DEMETER Farmer Survey

DEMETER farmer survey results

Earlier this year we sent a survey to the farmers actively trialling hardware and software in the DEMETER pilots to better understand their needs, interests, and concerns regarding the DEMETER project and in terms of the wider category of smart farming technologies. This survey was translated into the local language of the pilot farmers and shared with them via email.

In total, 29 responses from DEMETER farmers were received, of which 90% were male and 10% female. The median age of respondents was 30-39 years. The geographic location of responses was spread across the EU including Belgium, Czech Republic, Georgia, Germany, Greece, Italy, Montenegro, Poland, Romania, Serbia, Slovenia, and Spain. Almost 80% of farmers were educated to university degree level. In terms of farm ownership 69% of respondents were operating in a family farm, followed by 14% who work in a corporate farm. Only 21% of responders were part of a cooperative but 55% were part of a farmers' organisation.

Respondents were from a mix of agricultural sectors: fruit and vegetable production (grapes, apples, nectarine, blueberry, potatoes, olives, gherkins), livestock (dairy, pigs, and poultry), arable crops (maize, rice, and cereals) and beekeeping.

The farm size was mixed with 31% of respondents indicating a farm size of less than 5ha, 28% from 5 to 19.9ha, 10% from 20 to 49.9ha, 3% from 50-99.9ha and 28% had a farm 100ha or over.

Internet connectivity varied across farms; almost 30% of respondents thought it was excellent, 24% very good, 29% good, 10% poor and 7% very poor. Relating to the connectivity, the download speed or bandwidth of the internet connect varied considerably across respondents.

We firstly assessed our DEMETER farmers' understanding of the DEMETER project. 87% of respondents either agreed or strongly agreed that they understand what DEMETER is trying to achieve. 80% either agreed or strongly agreed that they would feel comfortable explaining the DEMETER project to others. 51% would like to see more information from us to understand DEMETER and its goals. Following on from this insight, we will be creating and publishing more regular information targeted at farmers and making it available in languages other than English.

Next, we addressed farmer needs by creating a series of statements, developed in consultation with the World Farmers' Organisation (WFO). Many of these statements were also uncovered at the DEMETER Stakeholder Analysis workshop which was conducted in 2020. Farmers were asked to rate these needs on scale of 1-10 in terms of how important they considered them for their farm. Results showed that besides an *increase in yield quality*, famers ranked *access to weather and climate change information, access to feasible and affordable technology* and *accessibility, security and comprehensiveness for their farm's data* among the top five needs.

| Rank	Need statement	weighted average rank
1	... to increase yield quality.	8,38
2	... to have access to weather and climate change information.	8,28
3	... to have access to feasible and affordable technology (provided by DEMETER).	8,03
4	... my farm's data to be accessible, secure, and comprehensive for me.	7,86
4	... a system that provides me with support for maximize profit.	7,86
6	... a system that provides me with support to increase my farm's economic sustainability.	7,83
6	... a system that provides me with support to increase my farm's ecological sustainability.	7,83
8	... automated documentation of my farm's operations.	7,55
8	... to have access to market information.	7,55
10	... to increase yield output.	7,38
11	... be involved in the strategic development of innovations from the beginning of the process.	7,31
12	... to optimize input usage.	7
13	... to compare my farms performance to the performance of other, similar farms.	6,97
14	... access to extension services (advisory services).	6,96

Equally, a series of farmer concerns was also created in consultation with the WFO and following the DEMETER stakeholder workshop. The results demonstrated *that data privacy and sovereignty* and *the return of innovation investments* rank among the highest concerns for the DEMETER farmers.

Rank	Need Statement	Weighted average
1	... about my data privacy and sovereignty	5,03
1	... that I invest in an innovation that doesn't give me the proper economic return	5,03
3	... to disclose my business data to my competitors	4,93
4	... that my competition is ahead of me	4,52
4	... that I invest in an innovation that doesn't fit my needs	4,52
6	... that I invest in technology that is not compatible with my other technology	4,38
7	... that I do not have the necessary skills to use or operate the new technology	4,31
8	... that the technology I invest in is outdated	3,79

We then looked at the perceived usefulness and perceived ease of use of the DEMETER technology. These questions were structured using a 5-point Likert scale where 1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5= Strongly Agree.
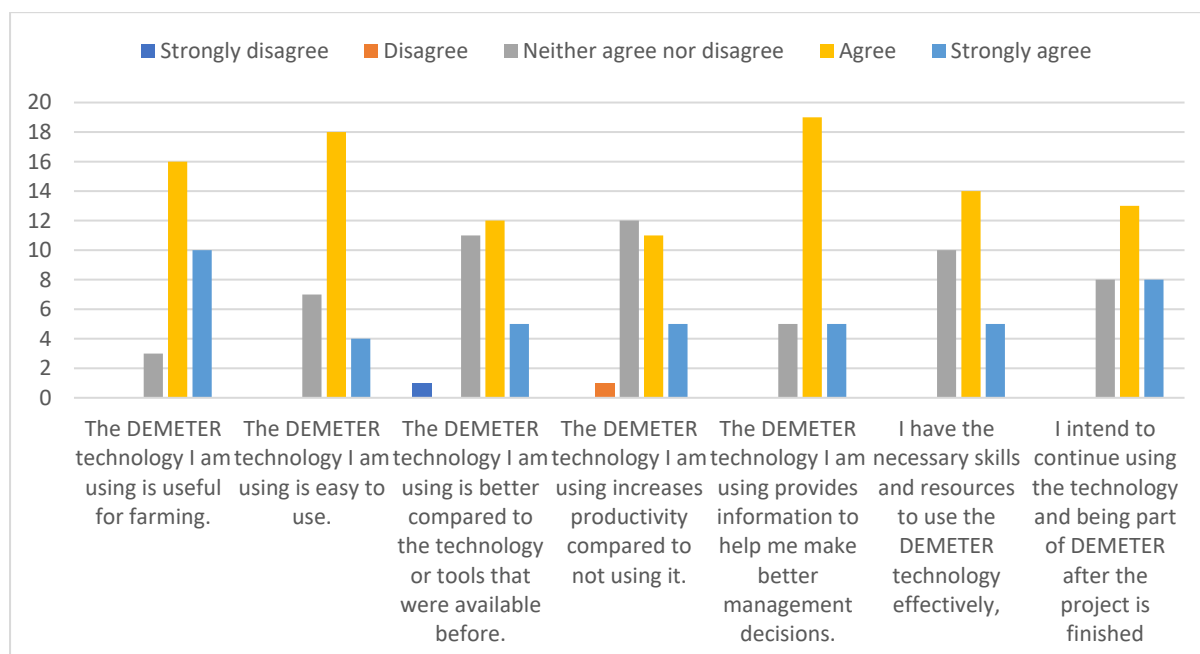
Finally, respondents were asked to rank the greatest innovation needs in agriculture in their country. Education and Skills represented the most important area, with an average ranking of 3.21, with one respondent commenting that "Training for farm workers is important for all innovative technologies. Otherwise, they won't apply". This was followed by *enabling framework (financing and banking schemes, legal framework etc.)* and *digital infrastructure*, both with an average ranking of 2.32, and physical infrastructure with an average ranking of 2.21.

In summary, the survey was a very useful exercise to better understand farmers' needs, interests and concerns regarding digital technologies and the DEMETER project. It enriched qualitative insights that were generated by the DEMETER consortium beforehand with quantitative data, thus guiding the DEMETER research to further directions.

As for needs and concerns, topics like *accessibility* of both *climate data* and *technology*, as well as *data security and sovereignty* will be addressed in further workshops.

The results will help us address these issues and improve our communication with the farming community. We will be extending a similar survey to a wider network of farmers over the coming months. In addition, we will be creating a survey to engage with IT service providers (hardware and software).