

# Unlocking the potential of digital farming

The Teagasc FAIRshare project is closing the digital divide in agriculture and helping farmers achieve their viability and sustainability targets

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**D**igitalisation has changed the way many services are delivered, but in agriculture a wide gap (digital divide) still exists both at advisor and farmer level. This gap has been identified as a major barrier affecting the sustainability of farmers and the quality and efficiency of the services provided by advisors.

Teagasc has led FAIRshare, an EU H2020 project, which supports digitalisation of advisory services and digital innovation on European farms. The project identified Digital Advisory Tools and Services (DATs) and aimed to make them 'Findable, Available, Interoperable, Reusable and Shareable' (FAIR).

It also identified good practice in digitalisation and the barriers and opportunities around digitalisation of advisory services and their use by advisors and farmers.



Advisor Colm Doran, pictured with farmers from the Gorey 2 Macamore Discussion Group, says iPads are extremely useful at group meetings as well as during one-to-one consultations



An inventory (library) of over 300 DATs was assembled and FAIRshare implemented two main actions. The first was engaging advisors to talk about the tools and services they use and to share them with others. The second action was improving advisors' access to, and use of, digital tools and digital skills.

As the project comes to an end this year it is worth reflecting on its achievements. FAIRshare funded over 40 advisory services across Europe to address specific needs. These needs varied from country to county across a range of public and private advisory services.

## Robust tablet computers

In Ireland, two services were awarded funding. Teagasc trialled the use of robust 5G tablet computers for on-farm access to online services. The Agricultural Consultants Association (ACA) trialled the use of a slurry storage calculator.

Some advisors had the opportunity to travel to other countries, meet other advisors and share their experiences and know-how. It was also reassuring that many advisors were able to find useful tools in the FAIRshare inventory and adapt them for their own use.

For example the Croatian Service



adapted the AHI mastitis cell count CostCheck calculator for their advisors.

All in all, we can say that advisors in Ireland have access to excellent digital tools supported by Teagasc, the DAFM, ICBF and farm software companies.

Apart from the sharing and adaptation of the digital tools and services, FAIRshare also produced a set of animated videos to highlight digitalisation good practice and a bank of training supports to help upskill advisors and farmers. These are available now at <https://fairshare-pnf.eu/>

Bringing digital services out of the office and into the field and farm offers a huge opportunity to support farmers with better and more specific advice and information,

This helps in planning and operational decisions and the analysis of data specific to every animal, crop, field and farm.

Over the last 20 years we have seen many examples of this in cattle breeding, nutrient management, grassland management, animal and crop disease prevention, and financial management.

In more recent years, we have seen that data from farms provides evidence of compliance with stricter regulation and voluntary environ-

mental standards. There are obvious concerns about the amount of data generated and stored and how this might be used in future. However, the general view in the EU is that digitalisation will bring far more benefits than risks. It has a vital role in helping advisors and farmers address the challenges facing the industry.

The FAIRshare project helped two Teagasc advisory regions to trial new tablet computer devices with built-in internet connectivity to bring digital solutions to the farm and field. Teagasc now supplies advisory staff with two vital pieces of equipment, a laptop computer and a mobile phone.

The organisation supports users across research, advisory and training with standard models. This makes it easy for maintenance, security and

is cost efficient. The difficulty with laptops is that they are not field or farm friendly and are not dependable for connectivity to the web.

### Connectivity

And while mobile phone technology has advanced to have much better connectivity in the farm or field, these have small screens and far less computing functionality.

A project business case was developed by advisors and the regional managers to introduce, on a trial basis, 5G enabled laptops or tablet devices which would better serve the need of advisors whether working in the office, in the field or farm or any other location.

Advisors specified that these needed to be robust, waterproof, with touch screen, good battery and camera, be capable of running Windows and have good internet connectivity in the field.

A lot of effort was made to make the change and the work is ongoing. On page 32, we look at the experience to date of some of the advisors and farmers participating in the trial.



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## 'Using these devices means any location can become an office'

Teagasc advisors and client farmers give their feedback on how the FAIRshare project and 5G tablets' trial has helped their work in the field

### Nigel Kennington: Waterford / Kilkenny Region

"The project has allowed me to make better use of digital tools on farms. Having all the available information and data at our fingertips in the field makes for better interactions and engagement.

"I am learning all the time, and there are a lot of things that you wouldn't realise you can do until you start to try them out. The tablet devices allow for very visual presentation of the information we deliver to farmers and have encouraged me to be more creative in how I deliver these messages. It is also very interesting to see what tools other countries are using to aid their advisory services."

"It would be great to see more of the digital tools being combined together. There is a lot of information out there, the more that we can bring together the better we can make use of them. From both the advisor and the farmer's perspective if information sources are linked up it will give greater scope to allow for better decisions on farm."

### Aine Butler: Waterford /Kilkenny region

"The new notepads have allowed me to give a lot more practical advice to clients in the field. It raises the discussion to a new level by allowing us to look at cattle in the field or shed and relevant ICBF data at the same time.

"Also, for scheme mapping online drawing of features and their location is improved as many maps are not up to date. Doing it in the field or farmyard live saves time and improves accuracy."

"Farmers really only start to see the value of digital applications when they are used with them on the farm. Seeing is believing."

"I would like to be able to use more apps which are available on phone on the 5G enabled laptops.

Aine's client farmer, Catherine Fleming from Mullinavat, Kilkenny, says: "It's a great help to be able to have a detailed discussion with Aine in the field looking at individual animals data on a fully live ICBF system, there is so much useful information there relevant to replacements and culling."

### Jack Murphy: Wicklow/Carlow/Wexford

"The in built 5G sim card allows for any location to become an office, be that a field, out-farm, a kitchen table or the car. The touch screen zoom function makes it easier for the farmer to read documents or correspondence that I can pull up relating to a particular topic."

"It really is down to the user's willingness to utilise the tablet as it is intended to be. Even though the keyboard is attachable it is important to remember that you need to use it as a tablet first and foremost for better engagement."

"If the app versions that we have on our mobiles, such as Agrisnap, could be used on the laptop it would be a massive benefit. Both to us from a practical point of view and for showing the farmer information."



**Fieldwork:** Teagasc advisor Jack Murphy and Wexford farmer Cathal Breen discuss genetic data for suckler cows on the Breen farm in Killenagh, Gorey.

"It's particularly useful to be able to go to the Teagasc or any other website with Jack when we are in the field," said Cathal Breen from Killenagh, Gorey, Co Wexford who produces beef in partnership with his father Pip.

### Colm Doran Wicklow/Carlow/Wexford

"The 5G enabled laptop offers greater flexibility to use it on farm or at meetings without having to rely on WiFi. The faster connectivity and quicker access to online resources means I'm more inclined to use it during a farm visit if there is a query that can be looked up or addressed online.

"When the tools are available to access and complete work on site, it can help cut down on office work and sending correspondence after a farm visit or group meeting."

"Almost as important as having the new tools themselves is the support from Teagasc ICT which is needed to utilise the resource as best as possible. For our group, meeting with members of the Teagasc ICT team every few months proved very beneficial."

"Any farmer I have used the technology with has been positive about the development. They're especially interested when an item of research can be pulled up while talking to them, or when I show information from PastureBase or ICBF relating to their farm."