



FAIRshare

DIGITAL TOOLS FOR FARM ADVISORS



D2.1: Framework for the Identification of Good Practices

Authors: John Hyland (Teagasc), Áine Macken-Walsh (Teagasc)

Technical References

Project Acronym	FAIRshare
Project Title	Farm Advisory digital Innovation tools Realised and Shared
Project No.	H2020 818488
Project Coordinator	TEAGASC
Contact	Tom Kelly (Tom.Kelly@teagasc.ie) and John Hyland (John.Hyland@teagasc.ie)

Deliverable No.	D2.1
Deliverable Name	Framework for the collection of Good Practices
Dissemination level*	Public
Work Package	WP2 – ‘Good Practice’ DATS development and use
Task	Task 2.1 – Co-design of a framework for the identification of ‘good practice’
Lead beneficiary	TEAGASC
Contributing beneficiaries	TEAGASC
Deliverable type	Other
Due date of deliverable	29 February 2020
Actual submission date	28 February 2020

v	Date	Beneficiary	Author
1.0	28/02/2020	TEAGASC	John Hyland (TEAGASC); Áine Macken-Walsh (TEAGASC)
2.0	30/08/2020	TEAGASC	John Hyland (TEAGASC); Áine Macken-Walsh (TEAGASC)

Table of Contents

1. Introduction	4
1.1. The Capitalisation Cycle	5
2. 'Good' Practice?.....	7
2.1. Definition of a Good Practice	7
2.2. The Importance of Sharing Good Practices	8
2.3. Good Practices and Advisory Services	9
3. Principles of Digital Development	11
4. Encouraging Diversity in Good Practices	13
4.1. Diversity.....	13
4.2. Good Practices 'Needs'	15
4.3. 'Hot Topics': Common Interests across Multi-Actor Networks	17
4.3.1. 'Hot Topics' Parent Categories Identified by FAIRshare Multi-Actor Consortium	19
4.3.2. Categorisation of Hot Topics	21
4.4. Hot Topic Subcategories.....	22
5. Good Practice Assessment Process	23
6. Conclusion.....	25
7. Appendix 1: Hot Topics Dictionary	27
Social	28
8. Appendix 2: Literature List.....	56
9. Appendix 3: Output from Good Practice Workshop	58

1. Introduction

T2.1/D2.1¹

A multi-actor co-design approach, involving different disciplinary and professional FAIRshare partners and each country's multi-actor FAIRshare network (see WP8), will identify the criteria for the identification and selection of **Good Practice** across Europe. This is to ensure that the most relevant and potentially impactful Good Practices are chosen. Cognisant that there is no superior 'best' practice capable of responding to all challenges, needs and contexts, an emphasis in the MA process will be placed instead on the ways in which DATS can be subjectively perceived as 'good' by actors working in different conditions and farming systems and how they can thus become embedded in different cultural contexts.

FAIRshare (Farm Advisory Digital Innovation Tools Realised and Shared) is a H2020 Thematic Network (2018-2023) which aims to engage, enable and empower farm advisors to use digital tools. Advisors play an important role in collecting, analysing and interpreting data for farmers. Hence, the potential of digitalisation in the agriculture sector is unlikely to be realised at the European level unless advisors are mobilised to take ownership of digital tools and advocate them to farmers and other advisors. It is vital therefore that efforts are made to enable advisors to engage with, use, and innovate digital tools in order to catalyse a digital transformation across both the advisory and farming communities. FAIRshare will gather an evidence based inventory of Good Practice pertaining to **Digital Advisory Tools and Services (DATS)** internationally¹. Furthermore, 'living laboratories' will be generated to empower advisor peers from across the EU to interact with the online inventory of DATs and, in a series of workshops, to exchange, co-adapt, co-design and apply digital tools.

This document presents the central deliberations underpinning the identification of 'Good Practices' in our attempts to balance the goals of:

- a) Identifying consistent criteria for recognising Good Practices across different contexts/countries and;
- b) Illuminating practices that are 'good' in ways that are actor and context specific, but which may nonetheless be transferable/adapted for transferability to other contexts.

¹ FAIRshare Grant Agreement p.101.

A multi-actor approach was utilised to collect criteria for identifying relevant and potentially impactful Good Practices. Additionally, key documents that identify characteristics of Good Practices concerning agriculture and digital advisory practices were reviewed. D2.1, presented in this document, identifies criteria which partners can use to identify Good Practices across the EU².

D2.1 presents the following key components (Table 1):

Table 1 Framework for the identification of Good Practices

Framework for the identification of Good Practices	
The Capitalisation Framework: first proofing of Good Practices	Understanding the process flow of Good Practice: proofing at the identification stage (using criteria below) before recording and eventual communication & sharing of Good Practices.
Collecting State of the Art Good Practices	Reflecting international state of the art knowledge of excellence in digital development, a Good Practice should meet at least three of the Nine Principles of Digital Development
Encouraging diversity in Good Practices	Ensuring that Good Practices are diverse where the following questions are concerned: who, why, what, when, when and how
Increasing relevance of Good Practices	Identification of the needs that DATS respond to, allowing advisors to eventually search the DATS inventory according to Needs Hot Topics
Capturing the Stories of Good Practice users	The 'user experiences' of advisors who have used Good Practice are particularly interesting and compelling for other advisors. We following the 'pearls and puzzles' approach to capture the insights and reflections of users.

1.1. The Capitalisation Cycle

Capitalisation is understood as a process flow that allows us to first identify **existing practices as 'good'** and then to use them to create **tangible "capital" of knowledge and improved performance**³. It is an iterative process through which an experience (with both successes and failures) is identified, valued and documented in various media.

² FAIRshare Grant Agreement p.101.

³ ENRD (2018) Making the most of project and good practice examples. ENRD Workshop on 'Project Examples and Good Practices: Approaches to Collection and Dissemination', Brussels.

The experience capitalisation cycle enables Good Practices to emerge and can be defined in five distinct steps⁴. We present these steps here to emphasise the need to first identify and proof practices as ‘good’, before moving on to research and record them. The criteria for what makes a practice ‘good’ in FAIRshare is discussed in the following sections.

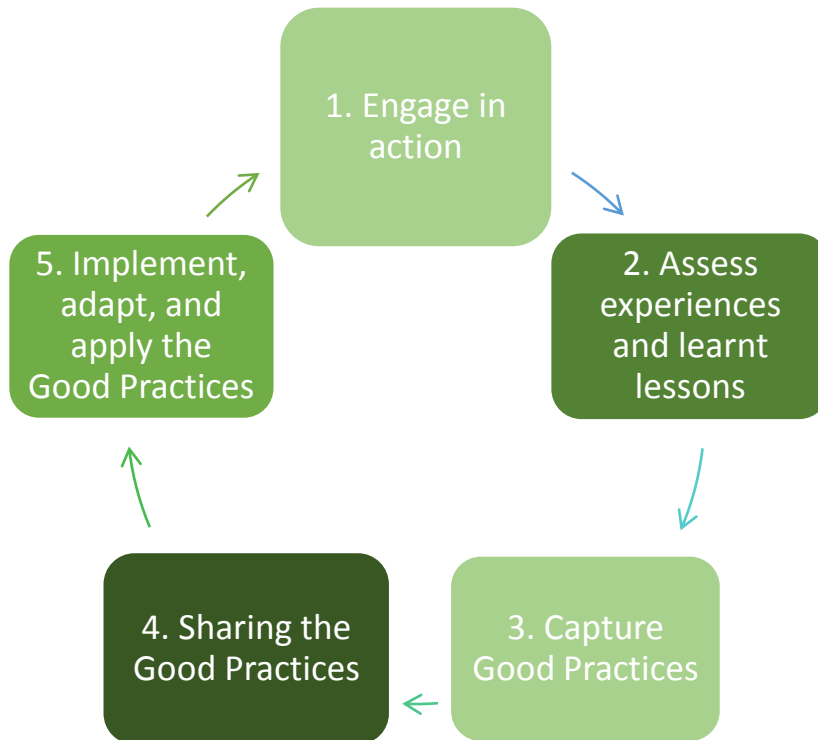


Figure 1 The Capitalisation Cycle

The first two steps of the cycle in particular refer to a framework for the identification of Good Practices. Step one regards taking the appropriate time to reflect on the practice under investigation. The second step builds upon the first and concerns the assessment of experiences and learnt lessons. The third step involves collecting information/data to capture the Good Practices. The fourth step involves sharing and the fifth involves a ‘living laboratory approach’ to supporting use of Good Practices. In regards to DATS, Good Practice capitalisation can also potentially develop a supporting infrastructure.

⁴ FAO (2013) Good practices at FAO: Experience capitalization for continuous learning. Rome: Food and Agriculture Organization of the United Nations (FAO).

2. 'Good' Practice?

2.1. Definition of a Good Practice

The term 'Good Practice' is used instead of 'Best Practice', as it is unlikely that there is a single 'best' approach that is applicable to all circumstances and situations. A practice described as 'best' may also imply that no further improvements are possible. Conversely, continuous improvement and innovation are fundamental to the concept of 'Good Practice'⁵.

Various organisations have offered their interpretations as to what exact criteria constitute towards a practice being 'good'; most notably the FAO⁴ and ENRD⁶.

FAO (2013)

"A good practice is not only a practice that is good, but a practice that has been proven to work well and produce good results, and is therefore recommended as a model. It is a successful experience, which has been tested and validated, in the broad sense, which has been repeated and deserves to be shared so that a greater number of people can adopt it"

ENRD (2018)

"Good practice" refers to strategies, programmes, projects, procedures, management and implementation practices that should be at least:

- Implemented with positive results;
- Successful, (innovative), tested and validated: it contributes to the improved performance of an entrepreneurship/farm/organisation and this contribution is recognised;
- Transferable: it can be adopted in and adapted to other contexts.

Both the FAO and the ENRD offer strikingly similar definitions of Good Practices. From their depictions we can confidently determine conceptually the specific criteria inherent to Good Practice in regards to Digital Advisory Tools and Services (DATS). A Good Practice therefore should: **have positive and verifiable results; be successful; and be transferable.**

⁵ FAO (2013) Good practices at FAO: Experience capitalization for continuous learning. Rome: Food and Agriculture Organization of the United Nations (FAO).

⁶ ENRD (2018) Making the most of project and good practice examples. Presentation at ENRD Workshop on 'Project Examples and Good Practices: Approaches to Collection and Dissemination'. Brussels: 8 Nov 2018.

A Good Practice should highlight the recognisable added value of a feature of a DATS for both advisors and farmers. Therefore, a Good Practice can be conceptualised as a key factor of any tools or service.

Definition of a FAIRshare Good Practice

A Good Practice in regards to FAIRshare refers to the critical success factors of a particular DATS in its development or use.

Any one DATS could therefore potentially have **a number** of associated Good Practices.

Remember when capturing a Good Practice you are not documenting the type of background DATS information already captured in the inventory. Rather you are capturing the critical success factors of a DATS, i.e.: its usability, data sharing, ability to be used offline, etc.⁷

2.2. The Importance of Sharing Good Practices

Documenting and sharing Good Practices allows people and organisations to learn from the experiences of others (e.g. peer to peer learning). The knowledge attained can be turned into action and thereby enables entities to increase their capacity to improve results⁸.

If no action is taken to identify, analyse, capitalise and share Good Practice, successful experiences may be overlooked and opportunities for improved practices may be lost. Consequently, replication in other locations becomes unlikely.

⁷ Refer to D2.2 to see potential Good Practices that may be applicable to a digital tool/service.

⁸ FAO (ND) How to capture and share your good practices in order to generate change? Available at: <http://www.fao.org/capacity-development/resources/practical-tools/good-practice-tool/en/> (Accessed: 07/02/2020).

The benefits of identifying and sharing Good Practice are that doing so will:

- Identify and replace poor practices
- Raise the performance of poor performers closer to that of the best
- Decrease the learning curve of new users
- Reduce rework and prevent “reinvention of the wheel”
- Cut costs through better productivity and efficiency
- Improve services
- Minimise organisational knowledge loss (both tacit and explicit)

The primary aspiration for discovering, documenting and sharing Good Practices is for them to more widely used and innovated by advisory services.

Communication and validation of Good Practice increases awareness and thereby fosters interest and knowledge, which in turn leads to attitudinal change.

Legitimisation of the practice follows which ultimately leads to implementation. The conceptualisation of the implementation process depicted above facilitates the identification of the communication entry points, which may for example be concerned with raising the awareness or the knowledge of particular Good Practices.

2.3. Good Practices and Advisory Services

Digitalisation presents challenges for both farmers and advisors because it requires new relationships, skills, arrangements, techniques and devices⁹.

Communicating and sharing Good Practices can support and foster use of DATS as well as further knowledge co-creation and innovation¹⁰. For advisory services to overcome the ‘digital divide’ they must draw lessons and experiences from peers who use DATS. Documenting Good Practices serves a pedagogical but also stimulating role in fostering innovative practices in a wider European environment.

⁹ Klerkx, L., Jakku., E., Labarthe, P. (2019) A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. *NJAS - Wageningen Journal of Life Sciences*, 90–91.

¹⁰ Blay-Palmer, A., Sonnino, R., Custot, J. (2016) A food politics of the possible? Growing sustainable food systems through networks of knowledge. *Agric. Human Values* 33, 27–43.

DATS have a particular role in agricultural extension. According to Davis et al. (2018, p.1) Good Practices¹¹:

- Contribute directly to the use of agricultural innovations to improve livelihoods and develop skills;
- Allow advisory services to be more effective and efficient, and contributes to the introduction of innovations to improve skills;
- Successfully engage farmers with approaches that are successfully adapted to fit local conditions and the institutional context to establish productive and profitable relationships.
- Embrace pluralism (the provision of advisory services by different types of organisations);
- Increase accountability to clients;
- Develop human resource capacity;
- Increase sustainability.

The promotion of Good Practices not only benefits advisors but also promotes digitalisation at the farmer level. Good practices, when shared, can create the basis for solidarity and accelerated digitalisation of advisory services.

¹¹ Davis, K., Bohn, A., Franzel, S., Blum, M., Rieckmann, U., Raj, S., Hussein, K. and Ernst, N. (2018) What Works in Rural Advisory Services? Global Good Practice Notes. Lausanne, Switzerland: GFRAS.

3. Principles of Digital Development

Technology providers and agricultural organisations all have a role to play in creating and maintaining a supportive and integrated ecosystem around digital tools for agriculture. The design and delivery of Good Practices follows an iterative and systematic approach, as recommended by the Principles for Digital Development¹².

The Nine Principles for Digital Development

- 1. Design with the User:** refers to the idea that the specific targeted users of the technology should be involved in co-design/co-creation.
- 2. Understand the Existing Ecosystem:** the technology should be compatible with local context and existing policies.
- 3. Design for Scale:** it should be ensured that the technology is used beyond the pilot phase.
- 4. Build for Sustainable Use:** the aim should be to reach a certain level of institutionalisation of the technology use, so that it keeps being used in the future.
- 5. Be Data Driven:** DATS should be designed so that data for decision making and monitoring can be collected. The collected data should then be used for these purposes.
- 6. Use Open Standards:** Open Data, Open Source, and Open Innovation: Whenever possible, open source technologies should be used in order to avoid spending scarce development cooperation funds on expensive licenses as well as reduce the dependence on a specific provider.
- 7. Reuse and Improve:** it might be possible to adapt technologies that are already used in a certain context instead of implementing something entirely new.
- 8. Address Privacy & Security:** a “careful consideration of which data are collected and how data are acquired, used, stored and shared” is required.
- 9. Be Collaborative:** experiences should be shared with other practitioners, users, experts, etc.

Source: <https://digitalprinciples.org/>

¹² Principles for Digital Development (ND) Available at: <https://digitalprinciples.org/> (Accessed on 19/02/2010).

The Principles for Digital Development are comprised of nine core tenets that are designed to help integrate Good Practices into technology-enabled programs. Adhering to these principles ensures that technologies are designed with the user in mind, privacy and security issues are respected and data is open, accessible and shareable¹³.

The Principles for Digital Development were developed to help reduce the occurrence of predictable and preventable failures in digitally enabled development projects and programmes. Hence, these principles can set useful standards for Good Practice, and can be used as evaluation criteria. **It is therefore recommended that each FAIRshare Good Practice adheres to at least one of the nine principles. However, ideally as many as possible principles should be adhered to.**

Whilst the principles are intended to guide practitioners in incorporating digital technologies into programmes they do not encapsulate the unique set of circumstances relevant to the digitalisation of advisory services. Therefore, the next section focuses on how to promote diversity in the FAIRshare inventory of Good Practices; and key themes within DATS which can be used to thematically organise Good Practices.

In conjunction with the aforementioned principles of particular relevance to digital advisory tools are data sharing and contractual agreements between data generators and digital providers. Hence, the CEMA joint code of conduct is highly relevant and informative in regards to Good Practices¹⁴.

¹³ AgriLinks (ND) Harnessing the Potential of Sensor Technologies for Agriculture. Available at: <https://www.agrilinks.org/blog/harnessing-potential-sensor-technologies-agriculture>. (Accessed on 19/02/2020)

¹⁴ CEMA, C. Copa, Fertilizers Europe, Ceja Ceettar, Effab Ecpa, E.S.A. Fefac (2018) EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement.

4. Encouraging Diversity in Good Practices

4.1. Diversity

It is important that Good Practices represent diversity where the following questions are concerned: Where, who, what, how, and why (Table 2)¹⁵.

Table 2 Questions used to brainstorm criteria for identifying relevant Good Practices

Where	Geographic location, farming systems (use as resources EU typologies / EIP-Agri web-database)
Who	Types of actors involved in design and implementation and their roles/networks; extent of use at farm level and characterisation of end users specifically (farm type; age; gender; educational attainment; networks etc.); institutions involved in design/implementation; AKIS contexts and networks of design; implementation advocacy & animation; use (national and international).
What	Using the vast repositories of e.g. the Thematic Networks platforms (i.e. Smart-AKIS platform, 4D4F platform) the types of ICT applications will be scoped such as: types of hardware, software; infrastructure, licences; levels of technology and innovation (incremental; bricolage radical); human resource (skills, capacities, knowledges); sectoral and non-sectoral/cross-cutting themes (using as a resource EU typologies)
How	Characteristics of user interfaces (e.g. real life or virtual); types of advisory approaches (e.g. online; one-to-one peer-to-peer); types of training/capacity building (e.g. study clubs; online forums); leveraging and use of networks.
Why	Motivations, objectives, goals, role of incentives and their used by advisory services/policy.

Figure 2 below (photos from 2019 annual meeting) illustrates outcomes of the multi-actor group work and the diversity of DATS identified (for more information please refer to the first annual meeting report). It is important that when each partner scouts for potential Good Practices (in stages 1 and 2 of the Capitalisation Framework), that diversity is sought in how Good Practices are selected for inclusion.

¹⁵Adapted from Macken-Walsh, Á.,(2016) D1.8 AgriDEMO:F2F Protocol for the Multi Actor Approach, p.5-7.

By taking into account the considerations presented in Table 2, partners are encouraged to select diverse rather than homogenous Good Practices where the questions of who, why, what, when, when and how are concerned.

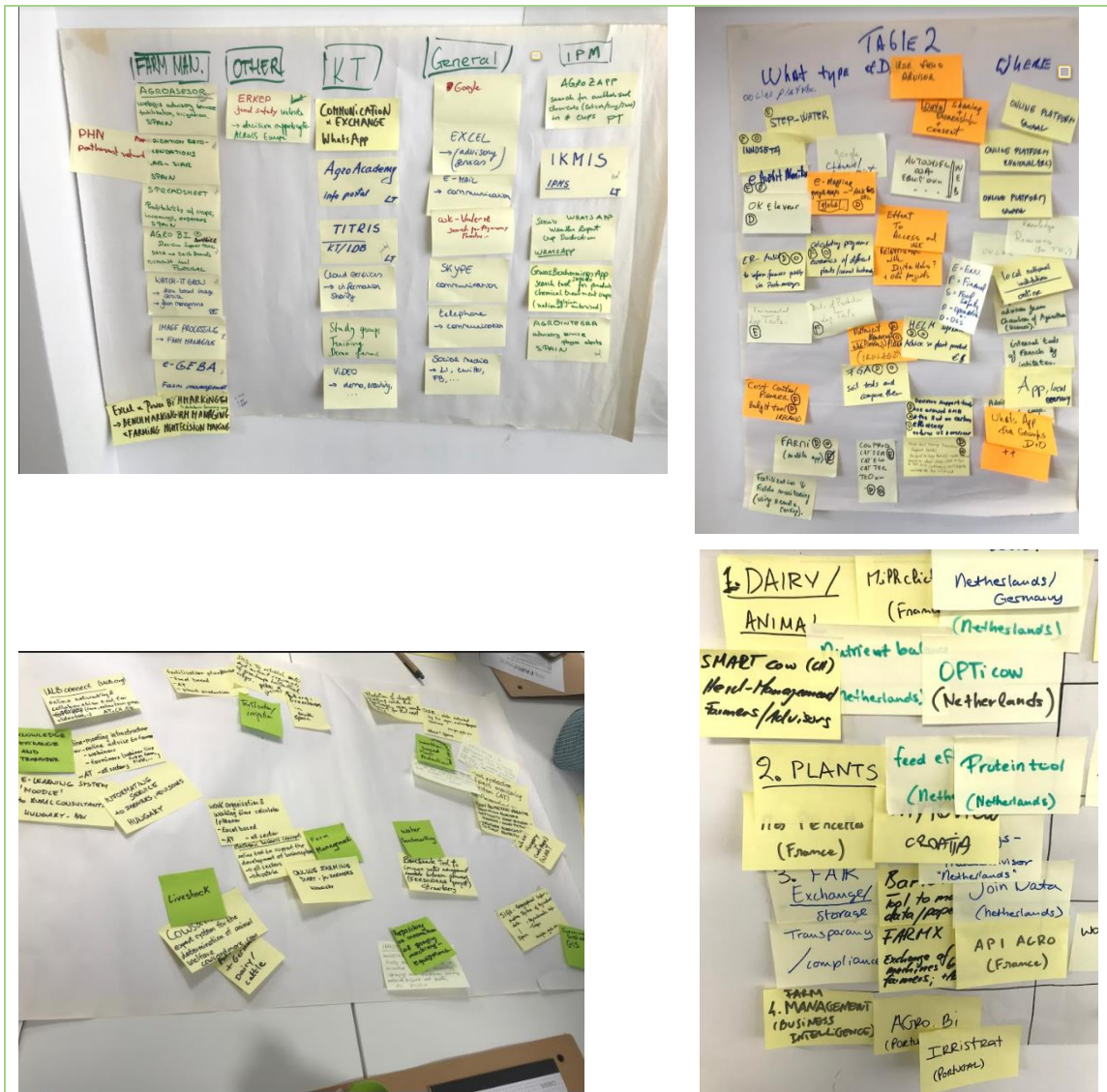


Figure 2 Outputs of the Good Practice workshop from 2019 annual meeting where four groups focused on the diversity of different types DATS (the ‘what’ of the framing process) – refer to 2019 annual meeting report for more detail

4.2. Good Practices ‘Needs’

DATS encompass a vast array of technologies, from relatively simple spread sheets to more complex decision support tools. The diversity of Good Practices therefore will reflect the needs of actors/stakeholders.

At the project Kick-Off Meeting (KOM) groups brainstormed diverse end users’ ‘needs’. Initially, a multitude of stakeholders were identified by project partners. Thereafter, a participatory exercise focused on what needs each stakeholder group would suggest as being important in terms of criteria for a Good Practice.



Figure 3 WP2 output from participatory matrix exercise at KOM: Who should be involved in defining the criteria for ‘Good Practice’ DATS and what might they suggest?

The findings from the KOM make it possible to begin to understand the needs of different actors/stakeholders and the criteria that they may consider as relevant for deciding what is a Good Practice (Figure 3). This was complemented by the outputs from RRI workshop and motivation workshop conducted at the annual meeting (refer to annual meeting report).

A Needs Register will capture on a [Google Sheet](#) partners inputs with regards what they deem as being relevant in terms of needs. **The Good Practice template should include ‘needs’ and in turn the Good Practice DATS inventory should be searchable by ‘needs’.**

Table 3 Criteria identified at the KOM on the criteria different actors/stakeholders may consider as relevant for deciding what is a 'Good Practice'

<p style="text-align: center;">Society</p> <p>For society, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Delivering better quality produce ● Environmental benefits ● Ensuring food safety ● Ensuring animal welfare 	<p style="text-align: center;">Policy</p> <p>For policy-makers, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Commercial benefits ● Environmental benefits ● Ensuring food safety ● Providing support measures ● Enabling data collection for evidence-based policy development
<p style="text-align: center;">Farmers</p> <p>For farmers, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Ensuring animal welfare ● Commercial benefits ● Competitiveness ● Practicality / usability ● Enhanced Quality of Life / social integration ● Delivering better quality produce ● Lower labour requirements ● Deliver better skills and competence 	<p style="text-align: center;">Private Businesses</p> <p>For private business, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Commercial benefits ● Delivering quality and traceability ● Ensuring animal welfare
<p style="text-align: center;">Input Suppliers</p> <p>For input suppliers, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Economic value ● Improved data collection 	<p style="text-align: center;">Extension</p> <p>For extension, the following criteria were viewed as important for defining 'Good Practice' DATS:</p> <ul style="list-style-type: none"> ● Economic benefit ● Lower costs ● Deliver better skills and competence ● Practicality / usability

4.3. 'Hot Topics': Common Interests across Multi-Actor Networks

FAIRshare does not aim to identify a one-size-fits all set of Good Practices but rather to communicate and share approaches that work so advisors can identify what is appropriate for their unique circumstances. 'Hot Topics' are recommended by the ENRD as a method for thematically organising Good Practices. With regards to FAIRshare Hot Topics refer to key themes pertinent to digital agriculture and form the basis of the identification of a Good Practice.

Our approach in this regard follows ENRD, which highlights that Good Practices should reflect 'Hot Topics' at regional, national and EU levels on the basis that such Hot Topics are likely to be more relevant to a wide variety of contexts and end-users. This supports the identification of transferable Good Practices (ENRD, 2014, p.29)¹⁶.

The transferability of a Good Practice is therefore dependant on Hot Topics relating to advisory digitalisation as well as the needs of actors/stakeholders. Capturing Hot Topics is consequently an important aspect of stages two and three of the Capitalisation Cycle.

Following the experience of Horizon 2020 Thematic Network SKIN, the identification of Hot Topics began with a review of important and current documents relating to FAIRshare¹⁷. WP2 task leads were invited to submit academic papers, reports and policies they deemed relevant to a depository in the project Share Drive. The documents were reviewed to identify recurrent Hot Topics arising (listed in [Appendix 2](#)).

The literature review was firstly used to confirm findings from the KOM (Table 3) and workshop outputs from the first annual meeting. At the 2019 FAIRshare annual meeting, multi-actor groups were facilitated to interrogate issues pertaining to DATS in preparation for co-designing a framework/criteria for the identification of Good Practices. Groups brainstormed DATS 'Hot Topics' at local, regional and international levels using the questions outlined in Table 2 ([Appendix 3](#)).

¹⁶ European Network for Rural Development (ENRD) (2014) Managing the Network, http://enrd.ec.europa.eu/enrd-static/app_templates/enrd_assets/pdf/guidebook/3.1.pdf (Accessed: 02/02/20).

¹⁷ Macken-Walsh, Á.,(2016) SKIN D2.1 Handbook for the acquisition of information and data on good practices and structure of the repository of information for the best practices.

Secondly, the literature review was used to capture and collect additional key themes that had been overlooked by partners during workshop settings. The literature review was followed by another multi-actor exercise explained in Section 4.3.2 which offered another opportunity for partners to evaluate, add, and omit Hot Topics.

The analysis of outputs from FAIRshare consortium workshops, as well as associated literature, demonstrated seven modular themes of DATS Hot Topics (Figure 4):

- Social;
- Environmental;
- Economic;
- Knowledge Brokering;
- Usability and Utility;
- Data Management; and
- Business, Legal, & Regulatory Frameworks.

4.3.1. 'Hot Topics' Parent Categories Identified by FAIRshare Multi-Actor Consortium

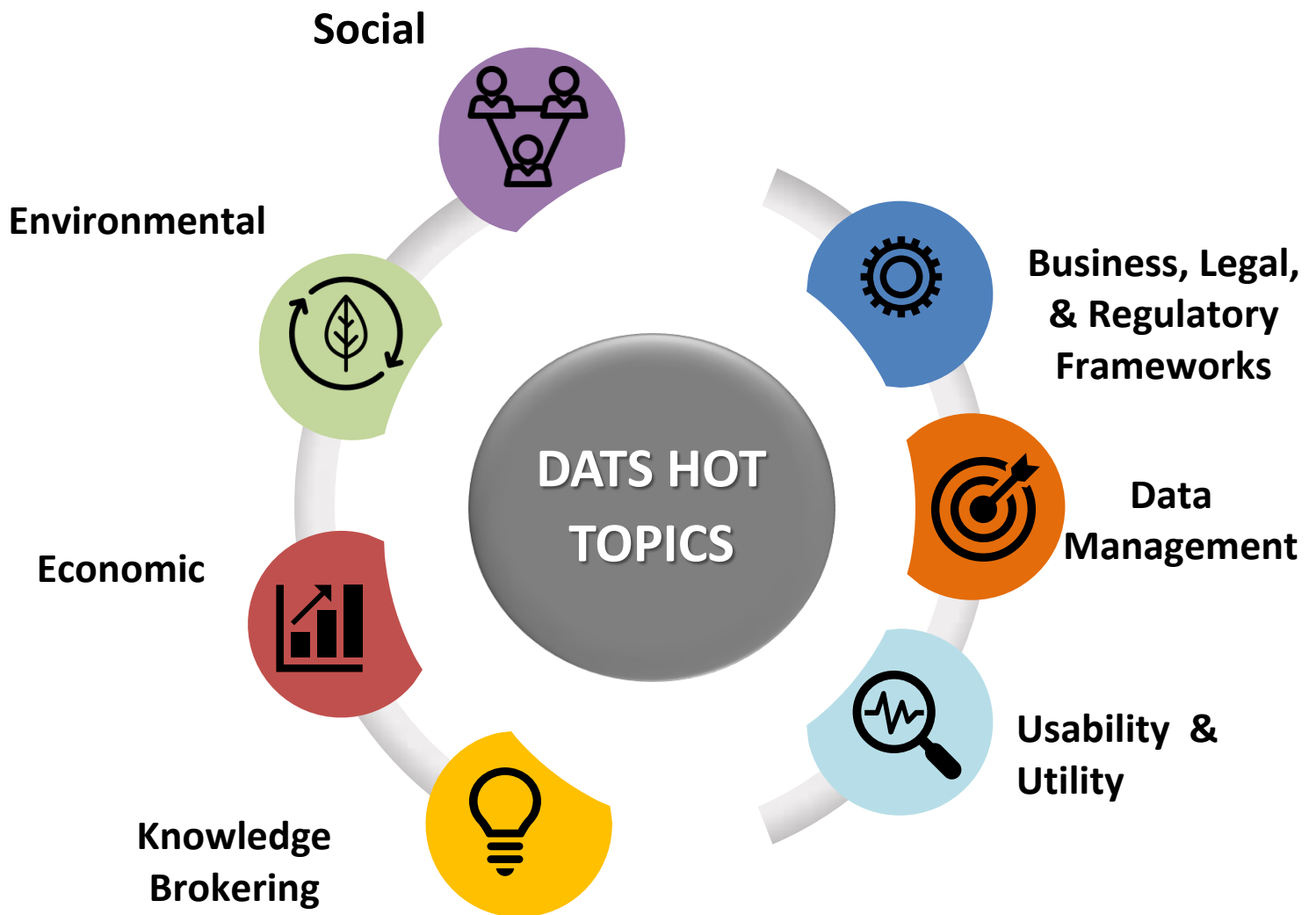


Figure 4 Overview of Hot Topic parent categories

*Click to access 'Hot Topics' categories

'Hot Topics' – of common interest to actors across the AKIS - are recommended by the ENRD as a method of thematically organising Good Practices.

4.3.2. Categorisation of Hot Topics

Within each of the seven parent categories of Hot Topics there were numerous subcategories. However, there were evident commonalities within the parent categories which required extraction to make the framework more usable. Therefore, a multi-actor online workshop was facilitated and the following groups invited: task leaders of WP2; the scientific and technical project subcommittee; the project management committee; and the leaders of the regional groups.

The workshop was conducted via Zoom and Pinup.com. Pinup is a free collaboration tool where you can share and save post-it notes online. An online card sort exercise was undertaken where participants were asked to sort the subcategories of each of the seven modular Hot Topic categories. Where similarities were established the subcategories were merged together. This served to condense the data collected via the literature and previous project workshops. The subcategories of Hot Topics identified can be viewed by clicking on each of the parent category symbols on Figure 1.

The framework enables project partners the opportunity to taxonomise Good Practices according to Hot Topics/key themes relevant to DATS.

4.4. Hot Topic Subcategories

Each of the seven parent categories of Hot Topic are comprised of a number of subcategories, who are in turn made up of smaller **primary** categories. These primary subcategories were identified from project workshops as well as literature. The primary subcategories can be viewed by clicking below on each of the subcategories. This will direct users to an Appendix where the Hot Topics Dictionary can be found.

Social

- User centred
- Gender and age considerations
- Improves quality of life for advisor/farmer
- Addresses societal issues

Business, Legal, & Regulatory Frameworks

- Business model
- Earning model
- Intellectual property
- Value proposition

Economic

- Advisory services level
- Farm level
- Macro level

Data Management

- Privacy & security
- Data application & presentation
- Data quality & reliability
- Data sharing capabilities
- FAIR principles applied

Environmental

- Management of natural resources
- Climate
- Environmental monitoring & control

Usability & Utility

- Contribution to the efficiency of service
- User usability
- Functionality
- Adaptability
- Improves decision making
- User friendliness

Knowledge Brokering

- Effective AKIS
- Enhanced knowledge exchange between advisors and farmers
- Enhanced knowledge exchange between farmers/advisors and research

5. Good Practice Assessment Process

A template for the collection of Good Practices will be designed for D2.2 and used as a guide by all partners so as to produce consistent information. Before inputting information into the template (D2.2) partners should be cognisant of the criteria that constitute a Good Practice specified in previous sections, to ensure diversity and optimise relevance of the Good Practices selected.

A Good Practice matrix provided on [Google Sheets](#) offers partners an opportunity to quickly access potential Good Practices (Figure 5). Partners can use the template and use it to guide their identification of Good Practices.

The scoring guide is presented in a table format on a 0 to 3 scale to show how Good Practices can be applied in an increasingly comprehensive.

A Good Practice is defined by having positive verifiable results; being successful; and being transferable. Therefore, Good practices should adhere to **ALL** of these three criteria (marked with an asterisk and coloured grey in the Google Sheet). In addition, a Good Practice should follow **at least THREE** of the nine Principles for Digital Development (purple coloured cells; online version). Ideally however, as many as possible of the nine principles should be adhered to. Users assign a score to each of the criteria from zero to three.

The matrix is a dynamic spreadsheet for partners to score Good Practice proposals along a series of statements that measure alignment with the definition of Good Practice and Digital Principles¹⁸.

The goal of the matrix is not to objectify Good Practice proposals, but rather to enable a thorough assessment of a Good Practice proposal before considering it for entry in the Good Practice template.

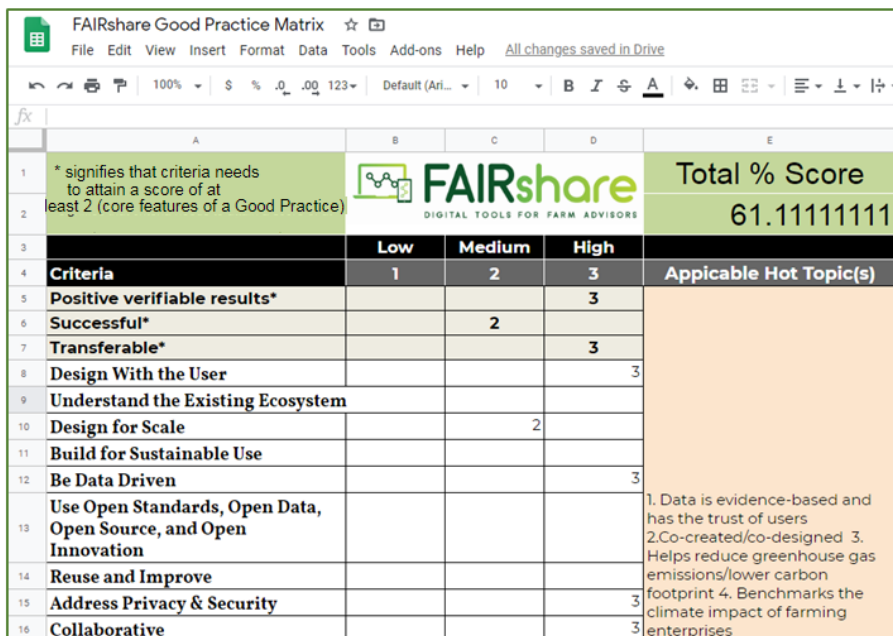
The first three cells of the matrix represent the three criteria necessary for a Good Practice, as per its definition. The nine following cells represent the nine Principles for Digital Development.

ALL of the three Good Practice criteria must attain a score of at least 2.

At least THREE of the nine principles must attain a score of at least 1.

The column on the right hand side of the matrix provides space to document associated Hot Topics related to the Good Practice.

The corresponding **primary** Hot Topics/key themes pertaining to the practice can also be captured on the [Google Sheet](#). The matrix provides an overall score to the practice in consideration based upon the information provided.



Criteria	Low	Medium	High	Applicable Hot Topic(s)
Positive verifiable results*	1	2	3	1. Data is evidence-based and has the trust of users 2. Co-created/co-designed 3. Helps reduce greenhouse gas emissions/lower carbon footprint 4. Benchmarks the climate impact of farming enterprises
Successful*		2	3	
Transferable*			3	
Design With the User			3	
Understand the Existing Ecosystem				
Design for Scale		2		
Build for Sustainable Use				
Be Data Driven			3	
Use Open Standards, Open Data, Open Source, and Open Innovation				
Reuse and Improve				
Address Privacy & Security			3	
Collaborative			3	

Figure 5 Google Sheet which can be used by partners to access a potential Good Practice

¹⁸ Adapted from Principles for Digital Development (2018), Digital Principles Maturity Matrix. <https://digitalprinciples.org/resource/digital-principles-maturity-matrix-for-program-design-and-proposal-evaluation/>

6. Conclusion

The objective of this deliverable is to present the central deliberations underpinning the identification of 'Good Practices' in an attempt to balance the goals of:

- a) Identifying consistent criteria for recognising Good Practices across different contexts/countries and;
- b) Illuminating practices that are 'good' in ways that are actor and context specific, but which may nonetheless be transferable/adapted for transferability to other contexts.

The framework developed firstly enables partners to understand the meaning of Good Practice and why it's important. The nine Principles for Digitalisation are then presented as further elements that should be considered when evaluating digital advisory tools. Thereafter the document depicts the framing process of who, why, what, where, and how which assists in capturing the needs of end-users.

D2.1 outlines how Hot Topics are suggested by the ENRD as particularly useful thematically organising Good Practices. Hot Topics were identified via relevant literature as well as from workshop outputs from project partner. In total seven parent Hot Topic categories captured the key themes related to Good Practices. The Hot Topic dictionary in Appendix 1 lists the primary subcategories associated with each respective parent category. A quick assessment tool is provided at the end of the document to help partners swiftly evaluate potential Good Practices. The deliverable adhered to the framework in the following manner (Table 4):

Table 4 D2.1 Implementation of the framework for the identification of Good Practice

Framework for the identification of Good Practices		Relevant Section(s)
The Capitalisation Framework: first proofing of Good Practices	Understanding the process flow of Good Practice: proofing at the identification stage (using criteria below) before recording and eventual communication & sharing of Good Practices.	Introduction The Capitalisation Cycle ‘Good’ Practice? Principles of Digital Development
Collecting State of the Art Good Practices	Reflecting international state of the art knowledge of excellence in digital development, the Good Practices should meet at least three of the Nine Principles of Digital Development	‘Hot Topics’: Common Interests across Multi-Actor Networks Appendix 2: Literature List
Encouraging diversity in Good Practices	Ensuring that Good Practices are diverse where the following questions are concerned: who, why, what, when, when and how	Encouraging Diversity in Good Practices
Increasing relevance of Good Practices	Identification of the needs that DATS respond to, allowing advisors to eventually search the DATS inventory according to Needs Hot Topics	Good Practices ‘Needs’ ‘Hot Topics’ Parent Categories Identified by FAIRshare Multi-Actor Consortium
Capturing the Stories of Good Practice users	The ‘user experiences’ of advisors who have used Good Practices are particularly interesting and compelling for other advisors. We following the ‘pearls and puzzles’ approach to capture the insights and reflections of users.	‘Hot Topics’: Common Interests across Multi-Actor Networks Appendix 1: Hot Topics Dictionary Good Practice Assessment Process

7. Appendix 1: Hot Topics Dictionary



Social

User centred

- Multi-actor: involve and reach different actors/stakeholders
- Co-created/co-designed
- User generated content
- Wide reach and interaction
- Maximizing human connections and networks for knowledge sharing
- Supports peer-to-peer and farmer-centered learning networks



Social

Gender and age considerations

- Equitable (to negate digital divide issues)
- The tool/service helps to connect women with advisory services
- Matches the skills and habits of different age groups

[Click here to return to Hot Topic diagram](#)



Social

Improves quality of life for advisor/farmer

- Improves farm working conditions
- Enabling farmer/advisor to have a voice
- Assists in implementing policies, frameworks and ways to monitor progress
- Helps users to satisfy legislative and market requirements
- Rebalancing bargaining power along the agri-food chain
- Lower labour requirements
- Delivers better skills and competence



Social

Addresses societal Issues

- Positive citizens' perception/reaction
- Reduce use of antibiotics
- Provide improved human-human interaction
- Food safety and traceability
- Improved human health
- Improved animal health & welfare
- Delivers better quality produce
- Delivers traceability

[Click here to return to Hot Topic diagram](#)



Economic

Advisory services level

- Cost effective to advisory services
- Holds commercial potential
- An ability to leverage the value of the data
- Reduced administration costs

[Click here to return to Hot Topic diagram](#)



Economic

Farm level

- Economic sustainability
- Increases competitiveness
- Increases farm efficiency
- Adds economic value to produce
- A novel product or product range
- What are ways that value can be added to the product
- Improves genetic performance
- Improves yield
- Promotes business development
- Promotion of farm produce/products
- Enhanced market access
- Reduction of risk



Economic

Macro level

- Territorial regeneration: capable of activating a different and new economy in the territory
- Market information
- Generates employment
- Greater prosperity for farmers, consumers, and society
- Enhanced economic growth
- Enabling rural innovation

[Click here to return to Hot Topic diagram](#)



Environmental

Management of natural resources

- Helps improve water quality
- Increases/promotes biodiversity
- Improves soil health (i.e. increases soil carbon)
- Assists in the efficient use of resources
- Helps manage grassland
- Nutrient management

[Click here to return to Hot Topic diagram](#)



Environmental

Climate

- Helps reduce greenhouse gas emissions/lower carbon footprint
- Calculates/captures climatic impact (i.e. carbon footprint)
- Promotes climate change adaptation
- Benchmarks the climate impact of farming enterprises

[Click here to return to Hot Topic diagram](#)



Environmental

Environmental monitoring & control

- Integrated pest management
- Assists in the implementation/development of environmental policies and regulations
- Used to account/monitor attributes relevant to the environment
- Pest control forecast

[Click here to return to Hot Topic diagram](#)



Knowledge Brokering

Effective AKIS

- Improved monitoring of advisory services
- Improves knowledge management
- Encourages increased dialogue between AKIS actors
- Enables collaboration, sharing and partnership among advisors
- Integrates with other conventional extension methods
- Supplements the role of the advisor
- Facilitating capacity development of farmers, advisors and other AKIS actors

[Click here to return to Hot Topic diagram](#)



Knowledge Brokering

Enhanced knowledge exchange between advisors and farmers

- Uses verbal and visual communications
- A social media policy
- Content created and adapted from reliable and trusted sources
- Training is provided
- Improves educational outcomes
- Timely information delivery
- Develops dynamic and demand driven knowledge sharing activities for different stakeholders
- Documents good agricultural practices and shares them
- Provides insights into successful/unsuccessful practices



Knowledge Brokering

**Enhanced
knowledge
exchange between
farmers/advisors
and research**

- A focus on applied research and development
- Links advisors to research
- Exchange enabled between farmers and research

[Click here to return to Hot Topic diagram](#)



Business, Legal, & Regulatory Frameworks

Business model

- Replicable/transferable/scalable in similar and/or different contexts
- Employs a 'systems' approach to design, considering implications of design
- A strategic approach taken to development rather than ad-hoc
- Proficient marketing

[Click here to return to Hot Topic diagram](#)



Business, Legal, & Regulatory Frameworks

Earning Model

- Free to use for enterprises
- IT support provided
- Free access to anonymous data

[Click here to return to Hot Topic diagram](#)



Business, Legal, & Regulatory Frameworks

Intellectual Property

- Terms of liability & intellectual property rights clearly laid out in contract
- An agreement that cannot be amended unilaterally
- 'Option to be forgotten': data permanently deleted
- Consent systems are in place and respected
- Terms & Conditions easily understood by end-user
- Transparency about the terms of use in data licence
- Clear definition of data ownership
- Simplify agreements and processes related to data
- Contract cannot be amended without the prior consent of the data originator
- Ability to agree/disagree with sharing data with other parties
- Clarity about who can access data



Business, Legal, & Regulatory Frameworks

Value proposition

- Strong business model in place
- Data originators fully aware of the potential uses of their data
- Benefit-sharing between users (i.e. data contributors) and data aggregators
- Considers the ethical threats presented by the collection and sharing of farmers' data
- Responsible Research and Innovation approach implemented

[Click here to return to Hot Topic diagram](#)



Data Management

Privacy & security

- Data Protection Officer appointed
- Data is private
- Updates on security breaches
- Assesses and mitigates risks to the security of users and their data
- GDPR compliance
- Regular backup and recovery protocol to prevent data losses
- A contract that acknowledges the rights of all parties to protect sensitive information

[Click here to return to Hot Topic diagram](#)



Data Management

Data application & presentation

- Ability to create, document, store, retrieve and manage data
- Statistics provided of collected data
- Managing and integrating large datasets of diverse farm production parameters
- Tool/service is data driven - Uses real-time information to monitor and inform
- Framework/infrastructure to combine disparate digital datasets (i.e. spatial and temporal) for integrated analyses
- Collecting, analysing and integrating data into whole farm planning advice
- Ability to retrieve own data in a usable format

[Click here to return to Hot Topic diagram](#)



Data Management

Data quality & reliability

- Data is evidence-based and has the trust of users
- Suitable data standards
- Data is automatically uploaded
- Data categorisation and filtering
- Data is reliable
- Improved data collection
- Data is attained from a validated and trustable source

[Click here to return to Hot Topic diagram](#)



Data Management

Data sharing capabilities

- Data is available to share to data users or third parties
- Dedicated agricultural data governance scheme that allows sharing of different types of data
- Data can be aggregated
- Generate and/or draw on open data

[Click here to return to Hot Topic diagram](#)



Data Management

FAIR principles applied

- Data is findable
- Data is accessible
- Data is interoperable
- Data is reusable

[Click here to return to Hot Topic diagram](#)



Usability & Utility

Contribution to the efficiency of service

- Mobile app that compliments existing advisory service
- Able to access multiple services on one platform
- Automated communication
- Visualisations used to reduce information overload
- Contributing to systematic monitoring of advisory services and process optimisation

[Click here to return to Hot Topic diagram](#)



Usability & Utility

User usability

- Flexible design
- User generated content
- Content and design are user-centric
- Blended integration of technologies such as web portals, videos, voice, pictures and animations
- The use of a Content Management System (CMS)
- Encourages users to self-identify poor performance and to report this to the administrator
- Interactivity through discussion forums, opinion polls, page rating, live search, surveys, feedback form etc.
- Has a broad-base of information
- Inter-sectoral

[Click here to return to Hot Topic diagram](#)



Usability & Utility

Functionality

- A well-defined structure
- Use of Geographic information systems (GIS)/Global Positioning System (GPS)
- Automatic communication between digital platforms
- Portability: can be used off-line
- A mobile app which is 'mobile friendly' across operating systems

[Click here to return to Hot Topic diagram](#)



Usability & Utility

Adaptability

- Applicable to all scales of farming
- Ability to customise content
- Available in more than one language
- Reassessment vs development: Built on existing services rather than new ones
- Uses an open source platform/software

[Click here to return to Hot Topic diagram](#)



Usability & Utility

Improves decision making

- Accurate and real time information
- The transfer of data into usable information for a decision support system
- Applies benchmarking

[Click here to return to Hot Topic diagram](#)



Usability & Utility

User friendliness

- Easy to learn and implement
- Good IT skills not necessarily required
- Compatible across all browsers and devices
- Notification alerts
- A contact point to assist with queries
- Fits end-users workflows
- Match closely with existing habits of advisors/farmers
- Affordable: Free or minimum charge for access

[Click here to return to Hot Topic diagram](#)

8. Appendix 2: Literature List

Ayre, M., Mc Collum, V., Waters, W., Samson, P., Curro, A., Nettle, R., Paschen, J.-A., King, B., Reichelt, N., (2019). Supporting and practising digital innovation with advisers in smart farming. *NJAS—Wageningen Journal of Life Sciences*, 90–91.

CEMA (2020) Full deployment of agricultural machinery data-sharing: technical challenges & solutions. Brussels: CEMA.

CEMA, C. Copa, Fertilizers Europe, Ceja Ceettar, Effab Ecpa, E.S.A. Fefac (2018) EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement.

CEPS and BCFN, (2019). Digitising Agrifood: Pathways and Challenges. Brussels: Centre for European Policy Studies (CEPS) and Barilla Center for Food & Nutrition Foundation (BCFN).

Davis, K., Bohn, A., Franzel, S., Blum, M., Rieckmann, U., Raj, S., Hussein, K. and Ernst, N. (2018) What Works in Rural Advisory Services? Global Good Practice Notes. Lausanne, Switzerland: GFRAS.

Eastwood, C., Ayre, M., Nettle, R., Dela Rue, B., (2019) Making sense in the cloud: Farm advisory services in a smart farming future. *NJAS—Wageningen Journal of Life Sciences*, 90–91.

EC (2019) Preparing future AKIS in Europe: Standing Committee on Agricultural Research (SCAR) 4th Report of the Strategic Working Group on Agricultural Knowledge and Innovation Systems (AKIS). Brussels: European Commission.

EIP-AGRI, (2018) Shaping the digital (r)evolution in agriculture. Brussels: EIP-AGRI.

Fielke, S. Taylor, B., Jakku, E. (2020) Digitalisation of agricultural knowledge and advice networks: A state-of-the art review. *Agricultural Systems*. Doi: <https://doi.org/10.1016/j.agsy.2019.102763>

IFA (2019) Digital Agriculture Technology Adoption and Attitudes Study. Dublin: Irish Farmers Association.

Ingram, J., Gaskell, P., (2019). Searching for meaning: co-constructing ontologies with stakeholders for smarter search engines in agriculture. *Njas - Wageningen J. Life Sci.* <https://doi.org/10.1016/j.njas.2019.04.006>.

Jespersen, L.M., Hansen, J.P., Brunori, G., Jensen, A.L., Holst, K., Mathiesen, C., Nalberg, N., Rasmussen, I.A., (2014). ICT and social media as drivers of multi-actor innovation in agriculture - barriers, recommendations and potentials. Chapter 6 in *Agricultural Knowledge and Innovation Systems Towards 2020: - an Orientation Article on Linking Innovation and Research*. EU, Brussels.

Klerkx, L., Jakku, E., & Labarthe, P., (2019). A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. *NJAS—Wageningen Journal of Life Sciences*, 90–91.

Regan, Á., 2019. 'Smart farming' in Ireland: a risk perception study with key governance actors. *NJAS—Wageningen Journal of Life Sciences*, 90–91.

Rose, D.C., Sutherland, W.J., Parker, C., Lobley, M., Winter, M., Morris, C., Twining, S., Ffoulkes, C., Amano, T., Dicks, L.V., (2016). Decision support tools for agriculture: towards effective design and delivery. *Agricultural Systems*, 149, pp. 165-174.

SPORE (2019) Digitising Agriculture - Bridging the Gender Gap. Brussels: Brussels Development Briefing.

9. Appendix 3: Output from Good Practice Workshop

Table 5 Outputs from the Good Practice participatory exercise at the 2019 annual meeting (refer to meeting report for further details)

What/Where	How	Who	Why
Financial (e.g. e-profit monitor (IRE). Cost of Production (FR), Cost Control Planner (IRE))	Web/spreadsheets/data exchange between advisor and farmer	Advisors, farmers, students	Benchmarking physical and financial: optimising management
Environmental (e.g. Step Water (Global), Innospta (Global), Cap'Zer (FR), NMP (IRL))	Web Advisors	Advisors, farmers, manufactures, service providers Advisor only	Water quality Food safety Environmental regulations Monitoring and evaluation
Decision Support Systems & Operational Systems (e.g. soil testing, ER mobile, OK E/EVPUR)	Web, demo farms Mobile app Both	Advisors Students Farmers	Improve production and sustainability Diversity To make informed decisions Better, improved, faster Empower the farmer
Safety – Animal welfare (e.g. AMR sensors to monitor animal health)	Web	Advisors Farmers Students	To reduce antibiotic use
Benchmarking (e.g. ICBF (IRL), Diapason (FR))	Breed index	Advisors Farmers Students	To improve genetic performance

What/Where	How	Who	Why
Farm Management	Virtual > real life One-to-one advisor to farmer	Advisors interacting with farmers	Efficiency: time management Business development More effective advice
Knowledge Transfer	Virtual < real life but it facilitates peer-to-peer learning	Wide range of actors, farmers included	-Opportunity to involve and reach different stakeholders -Efficiency
Integrated Pest Management (IPM)	Virtual > real life Online	Advisors Farmers	More accurate and real time information
General DATS	Virtual > real life Online and one-to-one	Advisors Farmers (young)	-Free apps and tools -User friendly -Reach a huge audience (i.e. Facebook group)
Other	Virtual	Policy makers Experts food safety	- To monitor food safety
Animal	Online One window approach	Farmers NGOs Advisors	Decision making
Plants	Advisors Face-to-face meetings between farmers and advisors	Advisors	Timely information delivery

What/Where	How	Who	Why
FAIR exchange/storage; Transparency/Compliance	Peer-to-peer between farmers or advisors Focus groups Working groups Technology apps: WhatsApp Viber Skype	Advisors Stakeholders Digital industries	Add more value to the farmer New value/opportunities Data as an asset and notification alerts
Farm management (business intelligence) (e.g. AGRO BI & Irristrat Portugal)	Technology apps: WhatsApp Viber Skype	Government	Improve efficiency Monitoring
Knowledge exchange and transfer/Transparency and	Online Initial training required and promotion of use	Advisor to advisor Advisor to farmer Experts to advisors Policy makers to advisors	Keep up to date Exchanging with peers Statistics collected data Effective in giving advice Gathering clients demands Increase digital communication

What/Where	How	Who	Why
Weather based plant protection and crop development	Data comes from real life (e.g. fields, weather forecast stations) Farmers and advisors can access it online Used by advisors in face to face settings	Mixed (advisors and advisors) Other service providers (e.g. machinery rings, cooperatives)	Improve decision making To develop and implement an evidence/data based risk management strategy Up to date information Authentic
Farming system GIS	100% online Big farmers (they have the scale) Precision farming	Advisors Institutions involved in processing data	Definition of farm transformation Environmental Impacts
Water Benchmarking	Water flow meter automatically uploads data to system	Growers and advisors Strawberry Production	Improve management for the grower Identifying reasons why something works (or doesn't work)