



teamwork and exchanging tips and tricks between colleague-advisors with more competence and experience in specific technologies or in strategic advice should be able to solve this.

1.7. Increasing possibilities for online and automated advice necessitate stepping up advisory competences and tools enabling the multiple use of data

Farmers and advisors are more and more using IT tools and working with digital info and data (internet, smartphones, e-learning, twitter, apps, various kinds of digital tools etc...). **Many existing and new data flows could fulfil multiple uses and be brought to a higher level through improved ICT applications if supported by independent advisory services and made interoperable with harmonized standards for data exchange.** For instance, compulsory recorded animal data can help improve breeding and husbandry on farms. Recording the application of plant protection products under IPM schemes and data collected in the framework of CAP direct payments and Agri-environmental measures can help optimizing cost-efficient production. Nutrient application data and soil analysis linked to area based payment mapping systems could provide valuable input for regional farm nutrient recycling, waste management and to monitor environmental impact. **All those data can also serve research purposes.** Farmers will have to be informed on the potential, the cost and benefits of investments in digital technology, and need impartial help to understand their position in a digital environment (data ownership, interoperability etc...). They will need support from intermediaries such as farm advisors to take up the newest technologies and help with tailor made decisions on ICT use which are adapted to the specific farm context. The advisors of the future need dedicated support and efforts to be ready for such tasks.

1.8. The essence of future advising is face-to-face on-farm, tuning blended learning to the farm context

Various types of information are coming to the farmer through a variety of means (internet, smartphones and apps, e-learning, group work, benchmarking, innovation projects and also input from the non-agricultural sector). Even with all this blended learning, it is stays beyond doubt that **face-to-face on-farm advisory activities stay key**, because they enable correct **tuning of the blended messages to the specific farm context** and ensure a **full understanding of the farm conditions** before advice and farm decisions are made. Face-to-face and on-farm work is also important for convincing/communication purposes and for giving the **farmer the opportunity to express his views** and give feedback on the received external information.

2. Many kinds of people are so-called “advisor”. What should be the criteria for being considered an advisor?

2.1. Impartial, having the competence and means to enhance the ability to change

Advice comes from an individual advisor, which may belong to an entity (private or public/small or big), with a conscious ambition to intervene so that the customer (broadly defined) improves his/her ability to change. The purpose is communication and an intervention in order to support change. This is only possible if the advisor has the competence and the means (f.i. financial resources) to do it. **The advisor should be impartial and not promoting a specific product or technology.**

One definition of extension/advisory services is that advisory services are 'conscious interventions in order to create better preconditions for change, carried through by an entity having the means and competence to do it'. Farmers may receive substantial and often valuable information from companies in the context of their commercial objectives. However, farmers need to be enabled to receive independent “advice” that is not part of a “product service” package.



2.2. Providing tailor-made knowledge tuned to the farm

It is important that the advisor provides **knowledge tuned to the specific farmer needs**. It is equally important that the advisor operates on a tailor-made basis, i.e. that he/she acts based on what the farm and the farmer would serve, which is perhaps is not necessarily what the farmer is expressing as his/her need, nor what the employer of the advisor may want.

An AKIS should be constructed with an open approach so as to benefit from new actors entering the system, coming from for instance the regional innovation systems, other sectors, etc... They will add their knowledge and experience to those of advisors, and this is hard to pre-define.

How the quality of the advice can be assured is an ongoing discussion among advisory organizations today, not least due to the implementation of new management concepts like Lean Production Philosophy (SE). It will be **hard to pre-define quality criteria for advisors as well as to delimit who are allowed to call themselves advisors**. A single unique EU certificate for advisors was rejected some years ago because there was a fear for lack of adaptation to local conditions and structures. **A code of conduct or guidance built among advisory services may be a useful initiative at EU level**. Also farmers' organizations may want to be consulted with a view to help ensuring that advice given is as relevant as possible to the realities faced by farmers.

3. How to shape an advisory system ready for the future?

3.1. Emerging new challenges

Beyond existing challenges for linear advising, following issues will have to be tackled for future advisory systems:

- 1) covering new needs (incl. innovation brokerage and market issues),
- 2) adapting to new farmers' profiles (new entrants, part-time or hard-to-reach farmers)
- 3) broadening access to information (incl. inter- and transdisciplinary cooperation/collaboration, use of ICT tools),
- 4) closing the gap between research and advisory services
- 5) promoting holistic approach to advice (connect technical advice to farm production profitability and market issues) and at the same time seek more specialized advice
- 6) linking to international networks to find knowledge and advisors with specialized competences where needed
- 7) need for receiving input from specialists from other countries on specific techniques

3.2. Key is to enable advisory services with hard and soft infrastructure for enhancing knowledge flows

The above mentioned pilot study on knowledge needs for young farmers shows that knowledge infrastructure and the educational systems are key, because **they enable the possibility to get 'real' impartial advice and sufficient quality of knowledge/advisory services**.

Therefore, the advisory services of the future should be enabled with **hard and soft infrastructure enhancing knowledge flows in the agricultural knowledge and innovation system** (the latter to be understood in the broadest way, including the whole bioeconomy and in particular connecting to other sectors and the regional and national innovation systems). It is important to build **cross-cutting** solutions because of ever changing challenges and the overall need for more interactivity. Not only farming knowledge counts, a lot can be learnt also from areas outside farming.



4. How should future policies and programmes make an enabling environment where advisors play an interactive role connecting between practice and science?

4.1. Strengthening support systems which enable advisors in their job

In research on advisory services a distinction is often made between front-office and back-office issues. “Front-office” relates to the advisors’ interaction with the customer (farmer) and “back-office” the **organizational support system that enables the advisors** to do a good job and develop their skills. **Many advisory organizations do not have strong back-office** processes (f.i., no development or innovation funding, no internal process support, no time allocated for developing skills in innovation, not enough contact with researchers and other AKIS actors, etc). This is becoming one of the **main bottle-necks** when trying to strengthen the AKIS. In order to compete effectively with sales representatives, public or private impartial agricultural advisory services require professional back-office support to gather information on innovative technologies, modern management and application of new ICT technologies. In order to be able to keep knowledgeable, impartial and experienced advisors continuing their job, correct wages, **career opportunities and promotion systems** are needed.

4.2. Public funding for market failures according to policies creating a level-playing field

How this might be overcome is a hard question, because one supposes advice to be financed by the receivers themselves. However, this is not happening, partly because of low profitability in farming, shrinking the market for high quality advice, and more and more importantly because of the hard competition with so-called private advisors, which are in fact staff financed by companies selling or buying products and technologies (see AKIS III first scenario). These companies see more and more an interest in what they call giving “advice”, because this is a very effective way to influence farmers’ decisions. Public funding should be considered when a **market failure** is present. For instance supporting disseminating research results and improving knowledge transfer techniques can take on some of the risk associated with development work. Additionally, education for advisors should be strengthened and publicly funded (cf. AKIS III second scenario).

Authorities should not act too “top down” when designing advisory systems. Individual countries and regions should be allowed to design their own organization of advisory services to meet their needs. Overarching structures however can help to **ensure quality throughout the EU and a level playing field** to make sure that all farmers are receiving the best advice possible, while at the same time strengthening the links between research and practice

5. How can collaboration and networking between researchers and advisors make knowledge flowing and stay public (i.e. avoid knowledge to become mainly privatized, the risk indicated in the first scenario of the AKIS III Foresight).

5.1. Develop approaches making knowledge generated with public funds better utilized and shared

The collaboration and networking among researchers and advisors needs to be improved and this could be supported by public funds. This **cooperation between universities, research institutes etc. and the advisory services** (along with other actors in the AKIS) **is key to ensure that new publicly funded knowledge stays public in the first place** and is broadly spread. Public authorities and research entities must be much more active in this area and facilitate interactive innovative



processes themselves to a higher degree. There must be a continuous monitoring and evaluation of how publicly funded knowledge is utilized and policies should be adapted according to the findings. Often so-called “leverage” (partly private financing of research), even in low percentages, leads to reduction in the sharing of the research results.

5.2. Improve connections for knowledge to be shared and developed further

Additionally, it is important to improve opportunities to connect actors creating and using knowledge better with each other so that they are able to find each other in order to share and develop the knowledge further. For instance, an open source approach for ICT tools incentivizes further innovation processes. New publicly funded knowledge should be shared, for instance online, and turned in a format that is comprehensible to all actors within the AKIS. Using additional channels beyond scientific journals which are often only shared within the research community, for instance EIP-AGRI practice abstracts, farmers’ journals or broadcasting, websites of advisory services, ministries or farmers’ organizations, etc... will improve impact. Researchers will need incentives to share the results of their work in an understandable, comprehensive and interactive way with advisors and farmers. Furthermore, various EU funds could be engaged to support introduction of ICT tools supporting advisors and in consequence also farmers.

6. How should interactive advisory services be structured, funded, trained and networked to move to a more interactive innovation model? How can continuity be guaranteed?

6.1. Advisory services are in crisis and need to be put high on the political agenda.

We need to **rethink the role of advisors, make them more central in AKIS, refinance them, support their training and reconnect them** to tackle current challenges. The role the government should take in this process needs to be re-considered. Government funding should be used in case of market failure.

6.2. The funding and organization of future advisory bodies should be made resilient through a mix of public and private funding.

Ensuring resilience of advisory bodies and improvement of the structuring of national/regional/local advisory services is urgently needed. The funding and organization of future advisory bodies should be made resilient through a mix of public and private funding while keeping their governance independent.

Coherent public governance of the interactions – in particular avoiding a complete governmental top-down “control” of advisory services - and incentivizing the whole AKIS system to this effect is necessary, while not crushing the private initiatives. Various Ministries need to be connected (linking Ministries of Agriculture, of Education, of Research, of Innovation, etc...). This could be done via transversal programmes, a jointly governed body or other approaches. It needs to be considered what should be the responsibility of the government and the private actors and how they should interact.

Providing continuity of staff in advisory bodies is key to safeguard (practical) competences of being lost or taken over by private companies for their own commercial purposes. It is considered not possible to build an advisory service on temporary projects, even if these projects may be very supportive to upkeep or build connections with researchers and other innovation actors, and provide some sort of training/awareness raising on arising issues or challenges for advisors.



6.3. Key elements for resilient advisory services are support and continuity for a publicly funded back-office which enhances knowledge flows.

The following elements are key for the organization of farm advisory services (including innovation support services with a focus on agriculture):

1. **Public support for a back-office strengthening links with research is needed.** This investment in knowledge infrastructure should be made available to all advisory services taking up front-office tasks because these influence farmers' decisions. The back-office support should be built with a view to support public policy goals such as improving research impact, dissemination and keeping agricultural education knowledge updated (basic education and vocational training), tackling issues related to public goods (water and waste management, climate change, biodiversity etc...), common management of ICT tools to avoid digital divides, etc..... This back-office approach should support continuity of staff in order to keep agro-food knowledge public, manage it and make it easily available. The back-office can enable thematic orientation where needed and get in intelligence from multiple sources. For instance, at certain instances, input from international specialists (not included in the national advisory services) may be needed for specific purposes, and could be catered for by the back-office which should have broader international connections.
2. **Input from researchers' work into this back-office needs to be organized.** An important part of the back-office is developing a "translation" from purely scientific language with limited practical application potential towards information which meets the receivers' capacities and is adjusted to the needs and requirements of farmers and advisors. The back-office at the same time could also be used to collect research needs from practice and give input for research and innovation programmes and policies.
3. In short, this publicly funded back-office should ensure **a high degree of connectivity in the AKIS system, in particular with researchers, advisors at other geographical levels, H2020 multi-actor projects and EIP Operational Groups** bringing in innovative knowledge, but also with suppliers of inputs, other parts of the chain, with policy makers and with the broader society. The examples of Agridea, SEGES, and Teagasc may already partially illustrate this, as well as the idea of creating a "Baltic Advisory Service". **A strong back-office is the basis.** Besides managing the necessary knowledge for front-office use, also networking activities for various purposes can be actively built by these back-offices, e.g. rural development networking, dedicated innovation platforms (groups with specified membership) as a meeting place, organizing various "agro-food communities" (no fixed membership groups but series of events where everybody is welcome) where farmers and other stakeholders can meet and where start-ups or innovative projects can be given a start, etc.
4. The back office should support the **front-office**, which is delivering general or specialized on-farm advice directly to farmers. The front-office is taking in questions and where needed guiding them to the specialists in the back-office. Public funding for the front-office activities may be appropriate in particular when geared to dedicated areas or specific policy goals, for instance advice on public good issues, climate change, waste and water management etc.
5. Support the **peer to peer learning between advisors** will be building trust among advisors in a world of changes and uncertainty



6. **Support for advisory team-leaders** who organize and train advisors both on skills (e.g. how to organize a field visit, how to handle difficult clients, etc...) and farm practices/technology/new crops etc. These team-leaders are multipliers of messages produced by the back-office but also carriers of e.g. messages with societal relevance which **deserve public support because of the leverage effect advisory services** have on the agricultural world. In Sweden, SLU and the competence centre RådNu is conducting research related to the transition to a more interactive and networked advisory service. The advisory organizations themselves sometimes have a bit too naïve answers to the questions (more money, better customers, stronger signals from society, etc...). However, the experience is that this transition is much a question of **organizational culture and the leadership of advisory organizations** (as well as of other supporting organizations). One measure is of course increased competence on many levels, but there is also a need for a space for experimentation of new approaches, etc. An advisory service needs to optimize the performance of the whole farm, not one branch, in a holistic approach.
7. **Innovation brokering.** Advisors are in continuous contact with their clients (end-users of knowledge) and are ideally positioned for capturing needs of the producers and **encouraging the building of interactive projects**, capturing innovative ideas from practice. They should be able to allocate the right person to the right problem **and connect complementary actors around a common objective tackling a practical problem or opportunity.**

7. Is this structuring of modern advisory services happening and if not, why is it or why not? Who should take what initiative? Which incentives are useful?

7.1. Install a reliable platform oriented to empowering end-users, creating enhanced interactiveness and knowledge flows.

Currently, **it is very difficult to find the best advisor and the best information.** For minor crops and specific themes, this is even more the case. A case illustrating this is that in Portugal knowledge on almonds is very much sought and even imported together with US business (Californian farmers are looking for Portuguese land), while simultaneously in Spain a 700 people seminar bringing public knowledge on almond production is being held without the Portuguese being aware of it. The EIP is providing big value in sectors which are minor in their region and for issues where quick learning is needed and can be made possible by the connectivity at EU level, e.g. emerging and innovative issues.

The information found on internet is not always qualitative or reliable, farmers need a quality check by impartial advising of high quality. EIP Practice abstracts could fulfill that role in the future AKIS infrastructure ("Agri-Wikipedia") on condition that sufficient investment is done in this unique EU database. Practice abstracts need to be produced and full information to end-users spread from all projects and all sources (national, regional and EU funded), not only OGs and H2020 multi-actor projects.

There is a need for a reliable, qualitative information platform of user-oriented information enhancing and creating more interactiveness. For the interactive aspect, one could think about initiatives such as the scoring system in e.g. "Booking.com", or producing 'likes' (Facebook) to give positive comments. **Quality checks will be needed** and such interactive system linked to each EIP practice abstract would be an asset to capture feedback, make advances and develop new issues/possibilities or solve additional problems found during or after the initial projects. This interactive platform should link to further research work. "Monitoring"/reflection on actions may induce feedback. Evaluation by the advisor on the actions taken by the farmer could feed into new interactive innovation projects and **create continuous innovation loops.**



7.2. Build an efficient, sufficiently open and comprehensive advisory system with a holistic approach

Building efficient advisory services in a region/member state requires a holistic approach, staying sufficiently open for in-flow from outside the main existing knowledge organizations and advisory bodies. New advisors may come into the sector from various backgrounds, covering certain gaps in the market, and we need to capture those coming in and accompany them to bring the wanted messages, e.g. by training, networking and other types of support. The necessity to keep their advisory system open and comprehensive was the reason why Cataluña has stopped using the CAP RD support for the advisory measure in the period 2014-2020. The use of public procurement does not function in a sector where there is no “market”: some advisors for small sectors are unique and needed in the knowledge system, but could not be included because they were deterred by the administrative burden of tendering. In a well-functioning AKIS system, connections with such unique advisors should be integrated, and not lost.

An AKIS should be built as comprehensive as possible, comprising all kind of advisors. A number of interesting initiatives beyond the classical publicly funded advisory structures which support this in-flow are arising in this regard, for instance the Irish ConnectEd services for non-farmer agricultural professionals, such as Agri-food businesses, veterinary services, accountants, solicitors, etc. Another interesting example is the Belgian Innovation Support Service which started with funding from a series of innovative projects undertaken by staff of the study service of the Flemish farmers’ organization 20 years ago. Meanwhile, the service evolved into an full blown advisory service whose only mission is to inspire innovation for farmers and rural actors, be it through informing and training or through innovation prizes and consultancy on both technological and more strategic and entrepreneurial issues. Flexibility is very important, stimulating mental openness and learning farmers to share also in regions where they are not used to do so for historical reasons.

7.3. Education and training for advisors

Lifelong education for advisors should be publicly funded, in particular in areas where education would not otherwise take place and where there is a societal demand for the outcome. Education programmes for advisors could be **commonly defined by advisors, education centers (like universities, training centres, etc.), and public institutions responsible for policies/programmes.** Systemizing such approach would support aligning advisors skills’ enhancement and messages to farmers related to policies, programmes and strategies focusing on agricultural development.

A too strong focus on non-technologic advisory skills in training of advisors is risky. To gain farmers’ trust, **advisors first need technological skills, and then soft skills.** If the advisor does not have sufficient technical knowledge, he will have difficulties to become trusted by the farmer.

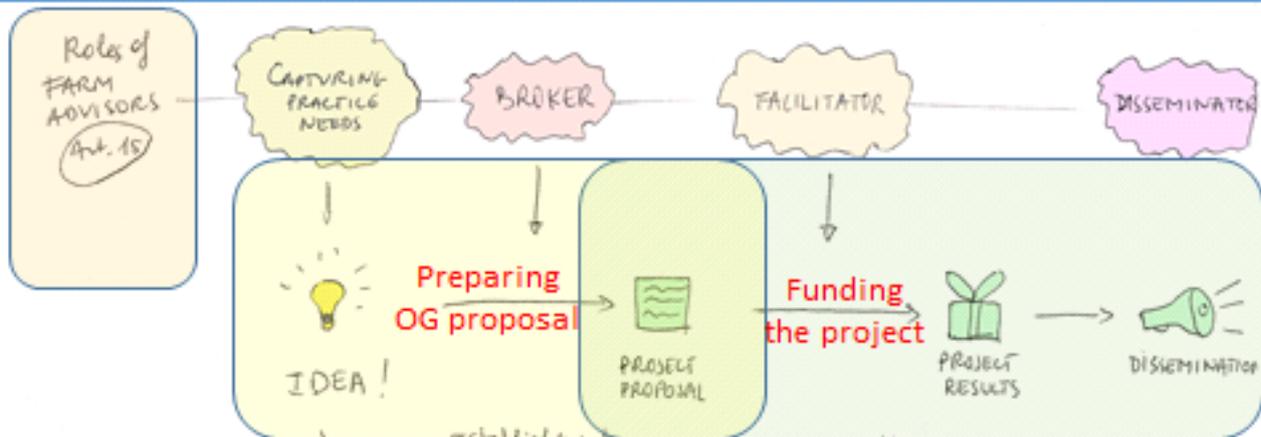
This also is an argument to connect advisors as much as possible into the AKIS. Advisory services should cover the needs of a variety of farmers, both small and large scale, as well as have a deeper understanding of agroecological & organic practices and production techniques and how these can be applied in the context of conventional farming systems. Advisors’ training on sustainability issues with agroecological focus should be fostered.

In many cases, specific advisory competences are missing (e.g. new techniques, new crops, minor sectors, drones etc...). **For building competence and practical courses on these novel issues for advisors, public funding is very much needed** since adequate impartial advising moves the collective intelligence of farmers ahead. For private impartial advisors, keeping up with the latest



Annex. Overview of advisors' new roles in interactive innovation processes

New roles for farm advisors in interactive innovation projects



Farm advisors' "coaching" role in interactive innovation processes:

- Capture practice needs
- Broker to set up interactive innovation projects
- Facilitate interactive innovation projects
- Dissiminate newly generated knowledge
- +?