part of an approved list from the Food Safety Authority (NFSA). In order to get to this list, the seeds had to comply with the DUS criteria: they had to be distinct, uniform and stable. However, the traditional varieties are per se more heterogeneous, so they did not meet DUS criteria. In 2010, the DUS criteria became more flexible, and one could sell also seeds that were not part of the official list from NFSA. In a way the DUS criteria became more relevant in the field of Plant Breeders Rights for the registration of protected varieties 1NatGovF

In 2010 it was not allowed to exchange seeds in Norway, so back then we were basically gangsters...we are talking about small packets of seeds, but that gave a feeling of rebellion, like being a clan you can say. After

⁵ Lovdata: <https://lovdata.no/dokument/SF/forskrift/1999-09-13-1052>

⁶ At the end of 2020, the Norwegian Community Seed Bank made available to interested growers planting material from 52 varieties of grains, including 25 landraces.

2010, we could exchange seeds up to 50 small bags without problem. We have also imported seeds from Europe, mainly through the network of Community Seed Banks. I have 250 varieties; Steven [business partner] has 600-700 varieties. We also have different breeding projects like the one on the fenugreek herb with the German biotech start-up Center **Gatersleben** **7LocFarmM**

However, in the Norwegian context, traditional varieties of grain and vegetables are normally produced in organic systems and at a smaller scale than commercial varieties, but the organic production has decreased and the data indicate that between 2012-2019 the organic area decreased with 16,7 percent. Farmers will express strong concerns about the reduced availability of organic seed varieties. They see the limited availability of organic seed varieties as a big constrain to produce organic. The limited availability of organic seeds is argued to be linked to the fact that these seeds do not fully correspond to the most relevant selecting criteria for commercial use. As **2NatEduF** explains plant performance is one of the most crucial aspects in plant breeding policies. High-performing crops and vegetables have the priority over other type of plants. Market preferences also play a role in restricting the opportunity to develop new plant varieties as consumers acceptance of new types of vegetables and crops is low. Uniformity, rather than diversity, is what guides the purchasing decisions.

*The criteria with which plant varieties are selected are the following: performance, they should be high-yield plants; fit to climate conditions - plants must be stable and robust; fit to market preferences – consumers shall buy them... the market likes things that a bit uniform **2NatEduF**.*

The **7LocFarmM** is very unhappy with regulatory framework on plant health. The farmer says that the new Plant Health regulations has restricted farmers freedom to import seeds from abroad. The administrative work that is now required to acquire a certificate for seeds that farmers wish to import is too high and this discourages other farmers, gardeners and hobby growers to initiate the procedure at all.

*Imagine that pumpkin variety that I have manged to achieve in 4-5 years after spending time 10 years in testing 50 varieties. I contacted the Minnesota University and got seeds from them without having to ask for any special permission from the authorities [NFSAs]. Then I talked to Cornell University and asked them for breeding recommendations. Soon we will have a new pumpkin variety in Norway, which took me ten years to make. If I had to start this now, with the new rules, I will have to ask for 50 certificates to be able to test 50 varieties. This requires an immense amount of time... It has taken out the fun part of this process of swapping seeds... I work alone in the farm; I don't have time for this... Only big companies with enough money can work on this... **7LocFarmM**.*

The **7LocFarmM** believes that seed regulations shall change radically in Norway to enable small farmers to sell and exchange seeds without being subject of tough regulations that usually apply to big seed companies. He argues that small scale farmers and gardeners are custodians of diversity and food security.

Farmers motivation to preserve and enhance biodiversity is driven by a strong ethical and ecological awareness and the need to advance a new system of production, whereas the financial gain is not their prime focus.

On the seed front, Norway needs a revolution. As I see it, the world is going to be quite different in the future and we are going to see hunger, we are already seeing it, and we have an ethical responsibility towards the future, to start working on this so that we can increase the degree of self-sufficiency, and we must by all means not stop the very, very, very, very few who work on it. And it's not rich people who work on it, because there's nobody who... well, the big companies they only think about quarterly results, so it's not in their interest to take care of diversity. It is only people who have an ethical and ecological, what shall I say, sustainable lifestyle [that care for diversity]

One participant, 3NatEduF, pointed to the role of sustainable grazing for preserving and enhancing biodiversity. However, sustainable grazing was closely related to the preservation of ancient cattle breeds and to an agricultural policy that prioritised sustainable management of land resources and animal welfare over a productivist model. According to 3NatEduF, to achieve this target the agriculture policy should have a strong focus on the mountain farming and address the challenges that mountain communities face when responding to the structural changes in the agriculture sector that take place at the national level.

Agricultural policy is very volume oriented. We need to rethink the volume issue and scale down what an individual animal and a single area can produce. The key is to utilise the area and the animal a different way which can contribute to self-sufficiency to an equal extent, or perhaps to a greater extent, compared to now 3NatEduF.

The agriculture policy in Norway is not very differentiated, we need an agricultural policy that has a special focus on the mountain areas as the farming conditions there are very different from those in the lowlands. To say this or that policy is sustainable, one need to understand what it means to farm in in Østerdalen, or in Valdres, compared to down on Jæren. What is sustainability? There are different stories on sustainability and different ways of using the landscape 3NatEduF.

Furthermore, 3NatEduF, advocates for an agriculture policy that has a holistic view of the challenges faced by our society and that the solutions offered should consider reducing the dual pressure of climate change and biodiversity loss. She also underlines the role that consumers can play with their food choices to increase the demand for food products that are embedded with ecological worth and animal welfare but reminds, at the same time, of the necessity to create the market conditions that help consumers make informed decisions.

The best way to preserve these varieties is to eat them, but you should create a market for these food products. When selling them in store, we should point out that these products come from these rare animal breeds and are embedded with unique quality characteristics... I see that the market for local food is increasing everyday but there is potential to grow more, and the tourism industry can play a role in this... you see when you got to Italy or Switzerland that they serve you their local food and the local community seems to eat the same kind of food... something that they go proud about... In Norway you will see that local communities eat regular product from the grocery stores instead 3NatEduF

3. Bio-cultural diversity

Corresponding interview track section

- *What are the main factors encouraging organic farming and extensive livestock farming?*
- *To what extent the production and commercialization of traditional products is promoted? What are the main factors hindering or encouraging that?*
- *To what extent the consumption of local products is promoted? What are the main factors hindering or encouraging that?*
- *At the public policy level, is there sensitivity to healthy and sustainable diets? How do such policies influence the type of agriculture practised? And how do they influence food processing?*
- *Can you think of any other law or policy affecting the diversity of agricultural practices and food cultures?*

Organic farming

Compared to neighbouring countries, the organic production in Norway is small (Eurostat, 2022) and it has been less attention to the organic sector in Norway (Landbruksdirektoratet, 2022), at least when it comes to setting specific political goals for production and consumption of organic food. The national strategy states that production of organic food shall only be promoted in accordance with the demand for organic food in the market. Special grants for animal production and area cultivated as organic is included in the agricultural agreement. In addition, money is set aside for special measures for organic agriculture through the Agricultural Development Fund (ADF).

Following one of the farmers, the consumer awareness of organic is probably not as high among most consumers:

I think it's more important than them being organic, for example. It's very varied. Because there are some people who are really concerned that things aren't sprayed, but then there are a lot of people who

aren't really that concerned about it, but it's kind of the local bit, but it's quite variable really what's important to (...) the different customers then 6LocFarmF

According to 6LocFarmF organic farming does not necessarily lead to more diversity:

In a way, it doesn't have to. Because there is a lot in organic farming that ... If you're industrially organic then there are a lot of hybrids there too, but sort of a lot of the same selection. There's kind of maybe even less diversity then, with the organic varieties, than there is with the regular ones, so I think maybe it almost has more to do with the size of the farm, that if you have an industrial organic production, there might not be as much diversity, but if you run a small farm, and kind of have the opportunity to test out a little bit different things, maybe... So, I don't know if it has that much to do with the organic certification. 6LocFarmF

Extensive livestock farming

Farmers get subsidies based on their production (volume) and cultivated area. In general, such subsidies will stimulate specialisation and intensification of production. Several measures included in the agricultural agreement between the government and the farmers' unions are directed towards management of cultural landscapes and conservation of biological diversity etc. These measures are to some extent adapted to geographical variations in agriculture, climate etc such as the regional environmental program (REP).

One thing there is to see concretely this with the subsidy to summer farms and care of cultural landscapes and the preservation of biological diversity and alike. And especially then this summer farm allowance (...), it is NOK 50,000 per summer farm. We had a proposal together with the Small Farmers Association now during this year's negotiations that this should be lifted out of the REP and created as a separate scheme (...) Otherwise, as a completely separate scheme within the agricultural agreement, you have this with subsidies for livestock breeds worthy of conservation then. (...) You get a rate then per animal per year, barely NOK 3,500 for cattle, and NOK 300 for sheep, a little also for horses, it is probably the Norwegian horse breeds we are talking about. Yes, and then you also have the general subsidy for animals on pasture, so you can say it is perhaps more indirect, and it applies to everyone in a way, but it helps to maintain a form of [extensive] production in that sense 4NatSocM

Local products

Over the last 20 years several national strategies have been developed to encourage business development based on the agricultural resources on the farm. The former government set a target to have a turnover of more than NOK 10 billion of local food products by 2025. This target was achieved already in 2019 and the hotel and restaurant sector creates a major part of the turnover. The

Foundation Norsk Mat (Norwegian Food) that administers the quality food labels and several other measures administered by Innovation Norway for supporting development of local food, are granted through ADF.

So, through the establishment grant that Innovation Norway⁷ administers, one will be able to get both courses and familiarise oneself with how such type of establishment of business can be created. And not least then to have the opportunity to try this out. They even support something like quinoa. So, these are the kind of ideas that Innovation Norway supports, and it's relatively easy to get grants in the beginning. Then one must show more business plans and then justify that this can become a profitable production eventually, but it is a very nice way to introduce new products then and services to society.

(8LocGovM)

The focus on local food has spurred the interest in diversification also within the big producer cooperatives, however, some of the interviewees think that it has been a huge difference in the success between dairy and meat.

TINE⁸ does ... They do a great job I would argue when it comes to the cheese side. They have made a difference to small-scale production of cheese. In other words, they contribute to distribution, they provide advice... 4NatSocM

However, when it comes to market access, local food products from small producers face great barriers towards entering the stores of the larger retail chains. Thus, small scale producers must find alternative sales channels for their products:

Yes, it is very difficult to get into the ordinary stores [if you do not have contract with the larger wholesalers / retail chains], so that is probably why we see that there is a lot of initiatives here, perhaps to find other distribution channels. Type [of ANF as] Farmers market, REKO-ring and other similar.

4NatSocM

Does a specific biocultural diversity hindering /encouraging factor emerge?

⁷ Innovation Norway is the Norwegian Government's most important instrument for innovation and development of Norwegian enterprises and industry <https://www.innovasjonnorge.no/en/start-page/about/our-mission/>

⁸ TINE SA is Norway's largest producer, distributor and exporter of dairy products with 11,400 members (owners) and 9,000 cooperative farms <https://www.tine.no/english>

As far as COOP⁹ is concerned, they have a producer association that is somewhat similar to the Gartnerhallen, and (...) BAMA¹⁰, (...) as an intermediary, (and) has a very large stake in the Gartnerhallen. Therefore, membership there [in a producer association] is somehow necessary to gain access to the various chains, and it means that the producer associations also get a bit of a gatekeeper function. They do. And kept saying, they get signals [from the chains] about what is wanted into the stores, both in terms of volume and type of product, and that means that they don't let just anyone in.

4NatSocM

Are specific laws/regulation/judgements/institutions/policy named?

I haven't talked about the development program for agriculture, (...) it is a major investment within Innovation Norway. It is... I mean it is important, especially for food and tourism, it has lasted for many years. It doesn't provide operating funds, which many people are probably asking for, but there are a lot of opportunities there. And this is especially true of competence development. And to in a way stimulate producer collaboration. So, one should try to make use of it.

4NatSocM

Were particularly relevant cases/examples/situations described?

The agricultural director in Oslo described a special “coastal goat project”:

... Then we had a project where we actually had such twofold purposes, or multiple purposes. We had this here by transferring a coastal goatherd to Oslo from Western [Eastern??] Norway. It was partly to get more grazing animals into Oslo, and more efficiency around it, and then landscape development when there are so few animals that are in Oslo then. And then the other thing was really to take care of a rare breed. And the third thing, which we then also got money for, was how to bring this new product into the market, so we had a project on this to try this product, and that was through such a cooking trial then. So, we even went out and tasted it ourselves.

8LocGovM

1: yes, because then it was goat meat (...) which is not so widely used in Norway?

⁹ Founded in 1906 as NKL (Norges Kooperative Landasforening; Norwegian Cooperative Association), Coop Norge AS is one of the country's biggest supermarket chains, with a revenue turnover of 30.041 billion NOK. Coop have various different shop types and sizes, consisting of Coop Prix, Coop Extra and Coop Mega (smallest to biggest).

¹⁰ Wholesaler

R: Correct. So, it was a lot of fun. But there is a huge potential for this here in Oslo then. Because of other cultures as well, it's interesting, but, at least this was the kind of approach we had then in connection with this three-year project (id 08)

I1: Where did you get the funds from?

R: Directorate of Agriculture, whereas the part that concerned testing and things like that, I think it was Innovation Norway that was in the picture here. (8LocGovM)

4. Organizational diversity

Corresponding interview track section

- *What is the situation regarding access to land in the national/local context? What are the main obstacles to access? Are there instruments that facilitate access to land?*
- *What is the situation of young farmers and women farmers? Are there policies encouraging diversity in farmers' age and gender? Are they effective?*
- *What role do producers' organizations play at the national level and in the local context? What is the situation of a farmer who does not want to be part of a producers' organization?*
- *To what extent do public policies support the integration of agri-food chains? What are the consequences of the characteristics of processed products? And on agricultural practices?*
- *What are the main drivers for farmers to sell their products on local markets or through direct sales? How do they influence the type of farming practised? And the characteristics of processed products?*
- *Can you tell me about public procurement for the supply of products to public canteens? What are the factors that most encourage producers to participate? How do they influence the type of agriculture practiced? And the characteristics of the processed products?*
- *Can you think of any other law or policy affecting organizational diversity?*

Access to land

Norway has a strict regulation of access to agricultural property. On the one hand, the laws help to preserve the agricultural structure and make it possible for those who shall take over to earn a living from the farm. On the other hand, many people are excluded from access to agricultural property because of the allodial law.

Yes, it is clear that ... there is not a great deal of turnover of agricultural properties outside the family. (...).

Then you can say that perhaps the smaller properties then, they will be relatively more expensive, as the limits for license regulation and the like have been raised, (...). We can certainly find those figures, but the price of agricultural property, even if it is still regulated, has gone up. And it is perhaps a problem then, that those who want to exploit small land resources and in a way make an income from it, are now competing

with people with great purchasing power who want it as a leisure property. They don't care about the operating economy in this, but rather compare it to buying a cabin in the mountains. So, it is a paradox, that even though it seems that both the allodial law and licensing regulations, that do not apply to the smallest properties, have been liberalized, it has not become any easier to get hold of land for that reason, at least not those close to the market (...).

I: (...) in that sense, do you think that the allodial- and licensing acts [konsesjonsloven] works in a way that, beyond the smallest, which then this is excluded, it works in relation to keeping prices [low] and access [to land] available, so to speak?

R: Yes, it does. But it is clear, there are advantages and disadvantages to that. The seller doesn't think it's so good to get less. [You have] those stories about the farming couple who have worked a long life and are selling the farm, and then can only afford a two-room apartment themselves. But overall, as we perceive it, it is important that there is still a connection between the property price and what the property can yield in agricultural operations. So, we [will] keep at it. But there has been a significant liberalization over the last 20 years, we can say, in that [the area requirement] has raised. I don't remember at the moment, it is 100 acres [dekar] or 25 cultivated or something like that (...) 4 NatSocM

Soil and land protection

Agricultural land in Norway is scarce and only 3 percent of the area is suitable for cultivation. The land act shall protect agricultural land from being used for other purposes, however in many cases other considerations win over soil protection. It's a question of how to strengthen the soil protection locally.

So, I think the preparedness situation is particularly interesting, and now there are land-use plans that are also rolled out in the municipalities, and then of course we are actively involved in that as well in the statement to what is proposed. And it is of course natural that property developments are also proposed this time, and then it is important to set up a preparedness mindset included local food in this. We have given stronger requirements in connection with the use of cultivated land.

Yes, in recent years then, soil and land protection has gained more traction. So, in that sense, it's the kind of direction that comes from the otherwise green profile in recent years. 8 LocGovM

(...)

I: Yes, but then we're on to soil protection. Which also I think is also very important for the disposition of land and the resources one has locally then.

R: Yes, obviously it's important, and I was about to say, one might sense that the smaller and slightly entangled fields (...), which might be suitable as market gardens, that they're more vulnerable to being developed for other purposes. It's now also just my opinion, but in that sense... I guess it's a truth that if an area is between two areas that are disposed to something else then it's easy for it to be taken as well.

4NatSocM

Young farmers and women farmers

It is a challenge to recruit the younger generation into farming. Poor income opportunities, working on your own and with less social security than as a wage earner are some of the reasons mentioned. Especially, women are less attracted by working for themselves and with long working hours. The government is trying to counteract such negative tendencies through various measures.

Yes, so how much can a government achieve with politics in relation to, for example, the recruitment of women? It's clear we have something. Something like the young farmers grant, and (...), especially on the investment side where they can in a way get a higher grant share as a woman. And then (...) you have the agricultural welfare scheme for sickness and care and so on. My feeling is that they are more demanded by women, more focus on the fact that they should be improved, so (...), it is a measure that we are working on and should work more on if we are going to make arrangements for female farmers then. Especially this with replacement in case of illness and childbirth and maternity leave and things like that **4NatSocM**

When you have a generational change, then both the old and the young come to us at the agricultural office to have a conversation about how to manage the generational change. And then this with additional businesses also comes up. So, in that discussion, we get to introduce the opportunities that Innovation Norway provides, and they get to know about this with women's opportunities in that context. **8LocGovM**

(...) we have a fairly gender-divided labor market in Norway then, even though we have a large mobilization of women in working life in general, it is very gender-divided, so it seems as if women go to quite a few other professions, (id 04)

(...) women to a greater extent, or girls to a greater extent than boys, move from rural areas then, and when it is like that, agriculture is necessarily affected in a way. And the fact that, there may be few farmers in

some rural areas, that you become more lonely, and women are probably more concerned about it... this is only my opinion then. (4NatSocM)

There is often talked about what is called "Inn på tunet" services and productions here. Green tourism, and there are many such good names for this here then. So, this comes out partly through a situation where one might want to be more at home then and at the same time establish a business. We see that it is perhaps more appealing to women. 8LocGovM

I work a lot with what is called green care, or what people now call "Inn på tunet" ["Into the yard"]. And it's not food then, but it's service production, and there we see very clearly that the proportion of women is completely different and larger than in ordinary agriculture, So I was about to say, we have the fact that there are women who, in a way, also want to create a workplace at the farm, either by starting ... from scratch, that there is nothing else, to create their own work place, or also a desire of having a workplace next to the partner who runs more ordinary agriculture. So, no, one should certainly not rule out that an even stronger focus on small scale could appeal more to women then. And then I am a bit cautious in saying that women do small scale and men do large scale, in a way then. (4NatSocM)

Producers' organizations

The representative from the Farmers' Association pointed to that there are differences between different types of production (see for instance the quotes about the gate keeping role of organisations in the horticulture value chain). He also pointed to a difference between dairy production and meat production, where the large-scale cooperative TINE has been successful in cooperating with and promoting small scale farm cheese initiatives. While NORTURA¹¹ in the meat sector has struggled with diversification and niche production. One explanation may be that TINE has avoided the vertical integration from retail chains that we have seen on vegetables and fruits (see above) and partially on meat. He explains (4NatSocM):

So, especially in the green sector, it's sort of a very clear sign of vertical integration from the top onwards. And we're curious to see how this will affect the meat sector eventually, because there's a little bit of talk about overproduction and the counterforce isn't as strong then on the meat side as it still is within TINE. And (...), REMA [retailer] is strongly linked with Nordfjord [processor] meat, so Nortura [producer coop] is to a much lesser extent in there then, and has in a way made itself more dependent on Norgesgruppen[retailer] for example. (4NatSocM)

¹¹ Nortura is a Norwegian agricultural cooperative that operates slaughterhouses and other processing plants related to meat and eggs. The company was created as a merger between Gilde Norsk Kjøtt and Prior Norge in 2006, and has head offices in Oslo.

Public policies support the integration of agri-food chains?

It is a question if the resources and interests to do that job exists [among the local bureaucrats], then, In practice, it is probably the case that the control function towards the ordinary grant schemes has become more important. So, some farmers perceive that the agricultural office has become more bureaucratic in the sense that they come and count your sheep, and that's sort of what they do. And obviously, they have an important task in kind of administer the land and concession law, and it probably takes a lot of time in many municipalities. In line with kind of changes in the legislation, it's probably become more difficult issues as well, this with pricing, and enforcement of the duty to operate, and things like that. And in terms of conflicts over land use and things like that. So, there are a lot of stakeholders around in the municipalities in terms of land use, so it takes a lot of resources in the municipal administration to handle those types of issues. It may be at the expense of the job they should have done then towards being more of a development actor towards agriculture. Although, the ambitions from the government are just as high, maybe higher than they were, they get letters of assignment and stuff that underlines this. (4NatSocM)

*(...) we see that such market gardens can then also be linked where you already have CSAs on site. (...) I don't have any examples in Oslo, but we were just in Gothenburg on a study trip, and there were examples of how one combined then CSAs and market gardens, and that strengthened their operation (de fikk flere
bein å stå på) 8LocGovM*

Main drivers for farmers to sell their products on local markets or through direct sales

There are several driving and hindering forces at play for farmers who want to sell their products locally and/or direct to consumer. Farmers that sell direct to consumers report an advantage to have direct contact with the consumer and get feedback on the quality of the products. Local products may also strengthen food culture and traditions that also give a certain pride to farmers. Diversification, processing and local distribution may also contribute to strengthen local employment and economy. To set the price oneself and not being dictated by other players in the value chain is also important. 8LocGovM experience that the drive for creating new businesses on the farm starts from the curiosity for new things. Both social and economic aspects contribute positively to the farmers experience with selling at local markets.

*(...) this here of transitioning from a commodity role then, to developing more productions and getting **more pride** in the commodity then, I think that might help a little bit in further development. But one should not underestimate the fact that **being a bulk producer is also a good role**. So, we have to complement each other. But the fact that you can realize a little creativity by also having the development of something you are going to make from your own products, I think that is central. And then it's **the traditions** that they bring with them from before, and **the curiosity** for new things as well, that do it then. And so now I'm an economist then, but it also creates its own market that makes one get curiosity about maybe ... **and gets more out of the market** also through **its own price**. So (...) there's also that... as we notice then in the*

*Farmer's Market context., being **directly in contact with the customer** is very valuable, to experience that the customer comes back, it provides the support that perhaps many should have received much earlier.*

*That feedback is very valuable. So, the farmer's market as a principle is an awesome system where the farmer himself is required to sell. Then you really get to know things. **8LocGovM***

Public procurement

According to the interviewees, because of how the tendering processes in the public sector are practiced, it favors the major producers. They think it is possible also to include more local and organic food in the tenders, but it requires more knowledge and engagement from the buyers.

I: (...) there is a lot of procurement of food within the public sector, which can also have an influence?

Id04: Yes, you are thinking about tenders and such?

I: Yes, among other things. How does it affect the opportunities for producers for example? Being able to deliver locally.

R: Yes, it has an effect. There should be opportunities. But that requires that the buyers are aware of it and take advantage of the leeway to request such things in their tenders. I fear that there is a slightly too one-sided focus on price, that one emphasizes price far too much in relation to other things. But I think the training of those who deal with it on the buyer's side is important, so that they see such things.

Understand that you can't request, you can't make a tender to request a specific product, but you can set criteria, so you can't ask for coke, but you can request black soda, right. (...) But otherwise, centralization is now taking place in those areas, especially within the state, I have seen that, and I think it is a cross of thought, for example the County Governor, which I perceive are now coming together in, (...), a number of procurement functions and staff functions, so that in a way you have to be nationwide, where previously the County Governor in Telemark could perhaps step in to make his own agreements, this now goes through a joint central (...) Yes, it means that the state is in a way moving away from geographical organization to more functional organisation.

*(...) But it is possible, without my having the detailed knowledge, to do this and in a way make framework agreements and such and preliminary rounds, so I think many people are perhaps very afraid of the EEA here, and that the ESA will come and click on you if you don't behave properly, but this is an unexploited area of opportunity for the smart buyer with social responsibility. **(NatSocM04)***

11: Yes, but then the challenge is also in a way what this looks like from the producer's side. To what extent do they have the opportunity to, for example, be a supplier to the public sector?

R: yes, I came to the conclusion that it can be a little bit difficult. Ideologically speaking, as I say, it is very clear that Oslo is working on this, but it can probably be difficult to work towards such a market then, because there are large orders. Maybe that's exactly when they're going to have these products, so now I'm just trying to reproduce what was said, in these groups, but there was such a local producer who had a maybe not so good experience of these types of local orders then. That it doesn't work the way it should. As I said, it probably has something to do with the organization of the orders, and how easy it is to play up to these orders at any given time. 8LocGovM

5. The Norwegian agricultural model

5.1 Views on agricultural models proposed at the national/regional level

Corresponding interview track section

- What is the model, or models, of agriculture that has been promoted over the last thirty years?
- Has the model(s) evolved over time?
- What is the vision of agriculture in the future?

What is the model, or models, of agriculture that has been promoted over the last thirty years?

The picture that the interviewees draw of the Norwegian agricultural model greatly fits with the desk research.

In a way it's characterized by stability. I think that's kind of overarching. Because the main pillars of it remains. After all, we have a farmer- or cooperative-based market regulation. We have customs protection. We have an agricultural agreement institute. And we have these laws, i.e. the licensing [concessions] and land-use legislation then. (NatSocM04)

But it's a corporate system then. Must say so, through the Agricultural Agreement [between the government and the farmers' associations]. And that the cooperatives are given the authority to market

regulation then on meat and milk. Green sector is pretty much out of that system. Gartnerhallen is not the market regulator in the way Nortura and TINE are. And there has been a diversification then, so to speak. Obviously, especially in the cheese area, there has been a small revolution. That's for sure. Also perhaps in other areas, but it is probably most evident on the cheese and dairy side. I think in a way, the acceptance in agriculture for it here is greater than it was.

I: For also having something that goes outside the cooperatives or that ...

R: yes, I think I'd say that. A lot of people will probably want it to be a larger share [that are outside the large cooperatives], but it's bigger than it was 30 years ago, I think that's for sure.

But in some areas, you see that the centre of gravity in production is shifting, i.e. that you get a larger share, for example, of milk to Jæren and Rogaland, but perhaps especially within Rogaland, that it is a movement towards Jæren. And you can see it in Trøndelag, the outskirts of more central areas of the Trondhjemfjord, but I can't say, for example, that milk has been moved back to the grain areas, but there is a centralization within the grass areas, and perhaps to the best grass areas then, as an example. (...) Not so much a rechanneling¹², but that there is a structural change from smaller to larger, it happens, and it then also leads to a geographical shift of production to some extent.. (4NatSocM)

The producer cooperatives have had a tradition of standardizing its production. There is no doubt that this is the disadvantage of the cooperative system, that they have not been too innovative about products. And I understand very well that on the whole, it is the traditional agricultural products that are important to deliver, i.e. the large volumes, and then they have to convince their members that they must also have a variation. But that has changed. There is so much more faith in creating your own products now. And there's a lot more flexibility from TINE than before. And when I was at Ås [the Agricultural college], we learned a lot about making for example different cheeses and the risks that was involved in production and delivering of such things. But you can see that the discussion about the challenge of developing cheese, in the early 80s, with round cheese versus square cheese [a little irony], it's not there anymore. Today you could say that these are ridiculous questions, but what we see today is that farmers are thinking a lot on their own now, and just yesterday I had a conversation with a farmer who wanted to sell milk locally. And the fact that you can have the opportunity to work a little bit on the side of the cooperative system, that's changed a lot. 8LocGovM

At least I find that there's a bit more flexibility. And that's part of the agricultural policy. The agricultural policy of the 70s assumed that it is volume that's matter, to cover the market, and you have to distribute

¹² Channeling policy means that the agricultural policy stimulates grass production in marginal areas while grain production is dedicated to the areas with better climatic conditions. Rechanneling then means to direct more milk and meat production towards the areas with better conditions for growing things other than grass.

between the east and west of the country right, that you have plant production and meat and milk in other parts of the country, and that is still part of the system.

I1: What do you think about that?

R: So, it's a little stiff. There are so many people in Eastern Norway who want to look at opportunities then, and when the subsidy system is so twisted, it means that you should have to work extra hard to have grazing animals or things like that in an area that then receives less and less subsidies, because they want to turn this over to other parts of the country. So that's part of the system. And it's been since the 50s, so it's not original, it's called channeling policy there then. But we know that many people here in Eastern Norway have love for their farm and what they want to produce, so there are always new things, and I think that this with testing, which we were talking about earlier, there can probably be more of it now when you have these additional businesses, trying out new things that one wants to introduce to the market. **8LocGovM**

Has the model evolved over time?

I: Yes, but you emphasize stability?

R: yes, in the model itself, I'd probably say that.

I: Yes, and that's what you call a corporate system in terms of market and prices and revenue?

R: Yes, the instruments are intact. They may be more vulnerable. You'll find tendencies toward weathering, but there's none of it that we had almost in the '90s that's not here still then. It's not cooperatives in the green sector anymore, okay, but you have it in the other areas. And the land law remains, the concession law remains, even after four years of a government from the right, which in a way had the stated goal of removing this here, it was not.

R: (...) there are tendencies towards weathering then, in the sense then, we talked about in terms of legislation, that the limit has been raised for licensing and price regulation. In that sense the room for manoeuvre to set special Norwegian prices is less through our adherence to the WTO agreement, it is, of course, almost the 30th anniversary of, so it is perhaps the clearest feature that has characterized it then. This has led to a change in the targeted prices and things like that because we have reached the ceiling of what is allowed in financial support or business support for agriculture through limits set through the WTO agreement, so that means that basically we have had administratively or politically set prices for all

agricultural products, the so-called target prices. It's been defined as a form of support, and then it's reached the ceiling, (...) it's more market-based now than it was in the past, so you've got a stronger element of market steering in agriculture in that sense. Then it is a rationalization or merge of farm holdings, it's going on even though the speed has probably slowed down somewhat. Then there will be fewer left, and then it's noticeable that someone quit farming. But we have maintained the production to a large extent. We produce milk and meat, and we have a success story with the fact that the Norwegian share in the food grain has increased greatly during the 30 years. So, you still have a politically regulated agriculture in many ways, but the room for manoeuvre has become narrower. And especially, the participation in international trade agreements and stuff like that in a way affects Norway a lot here when it comes to have special Norwegian regulations on things. (4NatSocM)

What is the vision of agriculture in the future?

One shared vision among the interviewees was to have more people into farming. They pointed to several reasons. Some informants pointed to improved resource utilisation, especially animal husbandry that can utilise more of the outfields and rangelands. Others were concerned about the workload connected to diversification of production that need more people available. Diversification also means smaller units that implies to increase the number of operative farms.

The vision is that in the short term there won't be very much fewer farmers than we are now, because (...) If we are to have a vibrant agriculture all over the country, it cannot be maintained by much fewer people than we have now. So, in the short term, it's kind of slowing down and stopping the cessation of use, and then in the slightly longer term, really that we should have had more farmers. The fact that we are better able than today to use all the available resources in agriculture, and because we are a grassland, it says something about getting better at using coarse [grass] feed. This applies both in Infields, but also in outlying fields (rangeland). That we increase the degree of self-sufficiency produced on Norwegian resources (4NatSocM)

There's one scheme we haven't talked about, and that's that mentoring scheme. I think it's good. So, it is a scheme through the Agricultural Agreement, and it is largely administered by the Norwegian Agricultural Advisory Service (NLR). In other words, experienced, competent farmers act as mentors for start-ups. (4NatSocM)

I1: What is your vision for the future of agriculture in your region?

I believe in this with market gardens, introducing new people into the business. Because that's what we're talking about to let people who see the possibility of starting to sell, I hope and believe that. It's very hardworking then, so I guess that's what determines maybe if you lose interest. But it associated with discussions about improving quality of life besides farming. If you get enough finances with just a small

production, that's very good. And some may struggle out of living on small production, while some wear themselves out on very large productions, so I think scaling down their production might give the opportunity to think a little further then, about introducing new products. So, it is perhaps a vision, that they see the opportunity through becoming small enough, these who are already into farming, and then perhaps look at the further development of production and processing of their own production, on the farm or wherever they want it. So that's probably the kind of direction that it can go. 8LocGovM

6. Sustainable and Diverse Food Systems

6.1 Sustainable food systems

Corresponding interview track section

Speaking of Sustainable Food Systems:

How does your institution interpret the concept of sustainable food systems?

What are the main obstacles to the implementation of sustainable food systems?

What actions should be taken to promote sustainable food systems?

The concept of sustainable food systems

The interviewees include three aspects into the definition of sustainable food systems: economic, social and environmental. The economic sustainability of farmers is key, and it is threatened because of low prices and high costs in the agricultural sector. The retail chains exert too much power, and the interviewees demand a more active policy that can improve income opportunities in agriculture. Social sustainability also needs to be improved and specially to improve welfare benefits and strengthen the social working environment in agriculture. Including in social sustainability is also food security and to increase the Norwegian self-sufficiency for animal feed and food production. The informants agree that there is a need for a green transition in agriculture and that the government must provide instruments that enable environmental progress on the farms.

It is certainly that one must include all three dimensions in the concept of sustainability. Which Gro [Harlem Brundtland] was concerned about. In other words, economically, socially and environmentally. That's perhaps the most important thing on that. That the sustainability in all areas must be completely applied to each individual farm. 4NatSocM

I: How are you supposed to do that? Because maybe the situation is very different, I believe.

R: It's very different. It's probably a lot about the competence of the user, both in terms of cultivation, in terms of climate impact and things like that, but also, to say, operations manager-wise, in a way of making the financially smart choices. (...) there is perhaps a lot of focus sort of on the purely agronomic and the operational and technical, but the knowledge that you are self-employed, that you are financially responsible, yes in a way the operational management of the farm [is equally important]. And then we kind of mean that over time, the framework conditions are too weak ... Now it has been said that there will be a growth plan, and we have clear expectations towards the authorities and more money must be put into Norwegian agriculture over time. And then we have to fulfill the climate agreement we have entered into [between the government and the farmers' associations]. It will be crucial for this that we need instruments in a way to measure the climate status and environmental progress on the farm, that you in a way get indicators and measurements. The climate calculator we operate and roll out, we hope that it becomes appropriate and can be used there. The fact that we have KSL that hopefully will act as a documentation system, because it will be expected that we can document the operating conditions in every possible way.

(4NatSocM)

*But sustainability is also fair prices, that is, what is essentially the effort to produce a commodity. So, it is also clear to the forums that we talk with then, that it is a price formation with a fair price, it is also important for the farmer, and it is also important for us that they find a business that gives vibrancy. But in a sustainable context, we also have the environmental aspect with us. And then again, there is this here to live up to the desired goals you have when it comes to the environment. And there the public sector is very strongly involved with financial means that should also stimulate, and there is also legislation that allows us to control. So, (...) agriculture, (...) still have a way to go there. And talking about food production potential is also something we are concerned about. Because we are now running and designing an assignment now for Oslo then. Food production potential for Oslo. Both urban agriculture and agriculture around the City of Oslo. And from that we aim to get some sort of quantification or indication then of how much can be locally sourced food, to call it that. **8LocGovM***

What are the main obstacles to the implementation of sustainable food systems?

*We're very concerned about the power that the retail chains exert these days, (...) if we look at it broadly with sustainability, we don't think it is a good development, because it challenges economic sustainability especially upstream in the chain. And the social dimension. The fact that there is a high accident rate in agriculture. In other words, it is one of the more accident-prone industries. The high death rate cannot prevail. This is probably partly about loneliness, both socially and that one does not get enough collegial cohesion then to develop and discuss things and in a way see solutions. So, in a way providing meeting places for farmers and the peasant family is important, so there the Farmers' Union and our local associations have a very important function. So obviously, there's been a growing focus on animal welfare, so it's going to be a challenge, so we've have to work on that, but it's important that that focus is also on the agricultural conditions **(4NatSocM)***

6.2 Sustainable food systems and key policy – synthetic survey

(insert in each box the total number of votes for each item in the list)

	1 Very negative impact	2 Quite negative impact	3 Mildly negative impact	4 It does not have any impact	5 Mildly positive impact	6 Quite positive impact	7 Very positive impact	Don't know
The regulation on seeds and reproductive material		2			1		1	1
Agriculture in protected areas (natural parks, Natura 2000 sites)	1		1				1	2
Quality schemes (PDO, PGI, mountain products)					1	2	2	
The regulation of organic production			1			2	2	
Food hygiene regulations			2	1		1	3	1
Technical standards for agricultural products and foodstuffs		1	2		1	1		
Producers' organisations			2	1		1	3	
Supply chain contracts		3			1			1
Food and rural districts							2	3
Consumer needs			1		2		2	

Comments: The tables were conceived as difficult to fill in. Some did not answer and because people had problems with filling the tables, we added a don't know category.



6.3 Diverse food systems

Corresponding interview track section

Talking about diversity of food systems:

How does your institution interpret the concept of diversity of food systems?

What are the main obstacles to achieving food systems diversity?

What actions should be taken to promote the diversity of food systems?

Guiding questions

- What are the key emerging answers to those questions?
- To what extent the answers connect to the desk research findings?
- Do they differ substantially according to the interviewee's role?
- Do they differ substantially according to the interviewee's national or local level scope?

6.4 Diverse food systems and key policy – synthetic survey

(insert in each box the total number of votes for each item in the list)

	1	2	3	4	5	6	7	
	Very negative impact	Quite negative impact	Mildly negative impact	It does not have any impact	Mildly positive impact	Quite positive impact	Very positive impact	Don't know
The regulation on seeds and reproductive material	1		1				1	1
Agriculture in protected areas (natural parks, Natura 2000 sites)	1						1	2
Quality schemes (PDO, PGI, mountain products)				1	1		1	1

The regulation of organic production		2			1		1
Food hygiene regulations		2		1			1
Technical standards for agricultural products and foodstuffs	2	1					1
Producers' organisations			1	1	1		1
Supply chain contracts	2	1					1
Food and rural districts						2	2
Consumer needs		1			1	1	1

Comments: The tables were conceived as difficult to fill in. Some did not answer and because people had problems with filling the tables, we added a don't know category.



Italy

A. Key informants

1. Summary table of key informants selected for interview

As we already conducted several interviews that might also serve the FOOdIVERSE project, we will use them as a base to be complemented with some new ones.



id	Livello	Ente	Nome
	National		
1NatEduM	national	Università	Gianluca Brunori
2NatEdu/GovM	national	università / ministero	Stefano Grando
3NatSocM	national	ESTÁ	Andrea Calori
	Local		
4LocSocM	local	FTF Bio	Maurizio Zanghielli
5LocFarm/SocM	local	biodistretti	Giuliano Micheletti
6LocGovM	local	direttore dell'ufficio delle produzioni biologiche	Bigaran Federico
7LocUniF	local	antropologa del cibo	Marta Villa
8LocFarm/SocF	local	Presidente Consorzio Val di gresta	Vanda Rosà
9LocEduM	local	Economista	Geremia Gios
10LocGovM	local	Agronomi direttore centro biologico Fem in pensione	Enzo Mescalchin
11LocFarmF	local	CSA	Stefania Lusuardi
12LocGovM	local	APPAG - Agenzia Provinciale per i Pagamenti	Pietro Molfetta
13LocSocM	local	Pimpinella	Luigi Calzà
14LocGovF	local	Comune di Trento	Paola Fontana
15LocLawM	local	Avvocato esperto Usi Civici	Mauro Iob

Codex



11	Nat	Gov or Gov/Farm	F
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- **Number of the interview**
- **Nat/Loc = geographical scope of expertise**
 - Nat = national level expert
 - Loc = local level expert (Living lab area)
- **Edu/Gov/Soc/Farm – institution/occupation:**
 - Edu = Education (academia)
 - Gov = public institution/agency
 - Soc = Civil Society
 - Farm = farmer
- **F/M – gender**
 - F = female
 - M = male

B. Interviews with key informants - findings

1. Introductory part

Corresponding interview track section

- *What is the institution/agency/organisation of which you are a member? What is your role? What did you do before this work?*
- *With which other institutions/agencies/organisations do you collaborate in your work?*
- *Do you have direct contact with farmers? Could you describe their characteristics? What are the aspirations that emerge from them? What are the concerns? The obstacles? Have these characteristics evolved over time?*

1.1 Interviewee's Identity and expertise - Summary table

Fill this table with detailed information on each interviewee

Identifier Code	Role/Institution (detailed description)	Collaborating institutions/actors	Have direct contacts with farmers? What are their characteristics?
1NatEduM	Full Professor in Agriculture Economy, University of Pisa Research on the themes of sustainable agricultural production and rural development, research politics, innovation and digitalization in agriculture	Collaborates with several actors thanks to research projects: NGOs, institutions, research centres	He has direct contact with farmers (mainly from Tuscany) that have a sensibility to sustainability issues: organic farmers or producers of traditional products, biodiversity. Farms that have introduced digital technologies. The main problem farmers report is bureaucracy, and the second wild animals. They have problems with professional organizations for their inefficacy and they have problems with access to market. Too small for big markets and too big for farmers' markets. In the last 20-30 years the farmers' characteristic changed in the way that now they all incorporated multifunctionality and diversifications in their farm, has they realized that high specialization is risky. A more recent trend is the appreciation of the importance of cooperation in the sense of building networks and collective learning. The main drivers of these changes are EU policies and consumers demand.
2NatEdu/Go vM	Consultant at the Ministry of Agriculture and Forestry, Research Department, which deals with the coordination	Collaborates with universities, with	He collaborates with farmers in an indirect way, through professional organizations. In the past he

	<p>between EU policies, national strategies and research. He also worked as a researcher on rural development and agriculture economy related to sustainability and quality. He also worked as a technician with EU POR and FESR fundings.</p>	<p>European think tanks and EU committees</p>	<p>was in contact with farmers for participatory development planning and local group animation.</p> <p>The main feature of farmers in their diversity in terms of capability (economic and knowledge, the ability to grasp economic, political administrative opportunity) and objectives, and increasing awareness of present and future challenges (climate change, food safety, market demand). The information access can always improve, but the capability is crucial because norms change and they are complex. Burocracy is a common complaint, as if the farmer becomes a manager, someone else has to cultivate the land</p> <p>(“dottore noi abbiamo il nostro lavoro non è quello di cercare fondi di riempire i moduli di avere rapporti con le amministrazioni il nostro lavoro è quello di produrre e vendere prodotti agroalimentari. E a volte invece ci si tratta, ci si aspetta da noi che diventiamo manager di noi stessi per tutte queste altre cose ma lascia che qualcun altro debba fare l'agricoltore”)</p> <p>This is what emerges from small and mid-size farmers. Their main aspiration to conduct and activity that allows farmers to pay their work and sustain the family in the middle term (at least 5 years)</p>
3NatSocM	<p>President of Està economia e sostenibilità, and Indipendent cultural association doing research and training and field work. He has a PhD but worked rather outside academia, independently working with applied research, and doing activism. Three dimensions: scientific, professional and activism.</p>	<p>NGOs (Action Aid Italia, ACRA, Mani tese), some large economics actors as funders, and institutions.</p>	<p>Contact with a selected typology of farmers, who chose to produce organic, certified and non-certified, and seek direct contact with consumers; farmers who work on agroecology, and those with circular economy. the main emerging feature is the fact that often they are lonely innovators, there is a sense of isolation, they decided to leave the unconventional system but they built their relationship with consumers alone. Several farmers are divided in two, with one hand they are in the conventional system and with the other they are in the alternative one.</p>
4LocSocM	<p>Presidente FTBio.</p> <p>He had an incredible variety of working experiences, including a 'creative re-use centre' to give second life to industrial discards, theatre actor and then organic farmer of chili peppers. FTBio is a second level association of organic associations with the objective of increasing organic transition</p>	<p>They collaborate with a San Michele (research centre) and Coldiretti for technical support and funds. Biodistretto Val di Gresta, whose members are partially also under FTBIO ; Slow Food; with the Province through the Tavolo Verde; with the University through Nutrire Trento</p>	<p>They work with small organic farmers and the bio-district who contains slam organic farmers. Farmers that going organic production are mainly new farmers (without a farming tradition in the family), but also big players are recently joining because the damage to the soil is beginning to be visible ("adesso ci sono sempre più agricoltori che fanno la conversione in biologico anche perché abbiamo visto che sono cavoli amari recuperare il terreno. Anni e anni di pesticidi e più gliifosate, cioè li distruggi tutto l'ecosistema, quindi ci sono ci sono"). The main struggles for organic is 'la deriva', the leaking of chemicals from a conventional farm to an organic one, which is 25</p>

			metres, the second is access to market, because without a coordination you have to find your own commercialization channels. many organic farmers are part time farmers, but it's a heterogenous category.
5LocFarm/So cM	Small organic wine and grape producer sine 1997, one of the first in Trentino. Engaged in the Biodistrict of Trento	Collaborates with other similar producers to build a network to exchange knowledge and protect the production.	Collaborates with similar farmers though the Bio-district, after the failure of a cooperative, they decided to create an association that promotes the culture, but leave the economic and market issues to the individual farm
6LocGovM	Director of Organic Production Office of the Trentino Province (retired)		
7LocEduF	Food Anthropologist		
8LocFarm/So cF	Organic Farmer producing vegetables and president of the Consorzio ortofrutticolo Val Di Gresta	Other farmers of the consortium	
9LocEduM	Full Professor in Agriculture Economy, working on pest treatment damages, evaluation of sustainability in the Po river area, pastoralism and sustainability		
10LocGovM	Researcher (retired) at the San Michele Fondazione Mach, research centre, and was teaching organic agriculture and viticulture at the university. So research and consulting to farmers. Now he volunteers in a cooperative (cooperative Samuele) for social agriculture		Provided technical assistance to farmers though the cooperatives
11LocFarmF	Small farmer, and she is the coordinator of the CSA	Collaborates with an association that carries on a kindergarten in her farm. She is in a rete d'impresa with another wine producer	
12LocGovM	Director of the province agency for CAP payments. Previously he was working in the Province on mountain agriculture	Collaborates with the National CAP Payment agency AGEA and the Ministry; with other mountain regions in the phase of negotiation of the new policy, with the Province office that deals with PSR; with trade unions, with cooperative, with the Agency for	Direct contacts with framers for matters related to the payments and during control activities

		environmental protection, and other actors working in the agrifood chain	
13LocSocM	President of the non profit association La Pimpinella for agrobiodiversity protection in the Trento Province.	Collaborates with a similar association in Veneto, and with all subjects dealing with agrobiodiversity: Caldonazzo, Trentino Arcobaleno, Slow Food. Collaborates with Selva Green, an association in Bassa Valsugana, a very marginalized area	Organic farmers (certified and non-certified) and young farmers
14LocGovF	Works in the Municipality of Trento, director of the office of agriculture policies and participated enterprises. She started to work with the sector when the Municipality began to appreciate the cultural importance of food and agriculture for the town	University, the Museum, with other municipalities but not with the Province	Deals with farmers who sell in the farmers' market: small young farms with diversified production
15LocLawM	Lawyer, expert in collective land rights with a focus on Trentino	Associations of collective land rights management, administrations	

1.2 Interviewees' views of farmers' and territory's characteristics

Guiding questions

- What are the emerging traits of the characteristics of farmers as portrayed by the interviewees?
- Does the profile differ according to the national or level context (i.e., the farmers' identity, concerns, aspirations, portrayed by local-level-interviewees differs substantially from those described at national level?).
- Did such characteristics evolve over time?

The farmers with which the interviewees are in contact all belong to a peculiar category: they are either actively involved in research projects with academia; are organic farmers, or are engaged with political activism. They are generally small to medium size, with some exception. For what concerns the organic farmers reached by the interviewees, they are generally young, new farmers with no agricultural background (no inherited farm) (14LocGovF); many are part-time farmers, too (4LocSocM).

Let's say that the elderly are not approaching the association now elderly farmers right now except through a son or grandson who solicits. we don't have a map to say there are many, there are a few who still continue farming even though they don't approach the association. There are some. We know that there are. and I will also tell you that I know of more than one farm that produces conventional and for them for the family does its own ancient orchard.
 (13LocSocM)

As a main concern expressed by farmers, the interviewees having a national viewpoint (1NatEduM and 2NatEdu/GovM) report a struggle with the administrative burden of farm conduction, due mainly to the CAP funding system.

"doctor our job is not to look for funds to fill out forms to deal with administrations our job is to produce and sell agri-food products. And sometimes we are treated, we are expected to become our own manager for all these other things but let someone else be the farmer' Int. 2

Int. 11, a small-scale organic woman farmer based in Trento, confirms this opinion and explains that the burden is particularly heavy for small farms. According to the law, in fact, in order to have subsidies, an organic farm has to declare all that is cultivated on the land, because it has to demonstrate that it follows organic agriculture law of cultural rotation, et cetera. In proportion, it is much more complicated to comply with the norm for someone who has a great variety of vegetables (like in her case, as she produces according to the principles of synergic agriculture) compared to someone who makes monocultural production.

"It is true that the province of Trento reimburses me 90 per cent VAT-free, you pay 10 per cent, the province gives you 90 per cent.

But the problem is not paying it [the organic certification, nda]. The problem is the bureaucratic time it wastes, because in six inspections I have never had one soil, one product inspected. They come, they spend six to eight hours in the field with a map that they receive from Coldiretti or a CAA (Agricultural Assistance Centre, ed.) and I made that map together with Coldiretti in another three, four, five hours. Which I, however, first made at home in other days of work, where trivially there are your soils, the culture of the year before, the crops that will go this year, bearing in mind the three-year rotation, bearing in mind that in each field - even if it is one hectare - you have to divide every 10 metres according to the crop you make. So there's engineering work to be done and so the engineer, poor guy, thinks... even in my opinion what does he care to see in my case that it's all synergistic? So I don't have monoculture potatoes: one hectare; monoculture maize: one hectare... that one says: "eh no, you did it last year, you can't do it anymore. At my place I have a row of onions, a row of cabbage, a row of lettuce, precisely because the synergy between the plants helps them, the environment and the insects. So it's even more difficult for me to be able to subdivide these metres." 11LocFarmF

"When the ICEA operator comes for the inspection, apart from holding your PAP, annual production plan, he wants to see the register. What does it look like? You have all the plots and you put in the metres. What do you do in those plots? You have to go and write I pruned, I ploughed, I sowed, I harvested, whatever, I treated, why? It was preventative, organic does not provide for preventative so you can only treat if you have certainty, etc. Then purchase of materials, whether pesticides or seedlings, how many, where, what, how, you have to write everything down. Obviously attached to this, all the invoices... and so all the invoices for the purchase of the products, as well as uploading them marking what you bought, you have to show the invoice and the invoice must have the plant passport that the nursery gives you." 11LocFarmF

Another concern is the spread of wild animal such as wolves and wildboars (1NatEduM).

The need to have reasonable financial stability in the middle term (5 years) is reported by int 2NatEdu/GovM, and also by 11LocFarmF, but in this case as a negative judgement, because she affirms she puts heart and soul in her farm while the other farmers only care about their revenue. Int 2NatEdu/GovM points out that, in his experience, capability and personal objectives make the key difference among farmers. He describes capability as the ability to grasp economic, political administrative opportunities.

Interviews report an increasing awareness among farmers on present and future challenges (climate change, food safety, market demand) (Int 2NatEdu/GovM) and on the strategic importance of diversification and multifunctionality of agriculture (agritourism, for instance) (1NatEduM).

Access to market is another commonly reported problem. Unless farmers decide to rely on a cooperative, they have to find their own commercialization channels (4LocSocM). Some farm struggle because they are too small for big markets and too big for farmers' markets (1NatEduM). An emerging characteristic in innovator farmers is the loneliness, and a sense of isolation in building the alternative contact with consumers. (3NatSocM)

Within the national agriculture context, which is extremely diversified due to geographical, climatic and historical reasons, Trentino agriculture has quite specific characteristics which distinguish it from the other mountain regions' situations. Previously characterized by family farms, following a mass emigration, in the 60's and 70's there was a small green revolution, and thanks to the chemical inputs and strong technical consultancy, monoculture of apples and vineyards spread in the valleys (7LocEduF). The success of this kind of agriculture, despite the difficult mountain conditions and the land pulverization, is due to the autonomy of the Province, which enables the redistribution of economic resources in the territory, and the cooperative system, that manages the multiplicity of small-scale farmers since the end of the IXX century and now sells the 80% of the production. Nowadays, the majority of farmers in Trentino are part-time farmers who heavily rely on the instructions provided by the San Michele agricultural research centre (also known as FEM) to make some extra money from the small plot of inherited land. This system, albeit successful in terms of productivity and maintenance of the agricultural sector in the mountain area, has as side-effect a reduced responsibility, active engagement, and entrepreneurship of farmers (6LocGovM).

The territory comes down, the province intervenes and I'm covered... and you don't develop that attention, the one that is linked to the discourse of the stone, that attention and that love I say that link with the territory that your grandfather had, your father, is no longer that.... that you wait for the bulletins from San Michele, ah bon, today it's a negotiation and away you go, you're a worker you're no longer a farmer, and that the worker who works with that concept is no longer the master of his...yes he is the master on paper, but he is no longer the true owner of that land...and he no longer even belongs to that territory because he is constantly moving away from that knowledge from that heritage that his parents left him. (13LocSocM)

A raise in awareness is nevertheless reported in the area in the last decade: the easier access to alternative sources of information has led some farmers to rely less on San Michele, and experiment independently with organic and biodynamic agriculture. 7LocEduF notes that this attitude is followed mainly by those who rely on agriculture as a primary or exclusive livelihood source. The transition to organic production in the area has been particularly slow due to the presence of the cooperation; it first started thanks to short food chains and specialized shops, and now it is diffusing thanks to a greater market demand for organic products, which is pushing the cooperative system to invest in that direction, too (6LocGovM).

For organic farmers in Trentino, a key challenge is represented by 'la deriva', the leaking of chemicals from a conventional farm to an organic one (4LocSocM), which is particularly pressing in a territory characterized by high land fragmentation. (6LocGovM)

Access to land is often pointed out as a challenge in the Trentino region (see Section 3

2. Agrobiodiversity

Corresponding interview track section

- *What are the factors (both laws, public interventions and environmental/economic/social conditions) that determine the choice of growing one variety over another?*
- *What are the factors that encourage farmers to maintain local or ancient varieties? What are the most effective public or private instruments for this purpose?*
- *Are there any instruments that facilitate the exchange of seeds between farmers? Factors that hinder it? Has anything changed in recent years?*
- *Can you think of any other law or policy affecting agrobiodiversity?*

From the interviews, it emerges that the choice of cultivating a variety or another depends mainly by the **business model adopted and by agronomic factors**. If it is an organic farm, the choice will have to fall on a very small selection of available varieties which are suitable for organic agriculture. The availability of organic-friendly varieties is a key constraint.

For conventional farmers, the choice depends on the objective, in what market you want to place your production. If the objective is to maximise the production, the choice will fall on a variety that fulfils that characteristics. If the farm is inserted in a contractual chain (with a big pasta producer, for instance), the choice of the variety will have to comply with the characteristics wanted by the pasta producer.

For horticulture, the choice depends both on the agronomic and environmental characteristics and the consumers demand, which is mediated by a supermarket, or a cooperative. If a farm moves on other markets, it can make strategic choices on other varieties.

Biological diversity in wine depends by the specification ('*disciplinare*'), unless, as a marketing choice, a more distinctive, local variety, is selected, which can be highlighted in the label and with which it is possible to differentiate the product. In practice, though, farmers have a sort of routine so that they do not change their variety often. (1NatEduM) The distinctive variety represents a better marketing factor for the organic farmer, because it translates into a product that looks and tastes different. In fact, if the organic product is identical to the conventional one, there is less motivation for the consumer to buy it. (1NatEduM).

The importance of the **market** is confirmed also by 12LocGovM for the case of apples in Trentino. In the past, the demand of apple, for instance, was for only one variety, whereas now the cooperatives are pushing for some diversification: they are testing organic production and distributing new varieties to farmers, while guaranteeing the same price, so farmers can change production without the burden of the economic risk.

In addition to market choices, public support and a **socio-cultural, personal research** of the farmer are complementing factors, according to **Int 2NatEdu/GovM**. The role of CAP and personal **motivations** are also strongly stressed by **3NatSocM**. As per the socio-cultural research, or motivation, **int 2NatEdu/GovM** explains that there can be a certain pleasure for the farmer in choosing certain old, local varieties, but it has to be a choice that builds on the economic sustainability.

"There are two main anchors. The market prospects on the one hand and the possibility of public support on the other, and a third anchorage is a socio-cultural research that can actually be part of the baggage, especially of those who explicitly focus on biodiversity as a business model, i.e. the pleasure of fishing out an old variety and valorising it, but there is also a pleasure in itself, let's say, which, however, is obviously grafted onto the economic sustainability that is linked to the two elements I mentioned earlier, market opportunities and public support, which in turn are linked to each other, because public support can come directly to the farmer for a cultural choice, or it can come indirectly to the farmer. " (int 2NatEdu/GovM).

"So the market determines this, I have also seen it in fair trade for many years we have understood in short that these are the mechanisms... from bananas to coffee. Who is in charge is someone else who decides and who then manages a marketing communication blah blah blah all the tools to induce you to take the golden instead of trying the rest and they have the tools to do it, the potential to do it the resources to do it. If we had the resources to do the opposite we would have things to say, in the belief that we would definitely have good things to say good beliefs to bring." (13LocSocM)

3NatSocM instead stresses on the **identity** factor: the choice for the farmers is connected to a strong belief and ideal that allows farmers to face alone all the challenges needed to build a micro-economic system that sustains them.

"in my opinion it has to be someone who, I say this from experience with our farmer members, people who see a little bit far, and say why in this area that used to produce these things here you can't go back to producing.... There can also be the commercial aspect." (int13)

Economic sustainability, public support and cultural research are strongly intertwined. Some public schemes, such as the green payment or the agri-climate-environmental payments of the Rural development Program, influence the choice of some varieties; for instance, the promotion of short food chains favours the adoption of agrobiodiversity, because the local products demand is generally oriented towards more diverse and local varieties. (**int 2NatEdu/GovM**). In the Trentino case, with regard to the local corn Storo, the passion of some farmers that strongly believed in the project and the financial support of the Rural development program managed to obtain a good success. But beside the projects, the capacity to communicate the product to the market is essential: 'to make the market understand' (**12LocGovM**)

On a different note, small farmer Stefania, **11LocFarmF**, says that public scheme is useless, because she feels the 2-300 euros she gets as compensation for the organic certification from the province is useless, especially if compared with those vine growers who get 2-3000 euros. She keeps producing organically only because she believes in it.

The European Union has made efforts to reduce the environmental footprint of agriculture, but critical points are found between the intent and the realization. The dialectic between the agricultural lobby and the environmentalist one has, as a result, the risk that payments end in supporting already existing practices, without pushing for a real transformation. In other words, there is a high risk of green washing. Beside the CAP policies, though, external factors influence the overall direction of agriculture: the external factor is that the rest of the world is going in another direction, still reaching for low price mass production and land grabbing by big emerging global players. (int 2NatEdu/GovM) A similar reasoning is made by 3NatSocM, who stresses on '**the system**' and claims that the extremely verticalized agricultural sector is connected to the other economic sectors: logistics, transport, etc. 1NatEduM points out that specific public schemes have little impact if the overall productive system still requires homogeneity: now more diversity in horticulture can be found, on the contrary, in the cereals sector, there has been a structural simplification of consumption and production models which is hardly reversed. (1NatEduM)

The **genetic research** on old varieties and hybridization is crucial for agrobiodiversity, and normative standards play a significant role in shaping the research and practices' direction (int 2NatEdu/GovM). In Italy, the research and development of agricultural plant genetic diversity lives mainly through the network Rete Semi Rurali. One of the founders, genetist Dr Ceccarelli, introduced the concept of 'population', a heterogeneous mix with different characteristics that better resist to climatic events. [This concept has been now introduced into the EU organic regulation 848/2018 – nda] Ceccarelli promotes a radically different conception of variety selection, of diversity as resilience, whereas central to the conventional agriculture is the concept of the single variety solving all problems. The role of Rete Semi Rurali is stressed also by int 2NatEdu/GovM2 and 3NatSocM, who both point out the fragmentation of those experience of seed exchange (2NatEdu/GovM) or the loneliness of their work (3NatSocM).

One of the interviewees (13LocSocM) is a founder of an association of peasants' seeds exchange in Trento. He explains that the seed exchange system works as a gift economy system: they cannot sell seeds so they exchange and donate them. Every year they make a gathering called '*chiamata a raccolta*', where people can go and exchange seeds. Those who take the seeds make a commitment to plant the seeds and reproduce them. Within this system, the territoriality of the seed is lost. In his opinion though, this does not affect the biodiversity, because the local seed planted in a new environment will develop new characteristics; this is how nature works: a bird or the wind will bring the seed elsewhere. [The Italian law on agrobiodiversity, on the contrary, aims at maintaining the local seeds in the original territory – nda]

Bear in mind that we often find anecdotes when we find new seeds that come from dowries of married girls who married bringing a dowry and therefore moved maybe to the neighbouring village but maybe also to the valley or even further away. But also of the emigrants We have a couple of varieties that we have rediscovered in the sense that they

had told us that they were there but had disappeared for years and have returned to the Lower Valsugana in the Grigno Strigno area etc. and have returned from Stivov, Bosnia where there is a Trentino community that was moved under the Austro-Hungarian Empire in the border area so border populations are always a bit to deal with, they are dangerous, in quotes, the community had been moved to Stivov, Banja Luka which in the current Serbian Republic of Bosnia on the Serbian side of the. After the disaster they made after the war... they took their seeds and so on. A few families with the war or immediately after the war went back to their countries of origin and brought back that bean, that radicchio, which were the ones that were no longer there. Slowly there are a few old men who keep it when the

old man.... In fact one of our urgencies more than finding ancient fruit is to find ancient seeds because seeds have a shorter life span. The fruit i.e. there's the tree if someone doesn't go with the chainsaw it stays, it goes wild, but you can recover it. The seed has a short life, but above all it has a short life for the farmer, the old man who is carrying it out. it happened to us again to arrive late, our grandson had Trentino lentils, damn and we arrived late and he told us I didn't know...grandfather or uncle had a big box of seeds, we cleaned it....of course it's not their fault, the fault is the fault of a context, of a community that has not known how to protect this thing. (13LocSocM)

The conservation of seeds and their traditional knowledge attached has not only a sentimental, cultural value, but a practical value for organic agriculture, which needs resistant and adaptable seeds. Climate change is another pressing reason.

Quando abbiamo un patrimonio di sementi locali che si adattano perfettamente al nostro territorio perché lo conoscono perché hanno sviluppato una loro memoria che dopo vai a scoprire che tipo di memoria è. (13LocSocM)

The EU and Italian legal frameworks allow for the recognition of traditional varieties and, thanks to the register of traditional varieties connected with seeds backs, farmers can access seeds, use and regenerate them and become registered breeders ('costitutori'). On the other hand, there is the UPOV system for certification of varieties which hinders the free exchange of seeds and protects improved, standardized varieties, but it also guarantees the safety of genetic materials and prevents the spread of plant diseases (1NatEduM).

The Seed exchange association (13LocSocM) admits to be quite sceptical and suspicious about the regulatory framework, and sees the **human network** and as the only true factor promoting the exchange of seeds.

And so we went to the biodiversity table which promoted Bigaran who was the head of the organic service before retiring until last year a year and a half ago, an interesting person who has come to appreciate us. [...] but we went there for a while because we don't shy away from biodiversity days after the national law on agricultural biodiversity was made, which also provides for a local day on 22 May each year, etc., financed by the Ministry blabla. A lot of talk a lot of things and little sauce but we went anyway. not because we are better but because we believe in it. (13LocSocM)

While that word of mouth is indispensable, that direct relationship, those contacts that have been created over the years and that in turn branch out and ramify more and more. And these help. What doesn't help? It certainly doesn't help the attitude of the Ministry of Agriculture or the European Community with regard to these things here, we are always there with the sword of Damocles of being a bit on the edge of legality, if we consider legality what... I consider something else, but anyway... it intervenes on being in accordance with the rules, laws, etc. because the signals are very bad both because we are going very quickly and with little serious discussion again on the subject of GMOs (13LocSocM)

Nevertheless, 11LocFarmF points out the legislative knot that is created between the free exchange of seed and the **administrative requirements** for organic producers. As organic products need to be tracked throughout all production chain, the seeds used for the cultivation need to be certified and the sale documented, whereas those exchanged lack all formality required. But she also affirms that she manages to

access traditional varieties from another entity, a constitutor of the Pro Specie Rara varieties, [which are plant propagating material from a registered breeder in Switzerland - nda].

And trivially from organic farming I couldn't grow old seeds, because since I didn't buy them I don't have an invoice.

Because you have to have certification. [...] And because after the first check I had written on this register the Pimpinella seeds, this guy, this controller told me 'listen, I give you a piece of advice, since you can't do it: do it and don't write it down. Anyway if it's 10 bean seeds, who's going to go and see them. But you realise you're going to disincentivise a whole speech. It's a shame. (11LocFarmF)

The Province of Trento promoted, through the **Rural Development Program**, the protection and regeneration of local animal varieties, but the interviewed officer admitted that the Province did not pay, so far, much attention to the plant varieties (12LocGovM).

so there was this exchange because traditionally everyone used to be a farmer, farming was also very much subsistence farming, not so much market farming, so it was natural to have this thing of exchanging seeds, no. Now this is actually more the aim of the farmers' associations that conserve varieties and so on, and I think they are in touch with each other a lot because they are part of associations. But on this as a public body we have never honestly intervened. (12LocGovM)

one thing I didn't mention before is related to endangered animal breeds, which are instead taking up quite a bit of space in Trentino, also thanks to support. And which therefore also lend themselves very much to this reasoning in the sense that they are traditional varieties that could also give rise to more typical and more characterised products. [...] yes above all, we have focused on supporting endangered breeds in cattle, the rendena, the alpine grey. Then there is also the bruna, but the traditional one [...] Then we have some breeds of goat, the Mochena goat, the Tingola sheep of the Val di Fiemme, these are the breeds apart, then two horses, although the Norico and the fast heavy draught horse.

Which have been recovered especially the farms that also do agritourism (12LocGovM)

The role of **consultants** may be crucial for the promotion of agrobiodiversity (Int 2NatEdu/GovM). 13LocSocM to this regard complains about the lack of attention on this matter by the San Michele Institute. Whereas the Sud Tirol agronomic institute (Lainburg) pays great care on the research on old varieties of cereals, San Michele only focuses on improving small fruit varieties.

to San Michele, which sells the patent on the resistant blueberry blabla etc. for I don't know how many million euros. but don't you have anything else to do? Why not do some serious thinking about ancient varieties, for example. like Lainburg does for example, which is the South Tyrolean equivalent of San Michele, it has a collection of ancient varieties there is a cereal bank that is incredible, of South Tyrolean cereals (13LocSocM)

Another key theme is the **connection between wild biodiversity and agrobiodiversity**. Despite conceptually distinct, they are in an osmotic relationship. (2NatEdu/GovM) For instance, promotion of terracing was cited as an example for enabling biodiversity production. (13LocSocM)

for example, last summer we did something with the network of reserves that is Val di Cembra, the Avisio, then a little spot, a little 'Slow Food rather than with realities that call us, even local authorities maybe a few years ago we participated in a conference, mini-conference on the terraces you say, well, what's that got to do? It has something to do with it because if you broaden the discourse, if you frame it, if you contextualise it, it also leads you to what crops

were on those terraces and what crops it makes sense to put, to put back in those terraces, so we found ourselves talking with landscape architects and speaking the same language, or I would say you start from the beautiful and get to the good, we start from the good and get to the beautiful (13LocSocM)

According to 3NatSocM, it is necessary to change the broader conception of the environment and how it is produced. Agriculture must be conceived as producer of environment and landscape. The change toward agroecology is a chance of thinking on environment and economy.

3. Bio-cultural diversity

Corresponding interview track section

- What are the main factors encouraging organic farming and extensive livestock farming?
- To what extent the production and commercialization of traditional products is promoted? What are the main factors hindering or encouraging that?
- To what extent the consumption of local products is promoted? What are the main factors hindering or encouraging that?
- At the public policy level, is there sensitivity to healthy and sustainable diets? How do such policies influence the type of agriculture practised? And how do they influence food processing?
- Can you think of any other law or policy affecting the diversity of agricultural practices and food cultures?

Similarly to the conservation of old varieties, one of the main factors for practising organic farming, reported by several interviewees, is the **personal belief, motivation and the example of other experiences**. (5LocFarm/SocM, 14LocGovF, 8LocFarm/SocF). This latter in particular is inspired, according to 2NatEdu/GovM, to some spread positive rhetorics (the possibility of farmers to live a better life, without being in contact with chemicals potentially armful for their families) and the circulation of ideas in a culturally active environment. This is especially true for young farmers, who start the activity directly with organic or biodynamic agriculture, not even considering the conventional model. This choice is supported by a will of greater independence.

As far as I have been able to get to know the operators who are involved in organic farming, I believe that it is mainly a matter of belief, in the sense that it is a fundamental choice of field and I do not see it as linked to the economic factor, but rather to a question of basic reasoning, also because the transition takes three years, i.e. it is not something so easy to do overnight, and I see that those who make this type of choice are people who have a certain type of culture. As far as I have been able to get to know the operators who are involved in organic farming, I believe that it is mainly a matter of belief, in the sense that it is a fundamental choice of field and I do not see it as linked to the economic factor, but rather to a question of basic reasoning, also because the transition takes three years, i.e. it is not something so

easy to do overnight, and I see that those who make this type of choice are people who have a certain type of culture.
 (14LocGovF)

Secondo te quali sono i principali fattori che incoraggiano gli agricoltori a fare agricoltura biologica?

There's none now, because the mere fact that I get certified is not enough, it's not an incentive.

And why do people do it?

They do it because, like me, they believe in it. (11LocFarmF)

M: the motivation for doing biodynamic?

G: partly related to an inner need, you also have to be curious. For me it was curiosity and then this meeting with Nicolas Jolie. Then it was a phase in which you were coming from a tired period in which you hear so many accounts of the agricultural method in difficulty because you are on the fringes of the production sector. In this meeting, however, I heard from him: make some wine, you don't need to make 10,000 bottles, so you don't have to worry if you can't sell, but start to know your work in depth,' then there was a poetic vision that I felt I needed, but it is a personal thing that everyone has but it is not so comparable, it is not a unit of measurement that applies to everyone. (5LocFarm/SocM)

and I would say the example, that is, for example, of many farmers who have had positive experiences that organic farming has been not only economically but also from the point of view of managing their lives in the fields there is the famous story that goes around many research groups because it has been reported by many farmers. I used to come home at night before hugging my daughter I had to take the longest and most detailed showers to get it all off my skin
 (2NatEdu/GovM)

many young farmers who especially in suburban areas then in contact with receptive markets and start this kind of activity in an organic conversion and start directly with organic don't really think about not starting with organic and biodynamic with integrated with however sustainable forms of agriculture as if it was already in their expectation so if there is a cultural humus that is now past. (2NatEdu/GovM)

The generations of now, on the other hand, some of the young farmers I have spoken to, want to bring back, as it were, a balance, at least to put more weight on the axis of power in their own hands. This is also an interesting phenomenon that we are observing. So, the decision-making choices of their field or their company are taken first by them and then afterwards they are discussed with the province. The province in this case, also reluctantly, because it had a different development model, is giving way a little and therefore goes behind, chases and supports, and has widened the terms of contribution a little. Since before the contribution was binding or you do this or we don't give it to you, now there is the contribution and there are choices, you can make choices, so there is more opportunity for the generations now, those young people to be farmers and to be able to express their decision-making choices to a greater extent. (7LocEduF)

In Trentino, the striking majority of conventional farms adopt a production protocols 'Disciplinare per la lotta integrata' developed by the Province, which updates them regularly. (6LocGovM) This production method is followed mainly by old or very old farmers, while younger ones tend to have more energy to invest and

convert to organic. Nowadays, a new organic farmer is emerging: whereas 15 years ago an organic farm was a very diversified one, now young farmers switch to organic farming but remain in monocultural production of apples and wine (6LocGovM)

The farms that are currently doing integrated are the farms that are a bit old in age that can't bend over and do manual weeding and only grow potatoes, cabbages, simple crops. It's people who are also over 80 years old who run the farm, don't get down on their knees, or do the conversion of their farm from integrated organic. The slightly younger farm believes in organic and also makes investments, takes the farm forward with the interest of organic farming there is really an interest on the part of the young. (8LocFarm/SocF)

If I was making wine, I was making conventional, now I am making organic, but I only make wine. My farm is 2-3 hectares, all wine, I continue to make my grapes, I make it as organic. This is one type of transformation, the most recent. Previously, those who did organic farming diversified, because they needed to spread the risk over several crops, because you have fewer tools. The organic farmer of 15 years ago diversified, he tried to achieve the closed cycle within the farm, so he produced a bit of everything and found niche markets to place his productions. That's what was done before, now we have a new organic farmer, but he does monoculture, he does either wine or apples, few on animal husbandry, because there we have a lot of grassland, but few certifications on animals and animal products.

(6LocGovM)

Technical consultancy and support were already highlighted as an encouraging factor for agrobiodiversity. In Trentino, such support comes out it was provided by a man in particular: Enzo Mescalchin, working in the San Michele /FEM centre. His expertise and research, it was reported, managed to concretely demonstrate that doing organic agriculture in the mountain is possible. (5LocFarm/SocM) He confirms the importance of his role, also because the technical consultancies were cost-free (10LocGovM). Technical public consultancies can have, as a side effect, the consequence of discouraging diversity, as if a certain practice is suggested and a farmer does not follow it, then S/he may risk not getting the insurance if something goes wrong (7LocEduF)

Afterwards, of course, this power is continually negotiated, when you enter into relations with the province and the experts, for that afterwards they suggest what to do, you can also not do it eh. But afterwards, if perhaps a disaster happens, you are not covered by insurance. If you've made a wrong choice of your own afterwards, maybe you don't receive the contribution for damages, that maybe I don't know about animals or hail. If you don't put up nets, it's obvious that afterwards they'll say, 'well, excuse me, I gave you the tool, you chose not to put them up, you're going to stick,' in the sense that it's happened. Look, I know many farmers who, unfortunately, have not put up nets for various reasons, and maybe when the hailstorm comes the whole crop goes bad, you don't sell. Or animals come, roe deer eat everything, and if you haven't netted against roe deer there's no story. So yes, now there is a for every decision there is a negotiation of power more than before, before there was adjustment and power in the hands, we have the big political decision-making bodies and then experts. (7LocEduF)

As organic farms grew, thanks to the help of Mescalchin, one of the key links to explain the success, not definitive, but his commitment with applied research on the method by giving overall general answers, saying what could be done and what could not be done by solving impossible situations. And this has made it possible thanks to their work and the increase of organic companies and the entry of important players. (5LocFarm/SocM)

well I have the presumption to say also thanks to the fact that we were there giving a certain security, that you can lean on a technician who knows things and can accompany you.

I have seen that the first years are very delicate for someone who goes organic and needs to have someone because and there are certain moments in the season that you are a bit in crisis perhaps. The presence of a group of technicians on the ground in the early days free of charge, by the way, had certainly been very important. (10LocGovM)

Despite the usefulness of the provision of such public service, 1NatEduM reported that, in the past, all Regions had their agriculture development agencies, which were progressively dismantled due to spending review and the opposition by professional organizations which did not wish to share their political power on the territory.

The lack of professional support is felt as conversely disorienting and leads to that sense of loneliness expressed by 3NatSocM. 11LocFarmF talks about the lack of support offered by the agricultural assistance centres (CAA), which is a service provided by the professional organizations and that operate as the interface between the farmer and the public administration for the fulfilment of all normative requirements. In the experience of 11LocFarmF, they are not able to guide the farmer to the funding opportunities, all they do is to direct you to the website. This experience might in fact recall the importance of personal capability highlighted before, especially if a strong public technical support is not provided.

I used to be in the CIA and I escaped because they made a series of mistakes that caused me problems. I found them incompetent. I went to Coldiretti believing that it was a little bit better, but we are not OK. In the sense that you ask something, 'but I don't know, my colleague isn't there' he's never there, he's always on holiday, he's sick. I don't feel assisted. I was talking to this Serena from the Province and she said to me 'but why don't you ask too, don't go... they all do it, wake up!' and I said 'I can't go to the office and say: this is an idea, what do I do? No. They give you an address, "download the notices, see if you meet the requirements, because some are for people under 40 or over 40, under 40 plus graduates, over 40 but with generational turnover." I'm sorry, this is my situation: I have the farm file, you have all my papers, you can look at me if... there is no office, even at the agriculture service: you call and they send you to the site and you make do. So there is, in my opinion, little competence. (11LocFarmF)

Loneliness and excessive administrative burden are cited among the frustration of organic farmers. There was reporting of some farmers, previously certified as organic, who exited from the system due to excessive administrative burden. They were able to make this move only because they had already built a trust net with consumers (6LocGovM); they were able to do so thanks to the construction of their own commercialization network and consumer trust.

"Esistono anche da noi agricoltori biologici che sono usciti dalla certificazioni perchè era troppo complessa dal punto di vista burocratico con gli adempimenti. Continua a fare biologico, non si certificano perchè il loro mercato ormai è stato definito, la gente li conosce, si fida di loro, quindi dicono "perchè devo andare da un altro a farmi certificare, il consumatore si fida di me, mi conosce, se vuole venirmi a trovare a casa, lo fa, gli faccio il mercato locale" però questo lo puoi fare se il consumatore ti conosci, se hai un rapporto diretto. Ma se tu, è chiaro che il mercato estero o anche solo di un'altra città non può basarsi su queste cose e quindi..." (6LocGovM)

An instrument that seems to represent a valuable option in contrasting isolation and excessive burden is the biodistrict. The biodistrict is reported as a highly relevant instrument for organic production, for it promotes social and economic integration on the territory. It was recognised by the legislative decree 228/2001 and more recently by the Italian organic law [nda], but some implementing instruments are still lacking. This instrument, in addition, has the power to complement and overcome the limits of the organic regulation, namely the lack of integration of the organic production with a broader attention on landscape, sociality, biodiversity, social agriculture. **Biodistricts could promote a broader territorial participation.** (6LocGovM) As such, the participant of the biodistrict Val di Gresta in Trentino feels that the initiative found the Province support, especially with regard to the promotion of the quality brand (Marchio qualità Trentina).

6LocGovM, talking about the the new organic regulation 848/2018, affirmed that its main innovation is the group certification for small producers, and that it might have the potential to foster collective participation.

Right now there is a law underway but it has been blocked for a long time in the Senate and these organic districts were included in an article of the orientation law, Article 13 Law 228, a law for the orientation of the agricultural sector still made in 2001, but recently with a financial act an amendment was made and biodistricts were included, they were enunciated, it was identified what it is. But then the law regulating how they are made, how they are managed, how they are helped and a series of other important aspects was not given, and it is still at a standstill. (6LocGovM)

The province relies on this discourse of organic farming, of canteens, of the product remaining here in Trentino, in short, for the discourse of the quality. It was precisely the province that pushed for the quality mark, and I'm very pleased about this because for traceability, the supply chain also has to be short, and the consumer also has to get used to eating local before consuming product that comes from outside Italy, even outside Europe. (8LocFarm/SocF)

The broader **territorial context** is deemed particularly relevant for enabling organic and extensive agriculture, as the environmental and human factors have to be integrated: **labour exchange**, for instance is named to be in this sense a vital tool. That was a customary practice among family farms, which was banned for certain years and only recently has been reammitted by the law, albeit accompanied by much paperwork (13LocSocM)

In my opinion, the perspective must always be that of the territory, and therefore it means networking with others who have land close to mine and who grow crops similar to mine, where we can exchange not only seeds, not only equipment, but above all advice, help, and working hours. In my opinion this is fundamental, they had taken it away for years from the exchange of work, which they have now fortunately reintroduced a little bureaucratically. Let's end up going to you, without having to sign twenty thousand papers etc. people then use common sense and continued to do it in some way a little more careful not to get into trouble, however and now in some way you can do it again are however the fact that we had to pass this shows that those who made that rule do not cultivate the land certainly do not know what is a farm, do not know what it means to produce work and bend the back. (13LocSocM)

Another territorial element, the **landscape** is cited as influencing the way agriculture is conducted. In Val di Gresta, the conservation of the traditional landscape favoured the revitalization of organic agriculture, because the beauty of the areas claims for an agriculture that is in armony with it. (8LocFarm/SocF)

At present, out of the 100 holdings that the Val di Gresta fruit consortium has, 54 holdings now do organic farming with 80 per cent of the produce delivered to the cooperative. To choose organic, I would say that in this habitat it is almost natural, because we have a landscape that is beautiful, these small plots supported by these dry stone walls, this forest that surrounds the entire valley; in other words, not to go organic here is really going against nature.

(8LocFarm/SocF)

The extension of organic agriculture in Trentino is connected to the landscape also for another reason. The vast pasture areas, abounding in the high lands in Trentino, are cultivated organically. Pasture and cattle breeding are connected, but whereas the pastures are organic, the zootechnic sector remains in the conventional system. **(12LocGovM)** This is due for higher financial risks of the activity, as well as the constraint in the logistics and in the lack of connection with the rest of the food value chain. This aspect is also reported by **1NatEduM**. The primary production alone is not viable if it is not connected with a system that can transport, stock, transform and commercialize the product as organic, and adequately remunerate the farmer. The presence of cooperatives in the sector may slower such logistical development, because if the cooperative is not equipped to stock and transform the product as organic, it will pay the primary product at the same price as the conventional one. On the contrary, if the cooperative makes space for organic production, tensions may arise between organic and conventional producers that are parts of it. **(1NatEduM and 12LocGovM)**

Today, for example, in the field of animal husbandry we have some farms that organically cultivate meadows, and there are quite a few of them, but grazing meadows mowing meadows so they don't use chemical fertilisers. And this is already an important step, but they are not able to make the step of transforming also the stable into an organic farm and then have organic milk and organic meat, they have limited themselves to cultivation because it was easier because they were already doing it without using chemical fertilisers. However, I see that they have difficulty in making this transition because they are probably afraid of the costs of milk remuneration, which is not guaranteed by dairies, because even there, unless one sets up his own business and does his own processing, it is not always possible for a dairy to make the most of organic milk rather than normal milk, unless it has an adequate production volume. There are some of these problems, so there is still some difficulty in making this transition, in short, to close the organic supply chain with regard to all the products of the livestock farm, and it is probably still hindered by the cooperation, which is a positive factor in Trentino in Italy, but it is a bit more rigid in making new choices. (12LocGovM)

Since the economic sustainability is a precondition, gaining independence in the transformation and commercialization of the product is a crucial step. **Alternative markets** such as direct markets, solidarity purchase groups, online sale, are in this sense essential, because even if the supermarkets open to the organic products, they do not guarantee fair prices.

Quality labels such as PDI, PGI and are named as an important tool by national level interviewees (for instance, **1NatEduM**) but not much by the Trentino experts, because in that areas the quality schemes have been adopted by the cooperation system **(5LocFarm/SocM)**, and are associated with the logics of quantity rather than quality. **(11LocFarmF)**

Among the other laws that help maintaining biocultural diversity there are those who recognize and protect **customary collective land rights**. Italian law n 169/2017 protects those rights in light of the historical, cultural as well as environmental significance.

this law of 2017 imposes on us more than a reinterpretation, this recognising but it is a matter of interpreting rules that were made without even realising that there are these assets these rights, and a deepening of history we know very well that comes from above, it is simply a rediscovery of the significance of the areas of protection that this law did as the Galasso law did a rediscovery of the significance of these areas of protection and to protect this right is to also protect interests that go beyond the rightful owners in the sense that in protecting these rights you maintain the destination of use for those who have that interest of individuals and the general interest of protecting the environment, that's what you insist and that's the thing to do, stop talking, because there is a problem of the environment in the sense that they are regularly submerged are blocked, mistreated with a few little hands raised 50% +1 but the reality that the majority that comes from the democratic system is often wrong, if we stop at 50 % already that should make us think that a small majority can crush inalienable rights and this is a corruption because it is apparently legitimate because the majority cannot go against rights that are inalienable against nature which is presupposed for society without nature we cannot exercise . . so what the 117/2017 teaches us is that without knowledge of history or history there is not even the protection of identity this is a concept that according to is this me the true interest of the generality which is beyond the individual.[14LocGovF]

The interpretation of hygiene standards and nutritional value labelling (the discussed Front-of-pack claim) are cited as possible constraining factors on the diffusion of traditional products. (2NatEdu/GovM)

4. Organizational diversity

Corresponding interview track section

- *What is the situation regarding access to land in the national/local context? What are the main obstacles to access? Are there instruments that facilitate access to land?*
- *What is the situation of young farmers and women farmers? Are there policies encouraging diversity in farmers' age and gender? Are they effective?*
- *What role do producers' organizations play at the national level and in the local context? What is the situation of a farmer who does not want to be part of a producers' organization?*
- *To what extent do public policies support the integration of agri-food chains? What are the consequences of the characteristics of processed products? And on agricultural practices?*
- *What are the main drivers for farmers to sell their products on local markets or through direct sales? How do they influence the type of farming practised? And the characteristics of processed products?*
- *Can you tell me about public procurement for the supply of products to public canteens? What are the factors that most encourage producers to participate? How do they influence the type of agriculture practiced? And the characteristics of the processed products?*
- *Can you think of any other law or policy affecting organizational diversity?*

From the interviews, it emerged that, in Trentino, access to land is a major issue, rooted in a combination of factors. A first characteristic is the fragmentation of land in the valley. (7LocEduF, 10LocGovM) In that area, high subsidies ensure land owners an income with minimum or no effort, so even a tiny plot of land can bring some revenue. In addition, the strong role of cooperatives, guiding all steps of those who are part-time

farmers, generates a high land price or no interest in selling at all. The reluctance to rent land is also connected to an old fear of inverse possession ('usucapione agraria'). (11LocFarmF). As an attempt to answer to such land demand, a Land Bank was established in Trentino but it has been ineffective, due to the excessive fragmentation and a fundamental interest in keeping the land for balancing the density of animals per hectare in the livestock farm. In the 80-85% of those cases, land is given by means of a verbal agreement between the owner and the livestock farmer who needs grass (or land) for the cattle.

the disappointment of the Land Bank proposal, which I understand was a gigantic flop at least here in Trentino. And also because it was badly managed, the province should have taken steps earlier, for example, to reorganise the land in certain areas, I am thinking of the Terragnolo Valley, where there is a whole fractioning etc., and so who is there to say, if not an external guarantor, give your 300, 600, 1,000 metre plots to this company, to this young entrepreneur etc. I, the province, guarantee that it remains yours, you are protected for the rent for everything, which does not become a useless property. I province guarantee you that it remains yours, you are protected for the rent for everything, that it does not become a usucaption, all this stuff here.

(13LocSocM)

In Trentino not much has been done even the mafia [bank... interesting slip of the tongue, nda] of the Earth has been set up but it's not taking off. Also because, objectively speaking, there is a bit of competition for land, there are not many abandoned plots of land, and the meadows are also much sought after by livestock farms because they are increasingly important because, as a policy in favour of livestock farms, there is an increasing demand for a balanced ratio between the number of animals reared and the cultivated area. So if a farm wants to maintain the same number of animals, it inevitably has to increase its area or try to maintain it. And so on. [...]

So the few farms have become bigger than the others 4 5 6 7 times bigger. However, what happens on the land that has been acquired by these farms is not bought or leased it is almost always verbal agreements 80-85% of the cultivated meadows are on the basis of a verbal agreement the so-called verbal commodeate.

(12LocGovM)

Another situation affects the land in the high mountains. There, the 90% of the huts (*malghe*) are public, or better, are under collective customary rights (civic uses). What happens in that context is that farmers, often big farmers coming also from other regions, have the financial resources to gain the huts through public auctions. But instead of using them, they keep the cows in the stable and receive EAGF contributions, to the detriment of those who would like to use those huts for grazing. This is due to the functioning of the post-2005 CAP reform, which decoupled the subsidy from the production and attached it to tradable titles. Many disputes are underway because attempts are being made to counter the phenomenon. In the attempt to contrast such phenomenon, the Province has made a specification for mountain huts to facilitate proper management. (9LocEduM, 13LocSocM)

it's the market that says I need a lot and I need a lot that costs as little as possible and so the management of the shepherd's huts in Trentino over the last few years says a lot about this here in the sense that the shepherd's huts have been put out to tender for....and often the shepherds are loaded with heifers instead of the dairy cows that you keep in the cowshed. Why? Because the market asks you to produce a lot of milk, so I take the subsidy money from there and I don't give it up. And here, however, I keep the cows in the cowshed because they produce more and I have more

*control over them, in the malga it's more tiring, they go outside, I have to call them, milk them, reopen the next day...
(13LocSocM)*

As far as access to land is concerned, we have had, but you may also have had this impression from reading the newspapers, we have had and still have some problems with pastures, because almost 90 per cent, or rather more than 90 per cent, of the pastures are publicly owned, i.e. they are granted by the municipalities, by the ASUC. However, in recent years, and I am talking about 15-20 years, there has been fierce competition for these areas, above all for the purpose of accessing the contributions under the first pillar of the EAGF, and therefore, since these are large areas that also require little investment and little cost to be used, many farms are speculating a little on public contributions, perhaps doing everything in line with the rules, but instead of worrying about producing quality meat products they have organised themselves in order to exploit the subsidies in essence, and therefore many times they manage to grab these pastures in public auctions and put local and livestock farms in a marginal situation, those which instead need the pasture to feed their animals and therefore to make an income and so on. [...]

. For example, the Province has invested a great deal in the 'malghe' (shepherd's huts) in order to guide the owner administrations, the municipalities and the ASUC towards proper management. That gives guidelines on how they should be managed. There are guidelines for fostering pastures on how to do the auctions. But then we have let's say a few cases. There aren't many, but there are about 20 out of 400 pastures, 20 to 25, which then cause problems because in the end they put local farmers out of business, sometimes because they traditionally always brought their livestock to the same pasture, and so they were put out of business. But by companies that are sometimes from Trentino, sometimes even from outside the province, whose objective is to maximise contributions, not to make a quality product, etc., etc., so we call them speculators [13LocSocM].

So basically since 2005 the farm can grow whatever it wants, it has a direct payment value per hectare which however comes to it from the historical value. If, for example, it was a company that made tobacco, it could be that it had an aid level of more or less EUR 5,000 per hectare. Since 2005, instead of making tobacco, it could also cultivate grassland and still receive EUR 5,000 per hectare: the so-called titles were born. For each hectare, the title was practically assigned a value equal to the historical average of that hectare. But this then generated distortions in the sense that a market in securities developed. So there were companies that bought on the market because the companies then divested themselves of their activities opp

This phenomenon is deeply connected to the management, or mismanagement, of customary land rights by the municipality, or the ASUC, the association representing the collective rights holders. The economic opportunity, deriving from this described demand for land by large cattle breeders combined with the CAP payment system, leads municipalities and sometimes ASUCs to maximise the profits from giving the lands to the higher bidder. This goes at the expense not only of those locals who were traditionally renting cheap grasslands, and cannot compete anymore with the strong economic offers of those big players, but also at the expense of the collective land rights owners, who need to pay for accessing a land that the law recognises as theirs. (15LocLawM)

Example, when this land is put out to tender and I, who live in that territory and am part of that community of subjects who have the property and due to confusion, misunderstandings, economic force, competition that pushes to use that territory in such a way as to make the most profit, I find that I do not have the money to pay for an asset that is part of my property, I am asked for a fee to use what is my property. If we go and look at the jurisprudence here there are clear indications that a fee cannot be demanded. The powers of the pushes make it so that there is and you create a corruption of these laws, you have a corruption which is the most correct term because this is what it is about, if a law does the opposite of what is the state of things, the collective land tenure, collective land tenure is another way to call these the collective domains, and then the fact of corrupting this institution and the rules that support it creates the reason for this lawsuit, such as putting grazing out to tender excluding the owners.

This is an example I wanted to give because I have often gone against public administrations that where there are committees where it is the direct owners who do their own administration, they have more firmness in holding firm and respecting. Public administrations that respond to interests, because it is the role of public administrations to manage interests, when PAs arrogate to themselves the right by exceeding, misrepresenting and corrupting the laws they confuse rights and interests, sometimes mere interests .. that override and zero in on the right.

[15LocLawM]

A third situation is that of idle land and the '**premio per lo sfalcio**', which is a rural development plan funding scheme. Whereas, in the past, every family had some cows, nowadays there is only one or two stables left for each village, and such stables have hundreds of cows. The transformation of the livestock farming structure did not correspond to a change in the land tenure structure. So now, the property of land is still fragmented, but it is used by a single livestock farmer thanks to an oral agreement, according to which either the grass is given for free by the owner who would not use it anyway, or is payed by means of the the '**premio per lo sfalcio**'. (11LocFarmF, 13) [This measure is introduced by art 23 of the Legge provinciale 28 marzo 2003, n. 4 Sostegno dell'economia agricola, disciplina dell'agricoltura biologica e della contrassegnazione di prodotti geneticamente non modificati].

Then maybe in this country of a thousand inhabitants there is only one or two stables left, so these two stables maybe now have 100 animals each. And they cultivate all the meadows. Only that they own 2 or 3 per cent of the land, while the rest they cultivate on the basis of these verbal agreements. Then we come to an agreement, or let me do it for free, and so there the access to the land was like that and even today it is largely like that except for the alpine pastures which are public property then they are rented out. But in what are the meadows there are about 20 22 thousand hectares. In the whole of Trentino 85% of these 22 thousand hectares are cultivated with this title of tenure, that is, they are neither owned nor rented but are granted verbally free of charge most of the time. (13LocSocM)

In other parts of Italy, especially near big cities, land circulation is hampered by the '**agricoltura di attesa**', a lazy use of land that waits for the moment that land will become building land (2NatEdu/GovM)

There is the iridescent effect of support policies that then land used to intercept European funds or for so-called 'waiting agriculture' i.e. I do whatever I want with a shepherd with 20 sheep waiting for the building land in Rome that is. (2NatEdu/GovM)

Land access and promotion of young farmers are two connected elements. Since the acknowledgment by EU policy of the struggles of generational change in agriculture, the CAP and administrations dedicated subsidies and other incentives to young farmers. What often happens, though, is that behind the young applicant, there is the old father who profits from this opportunity while retaining the control of the farm. As a consequence, those youngs, willing to start a farm but who are not backed up by a farming family, suffer in practice the lack of access to such opportunities. (2NatEdu/GovM, 11LocFarmF) a solution to that is a careful drafting of the auctions/public calls for project (2NatEdu/GovM)

I have been following the Roman case again and . Let us say that policies and administrative measures then have . They have an effectiveness that is limited by the possibility of . I don't want to say 'prestanome' because we are also in a field of legality but obviously to organise the offers of proposals both for requests for contributions and so on in such a way that the children of farmers are favoured, which is all very well but often the old entrepreneur I mean farmers are behind it . But maybe it's not the real farmer's son but it's the farmer from before to continue with the same

practices and . And it's still difficult for those who come in from outside . But here we are in the area of more technical investments to understand how to overcome this obstacle and from an administrative rather than a policy point of view . When you make an example of the calls for access to the land, it is very important and delicate to identify the requirements for access and the awarding of prizes in the selection, and they must be the requirements that in some cases, when it is considered appropriate, must favour young people possibly the real young people without . Perhaps by valuing perspectives more and previous experience less (2NatEdu/GovM)

I saw it at the course I did, there were 63 of us farmers, I was the only one who started from scratch, who wasn't a 'daughter of', everyone was in the generational transition and then daddy's in charge, they do it to get the contribution. The son is nothing but the interlocutor with the cooperative who goes the tractor and deals.

(11LocFarmF)

As it has already surfaced from the report, **producers' organizations** (which are cooperatives recognized by the public authority, nda) are the key actor in the Trentino Province, shaping the fact the overall agricultural model. They are very efficient in organizing the production, concentrating the offer, managing quality, and therefore obtaining Common market organization fundings. There are portrayed as a necessary evil in the region because, if it seems that they promote monoculture, in fact they guarantee to some extent the diversification and integration of products (12LocGovM).

In the fruit-growing sector, above all, practically all the interventions are guided by the large producer organisations, or at least they are programmed by them. For example, in the fruit-growing sector, I'm talking about Melinda and Sant'Orsola in Trentino, which have been recognised at Community level as producer organisations, which require at least 300 members, a certain volume of business and so on and so forth. There are four or five large ones and they have their own cultivation programme which is presented to the European Commission. In return for this programme they also receive aid under the so-called. Common Market Organisation. We as a province have an office that does tutorials. But it is a programme that is very much driven from below by these organisations. (12LocGovM)

but if we look at the numbers at a general level, it is precisely cooperation that guarantees the diversification and integration of products. [12LocGovM].

For what concerns public support to short food chain, it has emerged that the Rural Development pillar of the CAP is exactly centred to promoting those activities. The limit of such attention, according to 1NatEduM, is that those were initially conceived as a mere instrument for face-washing, compared to the 'real' agriculture that is the market-oriented one. Nowadays it has changed, because local administrations have understood the importance of such initiatives for the territory. (1NatEduM) the Farm to Fork and research policies also go in that direction (1NatEduM and 2NatEdu/GovM). But the main limit of the system is its persisting duality: on the one hand diversity, on the other verticalized industrial agriculture (1NatEduM).

Local neighbourhood policies. In Tuscany that's all we talk about but all the municipalities have the municipality wants to promote its product and therefore encourages markets etc. [...] at the local administration level but also regional administrations generally do a lot because there too it's a way of communicating . [...] at the level of local administrations but also regional administrations generally do a lot because there too it is a way of communicating . when there was Slow Food . The regional councillor had great visibility and promoted the unique regional product and therefore the Chianina or things like that. And then these things end up in the newspapers is the same the Valdichiana when it has the aglione that is to say the Valdichiana now recognised not only for the Chianina but also for the aglione and think of the wine. A territory acquires value if there is a product that can be identified as a product of the territory, therefore whose qualities have these characteristics. Certainly there has been a strong incentive and if you look at the measures of the Rural Development Plan they go in all these directions. And then there was the period of support for

local markets, educational farms, all factors that in some way developed this sector of diversification. [...] What can be said is that these policies have not tackled the problem of the large supply chains in the sense that they have worked more on dualism, i.e. you were talking to a politician a few years ago and he would say to you, on the one hand, there's agriculture that makes the market and rural development and rural development are a bunch of bullshit that serve to create an image (1NatEduM)

In the Trentino Province, whereas, in the past, the Province would have independent support schemes for farmers, nowadays all public funding to farmers (EU and province fundings) are channelled through the Rural Development Plan -PSR (6LocGovM) the Trentino PSR does not support family farming as all the farms are small and run by families. The PSR can support short food chain through the investments schemes. (6LocGovM)

Is there also any incentive for family-run companies and/or short supply chain?

I: No, our companies are almost all family-run, they're all small companies, we don't have any big multinationals. For the specific short supply chain, there was the solidarity economy that did something. We have initiatives under the RDP to be able to do business improvements, what do I know? A company wants to set up its own shop and you give it a contribution for the structure. I don't know, I have a farm and I want to sell my products directly to the consumer, so you can put within your business plan the renovation of a direct sales outlet. (6LocGovM)

Trento municipality, provided that it is not competent for the economic aspect, has understood the cultural value of agriculture for the territory. Consequently, it has activated a local policy consisting on farmers' markets and attention to food education including school caterings. But it emerges that is quite difficult to promote sustainable and organic diets and local farmers simultaneously. This is due to the technical structure of public auction for catering. Since it is costly and time consuming for the municipality to open the auction, once it is done, the quantities required are big, and local small farms cannot satisfy the quantity requisite. (14LocGovF)

In reality, our producers do not participate in these tenders because they are not dimensionally able to guarantee a consistent supply of the product and a sufficient quantity. This is quite well known in the sense that it is difficult for small businesses because the size of the companies here is really small, and therefore it is difficult for them to participate in tenders that are in any case made in a certain size because the tenders in any case require a lot of work also from the point of view of construction, so it is not that small quantities are tendered, i.e. when it is done it is done for and therefore it is difficult for local producers to participate. (14LocGovF)

5. Agricultural models and the Common Agricultural Policy

5.1 Views on agricultural models proposed at the national/regional level

5.2. Common Agricultural Policy

Corresponding interview track section

- *What is the model, or models, of agriculture that has been promoted over the last thirty years?*
- *Has the model(s) evolved over time?*
- *What is the vision of agriculture in the future?*

1NatEduM

National Policies have invested on the made in Italy, with high quality products for the export (thanks to the Common Organization of Markets, which provide fundings for the promotional activities of producers organizations). Coldiretti has promoted Campagna Amica, farmers markets in which producers can restore a relationship with consumers. In some areas agritourism has been developed, and local level commercialization is clearly the main communication leverage, but in other areas, and agricultural sectors, such as Pianura Padana, the main model is still the big monocultural production, coordinated through cooperation.

Public policies have a role, but it's relevance should not be over-emphasised, and it works in sylos, therefore for cerealiculture and livestock production the identity of the farmer is still very much attached to the product.

Corresponding interview track section

- *How did the old CAP hinder diversity (in the three dimensions)? How did it promote diversity?*
- *How does the new CAP hinder diversity? How does it promote it?*
- *What have been the effects of direct payments? What have been the effects of the Single Common Market Organization? What have been the effects of rural development policies? On small/large farms/ naturally disadvantaged areas?*

For what concerns the interviewees' opinions on the CAP, a very similar viewpoint is expressed by those who closely know the policies do to their job (in academia or in the public administration) regardless the national or local level of their expertise. The overall feeling for the CAP is lukewarm. They evidence a progressive integration of environmental and rural development issues, the second being particularly relevant for marginal areas and diversity of food systems, but also point out the persisting dualistic approach of the policy, which still devotes the striking majority of its resources to direct payments.

1NatEduM thinks that CAP does not foresee diversity as a core objective; it contains scattered measures in favour, but many against, and it lacks a vision. If the CAP were to follow agroecology and diversity, then it would have to coordinate change in production, distribution, circular economy, and technology: there is technology that hinders diversity and technology that can enhance it. If all the CAP fundings were to be devoted to organic agriculture, we would have more diversity, because organic regulation provides measures for diversify the farm production. But some EU states strongly oppose the promotion of organic agriculture

because their model is incompatible with it (e.g. Belgium). Again, if all the fundings were devoted to Rural Development, you would see all the big farms collapse, but then you would have a real transition.

In Italy, and at regional level, the keywords of the national and regional policies are those set by the CAP, there is not so much freedom of movement.

12LocGovM explains that the new PAC contains some environmental components, but they were introduced in 1992 mainly to contrast the overproduction. Since the 2000, the introduction of the Rural Development pillar introduced some real measures for diversification, but the main part of the budget is still devoted to production-based subsidies. Contrasting interests have to be balanced and levelled, so no revolutionary change is ever possible.

Direct payments are now accompanied by the greening, but this is applicable for cereals, so not so relevant in the Trentino Province. There, the CAP brought subsidies for the maintenance of permanent pastures, even though also those measures generated problems, due to how they were implemented at national level. The historical criterium adopted created a system of titles (credits connected to a unit of land) whose value is calculated on the basis of the culture developed on that land until 2002-2005. This mechanism generated a market of titles and a title-grabbing, where speculators buy high value titles on the market (from farms which reduced or ceased the production) and combine them to a unit of land with low cost of maintenance, such as permanent pastures. This phenomenon is common in the highlands. Now Italy is progressively changing the historical system but the process is slow.

As per the Common Organization of Markets, in Trentino the cooperation managed to develop important production and commercialization plans and obtain relevant resources. But where the cooperation is lacking, these resources are difficult to access (because it is a program that namely favours concentration of the offer - nda)

Rural development brought consistent resources in the Province, too, though climate-agro-environmental measures and investment measures. This is a crucial element, especially in a mountain region, because it provides extra fundings for compensating the natural disadvantages, so it compensates the revenue difference between a valley producer and a mountain producer: now it amounts to 13.5 billions per year. This subsidies, in Trentino, targets mainly livestock production.

For those who only indirectly know the CAP (civil society), or see the practical part (farmers, lawyer), opinions are much more critical.

3NatSocM, despite its general pessimism, sees in the Farm to Fork a path to a positive transition. He firstly says that, with the CAP, the alternative has been scientifically dismantled. Within the international forums (Brussels, or FAO) some words are banned (ecology, food sovereignty). In Romania, the 80% of agricultural producers are peasants and get no funding; in UK the monarchy gets the majority of the CAP.

The Green Deal and the Farm to Fork instead represent a very good opportunity for changing the vision of agriculture and start talking about food systems. But the CAP was already designed when these documents

were adopted, and the Covid pandemics and Ukraine war pushed for a drawback of the CAP objectives, and were redirected to compensate the losses due to the crises.

Direct payments are, in his opinion, the main problem, because is a scheme that pushes for standardization. Rural development provides the tools, but much depends on the Region that implements it and decides how many resources have to be channelled into the Program. Lombardy for instance has cut rural development measures to the minimum possible.

the new CAP says many interesting things. in the Green Deal there is the European biodiversity strategy and the farm to fork. So the farm to fork has some very interesting things and the green deal even more so. The problem is that they come after the CAP and so if there has been in the negotiations, in short, this thing here was going a bit by itself but it was already going well enough. This happened during the COvid period and with covid what happened. Confindustria and the big things said fuck fuck the crisis the state the state money money money where is it? in the Pac and then go back i.e. regress to make up for the lack of income because the market messes up. The war in Ukraine is a disaster, i.e. when there are emergencies the sharks raise their fins, so on the new CAP the answer is I don't know, in the sense that in reality there was a mechanism that was moving towards a more systemic action with instruments of medium and good cogency, i.e. not programming like the CAP but more of strategy. but it is an advance. Crises are always good for taking out the sharks (3NatSocM)

direct payments is a system that flattens because it tends by its nature to make a very all-encompassing calculation of what is supposed to be the market but it tends to standardisation tends a bit there and favours compensatory mechanisms that is why we come back to the questions that he said how is it that the farmer chooses to do things, chooses according to... (3NatSocM)

15LocLawM expresses his view on the CAP saying that it is a system based on paper. There are people that do much more without getting funds, and those who get funds don't do what they are payed for. The CAP gives subsidies for the pastures, but nobody uses them in practice. The CAP targets the enterprise, whereas it should direct resources to those who concretely provides ecosystem services.

According to **13LocSocM**, the main shortcoming is that, in the CAP, the objectives of agricultural production, on the one hand, and environment, on the other, are not integrated, are pursued separately. And the lobbies push for GMOs and monoculture. The small players are always excluded, whereas a good policy should keep together the market needs as well as the needs of the territory.

In the opinion of **11LocFarmF**, the CAP should be paused for a couple of years, so it comes out who conducts agricultural production with a certain attitude, attention and pleasure.

6. Sustainable and Diverse Food Systems

6.1 Sustainable food systems

Speaking of Sustainable Food Systems:

How does your institution interpret the concept of sustainable food systems?

What are the main obstacles to the implementation of sustainable food systems?

What actions should be taken to promote sustainable food systems?

Definition

Sets of activities and actors able to promote a sustainable diet made from sustainable products. Generated by sustainable products

Int 1

Let us say that we have been working on the notion of system very much that is what a food system is. What is this thing here of the context cycle I was saying before about the food cycle. This is one way of approaching the definition of the food system. And the other thing is how to measure these components and their relationships. To make the notion of a system more objective and therefore manageable

which is otherwise not very manageable. And the other thing is once I define what the components of the system are that make them measurable another job we are trying to do is to assign responsibility for governing this thing and then in terms of governance precisely. And here within our political discourse of food actually one of the things at the origin is precisely a reasoning of governance, that is, reassigning the different institutional levels to the different actors involved.

Int 3

Environmental social and economic, so sustainability must be on these three points, if one is missing it is no longer sustainable.

Sustainability for me travels on these things here and must be 360 degrees. so sustainable in the way I buy the plants, sustainable is the manure I put in, so the animals eat hay that is good and that is paid for, that is, the whole chain must affect everyone... and none of these phases can be missing.

(int 11)

Let's say that the Province supports according to its vision, which is not necessarily my personal vision

However, it has always supported sustainable production from an environmental point of view ever since, for example, the self-discipline protocols were drawn up for the various types of production, both livestock and fruit and wine, so there is a certain pride on the part of the institutions as well, because back in the 1980s there was already a focus on integrated production, and in the end there was no self-discipline protocols.

(int 12)

Having said that sustainable systems are linked to the territory, to the territory, to zero kilometre territoriality, a term that is a bit overused, a bit misused, but in any case because if not, the further we go, the more this sustainability does not add up. We also consider biodiversity to be cultural diversity, all the heritages and all the heritage of knowledge that lies behind all the varieties that we have in some way saved and of which we must also save not only the memory, but also the heritage itself, which means: why how, when, where... hence why so many varieties were cultivated, why those varieties there and not others, when they were harvested, when they were sown, when they were worked on. [...] We see this as real sustainability. Because if not, then sustainable as in ecological as in organic as it becomes a term that then goes into the marketing of large-scale distribution rather than...and they end up emptying themselves

Int 13

So this is a good question that should be asked of our politicians because what it is and what it is not, then let's say that what should be done would be to create a system on the concept of food, that is, to think about food at 360 degrees and where food is included in all public policies. And then precisely to do a reasoning with a control room (int 14)

Actions

But in my opinion it always comes down to the consumer's conscience. [...] If the consumer who is the one consuming and therefore willing to spend because he is motivated by quality and nutritional value but also by ethical value for all these things

(int 13)

I believe that what is already being done in many cities is certainly a good job. In the sense that the fact that certain institutions are already starting to talk about it is certainly a first step forward. the important thing, as I said before, is that it is not a fad but a real condition, and this could actually lead to a first step towards the creation of a sustainable food system.

(int 14)

6.2 Sustainable food systems and key policy – synthetic survey

SUSTAINABILITY	1	2	3	11	12	13	14	15
The regulation on seeds and reproductive material	1			6				
Agriculture in protected areas (natural parks, Natura 2000 sites)	5/6			4/5				

Quality schemes (PDO, PGI, mountain products)	4/5		2			
The regulation of organic production	6/7		6 (se fosse fatto bene) per adesso 4			
Food hygiene regulations	4/5		5 ma anche 1			
Technical standards for agricultural products and foodstuffs	1		1			
Producers' organisations	5		2			
Supply chain contracts	5		2			
Food and rural districts	5/6					
Consumer needs	5/6		7			

6.3 Diverse food systems

Corresponding interview track section

Talking about diversity of food systems:

How does your institution interpret the concept of diversity of food systems?

What are the main obstacles to achieving food systems diversity?

What actions should be taken to promote the diversity of food systems?

A diversity of the system is when. Multiple components perform different functions and there is redundancy between the functions

Redundancy is positive because stability is ensured that does not depend on the presence of a component in a function but can still be replaced in the event of external shocks.

Int 1



monitor to understand . Know what the level of diversity is at Moment Zero and monitor it . And then put together a whole set of tools that can incentivise understanding what the impact of each measure might be on aspects of diversity

Int1

Taking a systems approach, diversity is linked to very different social economic environmental factors. Diversity is very much for us linked to very very different factors. So it is not an issue related to the diversity of agricultural production. it is related to the diversity of all components of the system.

We are methodologically against solutions. And so that is if you have diversity you have diversity and therefore more an approach than solutions. We have an approach and tools. You can say we have a vision of sustainability that goes from an approach that is the one that says let's understand what the components of the system are in each place. And the way you do the approach and tools especially that is not a solutions approach

Int 3

Being able to have more choice in different food systems, which can be conventional, organic, biodynamic, natural, anthropological. The fact that a person can choose gives an added value, if there is a

Int 11

And are there obstacles to achieving diversity in food systems? I don't know. The way we are, I think so, that it might just be the lack of information.

Int 11

And what do you think would be an action they could encourage?

Diets. It could be a point where, if you go for health, you are what you eat

Int 11

i.e. there is obviously a tendency to favour individual initiatives a little more than in the past, but to do some planning so that deciding out of the blue, for example, to transform the Val di Non from a fruit-growing, apple-growing area to something else, I see it as very much. That is, nobody has thought about it.

(int 12)

There were obstacles I don't see just one. I don't see a very strong public presence.

(int 12)



without being nostalgic, I would say that at least looking at or comparing ourselves with the rural economic system that we had in our territories can help us in this, no, because the rural economic system was indeed a poor system economically because there was little market or little exchange of money, but it was rich in diversity of biodiversity of products

but also of cultures that crossed each other and confronted each other because then man is made like that, and so at least to me personally that always makes me think much more than not. Like as a model.

(int 13)

Here the main obstacles are probably above all cultural and experiential, in the sense that if you do not experience the trust of the relationship of exchange I give to you then you give it back to me, or you give it to someone else as we do in the exchange of seeds, you take them, I give them to you, you reproduce them and next year you give them to someone else, you create a circularity of exchange. I'll never even know if you've done it or not anymore, but that's not what counts, it's your consciousness that counts, I'm done in this thing here, so the obstacles are precisely that there is less and less of this experience

(int 13)

6.4 Diverse food systems and key policy – synthetic survey

(insert in each box the total number of votes for each item in the list)

DIVERSITY	1	2	3	11	12	13	14	15
The regulation on seeds and reproductive material	3		1	6	2	1		
Agriculture in protected areas (natural parks, Natura 2000 sites)	6		2 o 6 a seconda del caso	6	5/6	6		
Quality schemes (PDO, PGI, mountain products)	5/6		5	2	5/6	5		
The regulation of organic production	5		5	6(come lo vorrei) 4 (come è ora)	6	?		
Food hygiene regulations	5/6		4	5	5/6 (se si tutelano i prodotti tradizionali)	?		
Technical standards for agricultural products and foodstuffs	1		3/4	1	2	2		
Producers' organisations	4		4	2	5	5		
Supply chain contracts	4		5/6	6	3 o 5 a seconda	–		
Food and rural districts	5/6		6/7	6	6	5		
Consumer needs	5/6		6/7	6	6	7		