

ROAM-FREE: Towards Robust Animals in sustainable Mixed FREE-range systems

Internal project report

Comparative analysis of interview data from free-range pig farmers in Denmark, Italy, Norway, Slovenia and Romania

Development pathways, social sustainability challenges and benefits



Norwegian mixed free-range system including pigs. Photo: Tommy Ruud

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About this document

A questionnaire was distributed to all partners within the ROAM-FREE project with the intention of completing structured interviews with organic and non-organic outdoor access pig farmers within each of the participant countries. Denmark, Italy, Norway, Slovenia and Romania. In total, 33 interviews were completed.

This document summarises the main insights of the comparative analysis of this combined data set. The analysis focused on examining the different development pathways, and sustainability challenges and benefits of organic and non-organic outdoor access pig farming across the countries.

As terminology can be a source of confusion and contention, we wish to clarify the following:

Outdoor access pig farming

During the course of the project, it became evident that partners had different definitions and perceptions regarding the diverse terminology that can sometimes be used interchangeably in this field. Free-roaming, free-ranging, outdoor access, organic, extensive and even what constitutes a conventional production system. These differences reflect diverse national and cultural context within which pig farming is taking place.

In this document we adopt the terminology of **outdoor access** pig farming. We understand this to be a system in which pigs have freedom to access an outdoor area at their own will. The areas themselves might include hard-standing or pasture. This area is fenced or otherwise bounded by man-made or natural features that ensure pigs stay in a particular area. The amount of land afforded to the pigs was not a defining consideration, a point we will discuss in the results. These rearing practices might occur with the context of official organic certified systems, or it might be non-organic but nevertheless still enable pigs access to outdoor areas. This definitional choice, although not perfect, aims to accurately capture the diversity of rearing practices that exist across the countries included in the analysis whilst indicating the main shared dimension. More detail on the affordances of outdoor access, as it pertains to each country, is provided in the analysis.

Sustainability

Our analysis of sustainability challenges and benefits includes consideration of the environmental, economic and social dimensions. Sustainability is therefore considered a multifaceted concept that requires consideration of each of the three-pillars. Due to the type of data we have collected, there is an emphasis on economic and social dimensions of sustainability. No actual environmental or biodiversity data was included in the analysis presented in this report. Therefore, environmental sustainability considerations are limited to the perceptions of the farmers.

Background

To reach the European Green Deal ambition of “at least 25 % of the EU’s agricultural land under organic farming by 2030” (EC, 2020) it is essential to support consumer interest and trust in organic animal products.

Ensuring that pigs have outdoor access has become a feature of several industry labels and standards, for example, legally regulated standards such as ‘organic’, whereas others are with informal cultural or private retailer/industry standards, such as ‘free-range’ and ‘pasture raised’. In addition, it potentially reduces the need for antimicrobials (Nielsen et al., 2021) and, with the right management, decreases the carbon footprint compared to indoor organic housing systems (Jakobsen et al., 2015). Free-range pig systems comply well with consumer expectations (Therkildsen, 2013), and support the organic principles of “natural living”. This facilitates getting the premium price with consumers needed to cover the extra cost in comparison to other pork welfare products (Denver et al., 2017).

However, managing pigs in outdoor free-range style systems is challenging, and across Europe, free-range access is declining in the established organic pork producing countries (Jensen et al., 2020) and in other countries, e.g. Norway, Romania, and Slovenia pigs are almost non-existing in organic farming. Stakeholder inputs (Jensen et al., 2020) and expert evaluations (Norwegian Scientific Committee for Food and Environment, 2017) reveal that biosecurity challenges and excessive land requirements are contributing factors. Free-range mixed production systems of pigs with other livestock or crop production may offer a framework to solve some of these issues while supporting farm self-supply of feed and biodiversity, and this is what ROAM-FREE plan to investigate across five nations in Europe: Denmark, Italy, Norway, Slovenia and Romania.

In ROAM-FREE, existing mixed free-range pig systems throughout Europe will be identified, evaluated in terms of animal health, welfare, productivity, feed-sufficiency, biodiversity, economy, and environmental impact. This will expose benefits and challenges in a variety of mixed systems and form the basis for knowledge-based practical guidelines to improve existing mixed systems. Innovative mixed farming concepts will be developed and discussed with pig producers facilitating a wider adoption of mixed farming strategies in organic pig production.

However, outdoor pig farming not only has economic and environmental implications. It needs to be socially sustainable for farmers. Agriculture - with its intricate relationships of people, animals and land, often over several generations – means that the role of the farmer is essential (Riley, 2010). It is therefore also necessary to examine the role of the farmer, and the cultural and national context in shaping the development of specific free-range outdoor rearing systems, how these have developed over time and their contingent sustainability challenges and benefits.

Organic outdoor access pig farming in Europe

The EU recognises the benefits of organic farming for sustainable agriculture, food and consumers. Organic farmers have been able to benefit from several support measures as part

of the Common Agricultural Policy (CAP) Strategic Plans in place to support organic farming in the EU (European Commission, 2023).

In the EU, organic animal production has registered rapid growth in recent decades. But in comparison to other food categories, the organic share of animal production remains small as measured against total EU animal production, at 3% (Augere-Granier, 2020). In pig production this is even less, at less than 1% of all pig farming in the EU. Although countries such as Denmark and Austria have higher levels of organic pig productions (3% in both cases), organic pig production remains marginal (Augere-Granier, 2020). Nevertheless, albeit from a lower basis, organic pig and poultry production show higher annual growth rates (9 and 11%, respectively) than other animal production (European Commission, 2023).

Since 1 January 2022, Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 is the applicable legislative act, also known as the basic act, laying down the rules on organic production and labelling of organic products. In contrast to conventional systems, organic standards require that animals are kept with outdoor access. However, according to national industry agreements and based on national interpretation of the EU-regulations for organic farming, the type of outdoor access varies (Früh, 2011).

Three main practices of outdoor access are reported. First, access to a concrete run that is outside. Second, pigs reared outdoors in paddocks on pasture, all year round. Third a combination system with pigs reared indoors and outdoors depending on the production stage with pigs moved between indoor and outdoor settings over the production cycle. The characteristics of the outdoor settings differs depending on farm and national context which is detailed in the analysis contained within this document.

Materials and methods

In this study a questionnaire survey was carried out. The survey was initially designed and questions formulated by the Norwegian researchers and then adjusted following several iterative rounds of input and comments with the researchers from the project consortium. This was to ensure that the questions were broadly relevant across the five different national contexts.

The questionnaire was structured around four broad thematic areas.

- 1) Characteristics of the farmer – including demographic questions, ownership and management of the farm.
- 2) Characteristics of the farm: past and present – including the development of the farm over time, when pigs began to be reared outside, the practical adaptations required and motivations for this change.
- 3) Perceptions of Sustainability – including perception of economic, social and environmental sustainability, animal health and welfare.
- 4) Knowledge and support – including importance of access to extension services, veterinary advice and peer advice.

In each case the questions aimed to examine how outdoor pig farming had developed and the different economic, environmental and social challenges and benefits of rearing pigs in organic and non-organic outdoor access systems.

The questionnaire provided a shared basis from which to complete interviews within each country to ensure consistency of questions. The questionnaire was designed initially in English and then translated into the local language by relevant partner organization. The responsibility for conducting the interviews was that of each partner organization. Questionnaire design and analysis was the responsibility of the Norwegian partner.

A full copy of the questionnaire scheme is available in appendix 1.

A total of 33 interviews were completed across the five countries.

Table 1: Number of interviews completed per country.

Country	Number of interviews
Denmark	2
Italy	5
Norway	20
Slovenia	1
Romania	5

The disparity in interviews between countries reflects both the presence of a dedicated social science researcher in Norway, the differences in national context, and the availability of participants. The larger Norwegian data was used as a core data set against which to compare other countries. All insights were discussed within the consortium and ‘sense’ checked by the researchers who have considerable expertise within their respective national and the European pig farming and organic pig farming context.

The purpose of this study was not to provide representative sample of farmers but to generate comparative insights, checked against knowledge and experiences of the research experts involved in the project. This gives us confidence that the results discussed in the rest of the document, although tentative, provide meaningful comparative insights into the different development pathways, and sustainability challenges and benefits unfolding across the five national contexts.

All interviewed pig farmers reared pigs with outdoor access. Henceforth rather than referring to outdoor access pig farmers in each instance the analysis will instead simply refer to pig farmers.

Comparative Analysis Results

Diverse farm and business structures

The structure of free-range pig farming was diverse across each country due to the different histories of pig farming, and the contemporary role of organic production in each country.

Denmark is the only country in the sample that had a well-developed commercial market for organic pork and free-range pork production. Consequently, the Danish farms were of a significantly larger scale (in terms of land and number of fattening pigs being reared) than the comparators in other countries. These farms were specialised in pig production, had a much larger number of paid workers (in pig production) than in other contexts and were selling pork into an organic retail market.

The Slovenian farm most closely resembled the Danish examples. Here the farm had adopted pigs in the past 10 years as part of a commercially orientated investment to maximise farm utility, land use and productivity in the context of supplying a supermarket chain and local restaurants with products.

In all other countries the interviewed farmers reared pigs as part of diversified businesses. Some farms were of sufficient scale which required paid employees, but many were solely owner operated or involved help from family members. Pigs were never the main source of income but rather a means of adding value to farm enterprises and/or taking advantage of suitable land that was difficult to use for other purposes.

In Norway and Romania pigs were part of diversified smallholdings, one source of income amongst a range of agricultural production activities. In both cases the number of fattening pigs being reared annually was relatively very small (<10 – 30) with a small number of exceptions (e.g. farmers with 100-2000 slaughter pigs annually).

But there were two main points of divergence in structure. Firstly, Norwegian farmers overwhelmingly reared pigs on pasture but principally limited to the summer and autumn seasons due to winter weather making all year round rearing difficult. In Romania outdoor access was much more diverse, including small backyard style access, outdoor concrete runs, to pasture access. Secondly, the history of the farms was very different. Romanian farmers were continuing a long-standing practice, whereas in Norway outdoor pig rearing had re-emerged in the last 20-15 years, following a period of abandonment in the 1970s. This had consequences for access to knowledge, both intergenerationally and through formal veterinary or extension services.

By contrast, the Italian farms had integrated outdoor pigs as part of a highly diversified business that included food, tourist and restaurant activities. In this context, pigs were also part of diversified agricultural activities but more specifically orientated towards directly providing food for other elements of the business. One consequence was that the scale of pig production more closely tailored to the needs of these directly integrated businesses with trade-offs between other necessary productions.

In summary, outdoor pig farming is significantly shaped by national context, local material conditions (availability of suitable land whether this is pasture, woodland or an outdoor area of concrete hard standing) and the specific market niche that is available. These factors determine the scale and style of production with the actual outdoor rearing practices being very diverse. This reflects the flexibility of the pig and its ability to thrive in diverse conditions and how this can be tailored to meet the production needs of different farms, farmers and local conditions. In Norway, Slovenia, Italy and Romania, pigs are part of more diversified farm activities, although operating at different scale. Specialised pig production at scale was only taking place in Denmark.

Market niche and economy

Outdoor pig rearing occupies a clear market niche in all national contexts. However, the specificities of this niche vary substantially.

As outlined in the previous section, the farms in Italy reared pigs as part of an integrated agricultural, food and restaurant/tourist enterprise. Here topics of provenance, locality, heritage (linked to some breeds), improved welfare, health *and* organic, improved meat quality and taste were all mentioned as values that were being produced through pig production. Equally, producing a range of values, in part, through the rearing of pigs outdoors, was a strategy for enhancing the restaurant and tourist elements of the business. This vertical integration allowed clear capture of value being added.

The market niche in Romania and Norway appears to be similar. In Romania, pig production is either through direct customer sales or through relations with local retailers. In Norway, the retail market is very fragile and limited with direct sales being the predominant avenue. Direct sales were very localised and often included friends and family. In both cases, organic certification was either absent or viewed with significant scepticism. None of the Romanian farmers were organic whereas around half of the Norwegian farmers were organic certified. However, in the Norwegian instance, there was significant ambiguity around the value that organic was bringing and whether the additional costs were returned due to the weak demand for organic pork. The market niche was therefore considered to be more linked to outdoor production, not organic certification per se in Norway.

In contrast, Danish and Slovenian farmers sold into a commercial organic retail market. Although arguably only Denmark has a well-developed commercial market for organic products including export opportunities. This reflects the highly developed and export orientated nature of Danish pig production. Whereas the Slovenian farm was production for national and local retailers and restaurants. The scale of the market niche is therefore considerably different between these two countries.

However, it is important to note that in nearly all cases the economics of pig production were considered to be challenging, with a lot of work associated with maintaining consumers networks necessary to facilitate direct sales and the additional logistics of such an enterprise.

Furthermore, the value of organic certification was questioned in several instances. In Italy and Norway, the focus on local sales meant that organic certification was deemed less

important. The immediate transparency of being able to observe the production practices and outdoor pigs was deemed most important. Organic was therefore only important when the proximity of the consumer to the farm was greater and direct observation was not possible. Here organic operates as a proxy for better production practices. Organic was therefore potentially increasing the costs of operating, especially due to the different feed demands, whilst only being of significant benefit for businesses that are trading pork more widely.

Working with pigs and quality of life

Farmers across all countries expressed a degree of satisfaction from working with pigs and farming more generally. This included a passion for being outside, the fun that was to be had from working with pigs, and the satisfaction for rearing animals in good conditions. Therefore, in certain situations the improvement to welfare, specifically a reduction in tail biting and other behavioural problems had mutual benefits for the farmers. Where pasture systems, including within woodland, were the norm, outdoor rearing was a source of pride for the farmers that they were able to openly share their production process with consumers as part of generating the transparency that was important for the business. One point of contrast was the Danish context, where organic pig farmers considered the use of concrete runs as the production's 'Achilles heel'.

However, this is balanced by the much greater work requirements that result from pigs being reared outside. Pigs are monogastric animals and therefore need to be provided with supplementary feed on a daily basis. They can be time consuming and occasionally cause trouble, escaping fenced areas and having to be chased back to the enclosure. The liveliness of pigs is therefore a source of tension that can mean they are more difficult to manage outdoors. It also creates additional management requirements, for example the need to move pigs between pastures to prevent excessive soil erosion, and maintaining fences to prevent escapes.

This suggests there is a need to consider the positive impacts that outdoor pig rearing can have for the welfare and enjoyment of the farmers not just the pigs.

Summary

In summary, land, local and national markets are limiting *and* facilitatory factors of organic pig production. Only in Denmark did there appear to be organic pig farming operating at scale to meet export and national market demands. Whereas Otherwise, production and consumption was much more localized, often involving direct sales networks and contracts with local retailers and restaurants. Here, organic was just one of the key qualities to support sales with the transparency for customers being deemed more important in some instances.

The result was diverse business structures with the scale and economic viability of production being limited due to the specifics of the market niche into which the pork was being sold. However, in all cases outdoor pig rearing was a value adding process that created additional important streams of revenue as part of diversified farm enterprises.

The value of organic certification was questioned in some instances where the market was hyper localized and the practice of outdoor rearing and the transparency it produced for the consumer were considered to be of greater value.

Economic conditions were challenging for all producers and with the exception of Denmark pigs were not the sole source of income. Where sales to retailers and local restaurants were not possible, or had not been established, direct sales networks were the principal source of consumer sales. However, maintaining direct sales networks could be challenging and involved significant work, including logistics.

The high level of wellbeing and satisfaction of the farmer was a re-occurring theme which suggests that rearing pigs outdoors has mutual benefits for the farmer, the pigs and potentially the environment.

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Appendix 1: Questionnaire guide for all national contexts

Aim of the interview

The aim of this interview is threefold. Firstly, we aim to examine the history of the farm, how it has developed over time and the role of pigs in shaping those developments. Second, we want to examine the practices of pig rearing on the farm. Third, we want to understand the farmers' perceptions of the sustainability benefits and challenges of farming with pigs in mixed systems. Mixed systems are understood as systems where a part of the area of the farms is used for other livestock, crops or agroforestry in combination with pigs.

The interview will cover the following topics:

1. Characteristics of the farmer
2. Characteristics of the farm: past and present
3. Perceptions of Sustainability
4. Sources of knowledge and access to advice

Y = If there is time pressure during the interview, Y is to be seen as the most important questions and must be prioritized. Y are also the questions to be prioritized if the interview for some reason must be performed digitally or by telephone. The number of questions can eventually be reduced in these situations as it will be a more tiring process to the informant (but not necessarily). To everyone's orientation, based on a few tries in Norway, the exhaustive guide is found to require one and a half hour, while the reduced guide is found to require approximately half the time.

Characteristics of the farmer

- Are you the owner of the farm or are you hired as a daily manager?
 - How did you become the owner? (Bought, inherited, married, gift etc.).
- Y What is your nationality, gender, age and educational level?
 - Do you have any farm specific education?
- Y How large is the farm in hectares?
 - Do you own or lease the farmland?
 - If it is a combination, what proportion of the land is leased vs. owned?
 - Why do you lease land instead of owning it? (E.g. not interested in ownership, can't afford to buy it, it's not for sale, legal obstacles etc.).
 - Would you rather own the farmland, and if so, why?
 - What is the duration of your lease contract?
- Y Do you manage the farm alone or in collaboration with anyone else? (E.g. spouse, another farmer, paid workers.).
- Based on hours worked, is the farm your (or anyone you collaborate with) your main job?
 - Do you have secondary work outside of the farm, in which case, in what sector?
 - If you collaborate with anyone on the farm, does he/she have secondary work outside of the farm?
- Roughly, what percentage of the household's income comes from the farm?

Characteristics of the farm: past and present farm history

- Y How long have you been responsible for the farm?
- How would you categorize your farm? (E.g. conventional, commercial, organic, hobby, smallholder).
- Y Which animals, crops and vegetables were produced when you took over the farm?
 - Y Have you done any changes to this?
 - Y Which animals do you rear at the current moment?
 - Y What is the number of animals you currently rear?
 - Y What motivated you to do changes to the production of animals?
 - Y Which crops and vegetables do you currently produce? (Incl. trees, fruit, vegetables, cereals etc.).
 - Y How large are those productions in hectares?
 - Y What motivated you to do changes to the production of crops and vegetables?
- Do you think you will do any changes regarding which animals, crops and vegetables you produce in the near future? (E.g. more or less, introduce new animals or crops etc.).
- Y Have you adopted any new types of infrastructure, machinery or other technologies, and if so, what kinds?
 - Y Has this affected how you farm?
 - Y What was your motivation behind adopting new techniques?
 - Do you think you will do any changes regarding infrastructure, machinery or use of technology in the near future?

History and motivation of pig rearing

- Y Were pigs already reared on the farm when you became responsible?
 - Y If no, when did you start rearing pigs?
 - Y What was your motivation to start rearing pigs?
 - Y Did you need to change other farm practices when you introduced pigs?
- Y Which breed of pigs do you keep?
 - Y Why did you choose this exact breed(s)?
 - Have you tried other breeds, and if so, why did you change it?

Practical aspects of the pig rearing

- Y How many pigs do you rear annually?
- Y At what time of the year are the piglets born?
- Y How are the sows kept during farrowing and suckling?
 - Why do you organize it this way?

- Are the piglets and sow separated post-weaning?
 - If yes, when and what are the criteria deciding when it should happen? (E.g. age, sex, weight, policy requirement).
- Y Are pigs moved to different pastures and/or buildings during their growing and finishing cycle?
 - If yes, when, why and where do you move them?
- Y When are pigs slaughtered? (E.g. weight, age, season).
- Y Where are the pigs reared? (E.g. open pasture, woodland, pasture with trees, back-yard, housed but with access to free-range outdoor runs).
 - Y What kind of housing do you use?
 - What are the main benefits and challenges of this form of management?
- Do you manage your pasture in any way prior to the pigs being kept there?
 - Do you manage your pasture in any way while the pigs are being kept there?
 - Do you manage your pasture in any way when the pigs have been removed from the pasture?
- Y Is the pasture part of a crop rotation, and if so, what follows pasture that has been used by pigs in the rotation?
 - Y If yes, what is the reason you have chosen to structure it like this?
 - Y What are the benefits and challenges by such a mixed production?
 - Y If no, have you tried earlier, but left the idea?
 - Y What was challenging?
- Y Are the pigs reared in any synergy with trees or wood, and if so, which kind(s)?
 - Y If yes, what are the benefits and challenges combining pigs and trees or wood?
 - Y If no, have you tried earlier, but left the idea?
 - Y What was challenging?
- Y Are the pigs reared together with other animals?
 - Y If yes, which kind of animals?
 - Y Do they graze together, or are they rotating between pastures separately?
 - Y What is the reason you have chosen to rear the animals together/separately?
 - Y What are the benefits and challenges by this organization of the animals?
 - Y If no, have you tried earlier, but left the idea?
 - Y What was challenging?

- **Y** How are the feed needs of the pigs met?
 - **Y** What is the ratio between pasture resources, crops, and feed concentrate, roughly?
 - Do you vary the ratio throughout the pigs life cycle, i.e., more or less feed concentrate or pasture resources with the pigs ageing and weight increase?
- How do you manage the feeding with feed concentrates and eventually harvested crops etc. while the pigs are on the pasture?
- **Y** Has the way you rear pigs changed over time?

Sustainability

- **Y** Does the farm meet any formally recognized production standards such as industry quality standards, organic standards etc. as defined by national and/or EU government?
 - **Y** If no, what is the reason for this? (E.g. not interested, difficult to qualify).
 - **Y** If yes, what do you consider to be the benefits and challenges of meeting these standards?

Environmental

- **Y** What do you consider to be the environmental benefits and challenges keeping free range pigs in a mixed system?
- **Y** Has there been any positive or negative changes to the soil or local environment after introducing free range pigs? (E.g. soil nutrition and health, erosion, soil compaction).
 - **Y** If yes, can you elaborate those changes?
 - **Y** In which ways have you facilitated or compensated for those changes? (E.g. choice of breed, rearing practices).
 - **Y** Do you think any other species has been positively or negatively affected by keeping free range pigs? (E.g. birds, plants, insects, other animals).
- **Y** How does the free-range pigs impact the landscape, and what do you think of it?
- **Y** Do you want to plant more trees or wood?
 - **Y** What is the purpose?
 - **Y** Is anything hindering you from doing this? (E.g. regulations, time, knowledge).
- **Y** Do you experience any practical barriers for developing your methods of production towards more sustainability? (E.g. not enough farmland, lack of equipment or natural resources etc.).

Economic

- **Y** What are the economic benefits and challenges of keeping free-range pigs in a mixed system?

- Are there any areas where you think the costs are higher than in conventional pig production?
- **Y** Does free-range pig rearing allow you to respond to fluctuations in key input prices (e.g. feed) and in the market price of pork products?
- **Y** What is the main market for your pig products? (E.g. direct sale, commercial market and retailers, informal network etc.).
 - Has rearing free-range pigs increased the market appeal of your products?
- **Y** Are there any state/national incentives such as subsidies to practice free-range pig rearing?
- **Y** Do you experience any economic barriers for developing your methods of production towards more sustainability? (E.g. lack of market, lack of state incentives, lack of other resources, too low income etc.).

Animal health

- **Y** How would you consider the health status of your herd of pigs?
 - Do you experience any diseases or health issues?
 - Do you use any medication to prevent or treat diseases? (E.g. vaccines, deworming, antibiotics, alternative medications).
- **Y** Have you done any measures regarding biosecurity to prevent diseases? (E.g. fencing to keep wild boars out of the pasture).
 - **Y** What motivated this measures? (E.g. laws, experience, personal concerns).
- Do you rear specific breeds that are perceived as resistant to any specific diseases?
- **Y** What are the main animal health benefits and challenges you have experienced from rearing free range pigs?
- **Y** What are the main animal welfare benefits and challenges you have experienced from rearing free range pigs?
- **Y** Do you experience any regulatory barriers to developing your pig rearing towards more sustainability? (E.g. animal health and/or welfare, availability of breeds).

Social

- What parts of the farming give you most satisfaction?
 - Do pigs contribute to this?
- **Y** How does free-range pig rearing, and a mixed farming system in general, impact your work-life balance? (E.g. does it create additional work affecting your leisure time, or does it reduce your work load, freeing time to do other things?)
- Have you personally experienced any occupational health benefits or challenges?
 - Do pigs or the mixed farming system contribute to this?

- **Y** How have other farmers responded to your farming system, ideas, methods and products?
 - **Y** What about other members of the local community?
 - **Y** And what does your family think of the farm?
- **Y** Do you experience any personal or family barriers for developing your methods of production more sustainably? (E.g. lack of time or labor, quality of life and work-life-balance).

Sources of knowledge and access to advice

- **Y** What have been the most important sources of learning and knowledge of pigs and pig rearing, in general and specifically in mixed systems? (E.g. family and friends, personal experience, other farmers/peer network, education, farm advisors, veterinarians, journals, internet pages etc.).
- Who do you ask when you are seeking advice on a particular animal health or management issue?
- **Y** Have you attended any educational events or courses on free-range pig rearing?
 - **Y** If yes, when was it and who organised the course?
 - Did the course make you change anything about how you rear pigs?
- Do you have a regular farm advisor, or veterinarian, or have you been visited by such actors, who has provided you with information on pig management, health, welfare, feed etc?
 - Has this influenced how you rear pigs currently?
- Are there any areas where you think more research or knowledge would help you improve your pig rearing system?