

Overview and prioritisation of main themes from the Farming Connect baseline survey

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Introduction

The Farming Connect baseline survey has run three times; in 2016, 2017 and 2018. In 2016, the survey respondents were selected at random to represent Farming Connect registered businesses from each region of Wales. The same businesses were surveyed in 2018. This report concerns the results of the 2018 questionnaire, which surveyed 911 farmers, representing 10.1% of all businesses registered with Farming Connect as of 3rd August 2018.

The key findings of the report indicate that farmers are engaging in activities provided by Farming Connect and a good awareness of environmental concerns is shown, although some additional support in terms of interpreting results and applying these to farm practises may be needed. The report to follow gives an indication of farmer behaviours and on-farm activities, both in general and as a result of the Farming connect programme.

Survey results:

Q1 (a): Do you benchmark (compare) your business performance against other similar businesses physically, financially or both?

Answer	No. Responses
Financially	41
Physically	74
Both	199
Total Responses	314
No Response	596

The majority of responders (65%) benchmarked their business in terms of both financial and physical parameters, financial and physical benchmarking accounted for 23% and 12% of responses, respectively. Overall, only 314 responses were recorded for this question. A response was not given by 596 people that later responded to at least one other question. This may suggest that 65% of farmers surveyed do not take part in any sort of benchmarking. Turner *et al.*, (2018) suggest that engaging in some form of comparative recording keeping such as benchmarking increases confidence when assessing future opportunities and making decisions that improve farm performance. In contrast, farmers who were not keeping and interpreting written or electronic records were more likely to approach change in a reactive or cautious manner. Best practice benchmarking links processes and performance provides a balance of production, financial, environmental and social factors and presents information, which enables easy and unambiguous interpretation by farmers (Ronan and Cleary, 2000). However, it is important that the correct metrics are used when assessing a business, as focussing one single measurement can be misleading, for example, examining profitability in isolation often does not reflect “best practise” (Lawrence *et al.*, 1998; Ronan and Cleary, 2000). Therefore, Farming Connect should continue to promote the benefits that benchmarking could bring to a business in terms of production efficiency, by utilising case studies from businesses that have used Farming Connects Measure to Manage scheme to improve their efficiency and business performance

Q1 (b): If “yes”, have you started benchmarking as a result of any of the following Farming Connect activities in the last two years?

Answer	No. Responses
Discussion groups	181
Agrisgop	38
Agri Academy	10
Advisory Service	2
Other responses - non Farming Connect activities:	
Farm Business Survey – Aberystwyth University	23
Princes Trust	1
Verbally (Ar Lafar)	5
Grassland Society	2
Accountant	1
Facebook	1
King's Hay	1
Tesco	2
Country Land and Business Association	1
Farm business planner	1
No Response	684

Most farm owners that have started benchmarking, have done so because of involvement in discussion groups (60%) organised by Farming Connect, indicating some success of KE activities in this area. In some cases, the response was specific to the type of discussion group attended, but most did not provide that additional information (here 81% did not specify). This suggests that farmers have found discussion groups beneficial and are adopting new practices as a result. Peer education is an effective method of training/teaching as participants are often more receptive to learning from others that have tried and tested a new concept thus providing a sense of credibility and that can relate easily to one another. Peer learning also allows participants to expand their social network and form new business relationships.

The methods and skills required to run a successful farm have traditionally been passed down from generation to generation and sometimes from neighbour to neighbour, as such, most farming practices began as peer-to-peer interaction. Therefore, it is unsurprising that this method of communication and training is more effective amongst farmers (Roling and Wagemakers, 2000). Experiential learning and motivation also play a significant role in the learning process, both of which are captured with peer education (experience coming from the practical application of knowledge and motivation based on the success of peers) (Brophy, 1987; Kolb, Boyatzis and Mainemelis, 2001). Faysse *et al.*, (2012) found that it is important to facilitate this knowledge exchange, as in a standard, day-to-day situation only two-thirds of farmers regularly discussed practices with one another. Therefore, Farming Connect will play an important role by providing discussion groups and the financial resources to facilitate learning and innovation.

A response was not given by 684 people that later responded to at least one other question. This is consistent with the number of “no responders” in the previous question. The small reduction in responses may be because there are other reasons that farmers began benchmarking or simply disengagement.

NB. The total number of responses here is 610, almost double that of the previous question, this is because most respondents answered with more than one farming connect activity, so responses may be counted up to 4 times depending on the number of activities listed.

Q1 (c): Have you used your benchmarking figures to make changes in the way you manage your farm in the last two years?

Of those that answered “Yes” to benchmarking, 57% used these figures to make changes in farm management. This may suggest that farmers require more support in using benchmarking figures to produce meaningful results and to translate these into practical changes on the farm. In total, 610 responses were counted to this question. A response was not given by 506 people that later responded to at least one other question.

Answer	No. Responses
Yes	225
No	169
Yes & No	8
Total responses	610
No response	506

Q2: Does your business have a succession plan (someone to take over from you when you retire) in place?

Answer	No. Responses
Yes	384
No	460
Not relevant	41
Total Responses	885

Of those surveyed, fewer than half (45%) had a succession plan in place for their business. Dealing with change in a family farming business can be particularly hard where farming is a way of life, as well as a business and communication about succession, can often be difficult. Several studies have documented the difficulties associated with the transfer of management from the owning generation to the successor generation (Symes, 1990; Barclay, *et al.*, 2005; Lobely *et al.*, 2010^a; Lobely, 2010^b).

A range of studies claims that the probability of succession largely depends on farm size, meaning that larger farms are more likely to be transferred within the family (Glauben *et al.*, 2009; Kerbler, 2012; Suess-Reyes and Fuetsch, 2016). Larger farms provide better prospects for potential successors and are more likely to ensure secure earnings, thus increasing the financial attractiveness of farming compared to employment in other sectors. As indicated in multiple studies, the probability of intra-family succession increases with farm performance, which has been measured in annual farm revenue (Kerbler, 2012) and farm sales (Cavicchioli *et al.*, 2015). The aspiration to continue the family tradition and the family's emotional attachment to the farm are also valuable and unique motivators that greatly increase the likelihood of intra-family succession (Kerbler, 2012; Suess-Reyes and Fuetsch, 2016).

A survey by the Farmers Guardian (2016) found that 64% of farmers surveyed were concerned about succession planning, as such, it is important that Farming Connect continues to run Succession Surgeries and can offer support throughout the process. It is also important that the value of small-scale farms is not lost and that the cultural and emotional importance of inheritance is considered during negotiations and discussions.

The implications of not having a succession plan in place are clear, from liquidation and an

end to the business to a loss of farming knowledge/skills and traditional practise (Beattie, 2014). The negative cultural impact of a loss in farmers is also significant, as the majority of land in Wales is protected and maintained by farmers.

This would result in a loss of public goods and endanger the iconic landscapes of Wales, which are strongly linked to Welsh language, culture and heritage.

Q3 (a): Have you carried out any of the following on your farm in the last two years?

The respondents were asked if they carried out any: Soil Sampling/Nutrient Management Planning, Silage Sampling, Animal Health sampling (e.g. blood sampling, FEC sampling or lameness scoring), Grass Measuring or any combination of the above, in the last two years. Data was organised to show combinations as individual categories, or to split combination responses into one of the four main groups. Approximately 137 respondents (that did go on to answer other questions) did not answer this question.

Answer	No. Responses
Soil Sampling/Nutrient management planning	120
Silage Sampling	13
Animal Health Sampling	125
Grass measuring	4
Grass measuring & Animal health sampling	13
Silage Sampling & Grass measuring	3
Silage Sampling & Grass measuring & Animal health sampling	2
Silage Sampling & Animal health sampling	40
Soil sampling & Grass measuring	6
Soil sampling & Grass measuring & Animal Health sampling	13
Soil & Silage Sampling	57
Soil & Silage Sampling & Grass measuring	11
Soil sampling & Silage sampling & Grass measuring & Animal Health sampling	48
Soil sampling & Silage sampling & Animal Health sampling	147
Soil Sampling & Animal Health sampling	146
Total Responses	748
No response	137

Answer	No. Responses
Soil Sampling/Nutrient management planning	548
Silage Sampling	58
Animal Health sampling	534
Grass measuring	100

The above tables suggest that the most common strategies engaged with on farm in the past two years were soil sampling and animal health assessments (44% and 43% respectively). In terms of a combination of activities, Soil Sampling & Animal health sampling accounted for 19.6 of responses and Soil Sampling, Animal health sampling and Silage sampling for 19.5%. Respondents were more likely to engage in a combination of these activities as opposed to one measurement in isolation.

This is encouraging as it demonstrates farmers in Wales are looking at their farm as a whole as opposed to focussing on improving one area. Overall, 84% of total respondents engaged in at least one of the above activities – this is a high percentage of farmers taking practical steps to improve their businesses. It is important when changing behaviour that messages are carefully targeted, many farms in Wales are smallholdings so innovations and best practice on larger scale farms may not be applicable. It is also important that a change in behaviour is incentivised and the value of these changes are clearly demonstrable, the benefits of measurements such as soil and silage sampling and improving animal health are obvious and plentiful, thus providing clear motivation for farmers to engage (Rose *et al.*, 2018).

Q3 (b): If “yes”, have you used this information to make changes in the way you manage your farm in the last two years?

Of those that carried out sampling/analysis activities, the majority did use these results to make changes to farm practice (80%). Once again, a good percentage of farmers are making use of the data received to make improvements, there may be many reasons for farmers not making changes, for example, if changes were not necessary, the capital was not there to facilitate changes or because additional support was needed to interpret results and turn this into practical steps. Once again, motivation plays an intrinsic role in changing behaviour; here the incentive behind these Farming Connect activities is clear, evidenced by the fact that 80% of respondents made changes as a result.

Answer	No. Responses
Yes	633
No	152

Total responses	785
No response	129

Q4: Do you have a clear ambition for your business over the next 3-5 years?

Of those surveyed, 67% of responders had a clear aim for their business in the next 3-5 years. The response rate to this question was good, and most farmers surveyed did have an idea of what they would like to achieve in the next 3-5 years. There are a myriad of reasons why farmers may not have a clear long-term ambition for their business, these may include their approach to retirement and lack of a successor, restructuring and making major changes to their farm or the need for business planning support to realise these goals.

Answer	No. Responses
Yes	595
No	292
Total Responses	887

Q5: Do you have a written business plan outlining how you will deliver your ambition?

However, only 18% of these respondents had a written business plan that outlined the delivery of these aims. This shows a clear need for access to business advisors and planners, in order to achieve business aims and to maintain control it is important to make a record of targets and practical steps. This may be something that is out of reach both financially and geographically for farmers, especially those that farm in a more traditional way. Conventional farmers typically learn and adopt practices from the preceding generation and as such do not tend to seek the advice of outside parties (Rose *et al.*, 2018). An area for future consideration may be the implementation of a programme to connect farmers with the appropriate business support – specifically those that have experience in the Welsh agricultural sector. Farming Connect currently offers up to 80% funding towards the cost of a business advisor for planning and advice, further publicising this as a clear incentive to farmers could encourage the adoption of written business strategies.

Answer	No. Responses
Yes	159
No	728
Total responses	887

Q6 (a): Are you currently using electronic recording software to manage the performance of

your flock/herd?

Answer	No. Responses
Yes	278
No	602
Total responses	880

Respondents were asked about their use of electronic identification system, with 68.5% answering that they do not currently use electronic recording software. The use of computers and EID is a relatively new technology, especially in traditional Welsh farming systems and may not be necessary on small-scale farms, found commonly throughout Wales. Whilst it is important to encourage farmers to embrace new technology, it is also vital that each business is treated as its own separate entity – there are many systems that simply do not need EID. Providing support and advice to those that are interested and facilitating discussion with those already using the technology may be useful in providing motivation (seeing the system tried and tested in a similar system for example) (Rose *et al.*, 2018). It is also important to consider that because EID is a new technology it can be costly in the short term for farmers, this is a very significant deterrent in changing behaviour, so a clear cost benefit in the long term needs to be demonstrated.

Q6 (b): If “yes”, please provide a narrative of what type of system you operate:

EID System	Users
NMR (National Milk Records)	2
EID (Electronic Identification)	147
EID Shearwell	33
Computer database	5
Alpro	1
Farmdata	1
Scales	2
Uniform Agri	5
Farm3000	4
Allflex	3
Interherd	2
Lambing cameras	2
Heat detection collar	2
Collars	1
AgriNet	1

AgriData	15
FarmIT	4
FarmPlan	3
FarmWizard	1
FarmWorks	1
Milk analysis	6
Heard Watch App	1
Recording Wand	11
Stock Move Express	2
XL	3
TruTest	6
Total Responses	264

Of those currently using an EID system, most did not specify the brand, however, of those respondents, Shearwell was the most popular branded system (22%). The total number of responses to this question were 264, 14 less than answered yes to using an EID system, suggesting that these few respondents did not know the type of EID system/could not provide more specific information or were disengaged with this question.

Q7: Do you or others working on the holding intend to undertake accredited training through the Farming Connect programme in the next 2 years?

Of those surveyed, more than half (61.5%) intend to undertake accredited training with Farming Connect in the next two years. This is a positive response to see farmers engaging with Farming Connect and making use of training provided. However, just under half of those surveyed stated that they do not plan to engage in any training with Farming Connect. This indicates room for improvement in farmer engagement, whether that is in the use of varied communication tools (such as postal communication with the option to go paperless), flexibility when it comes to access (e.g. working around key farming times of the day) and geographical location (providing workshops and training in a variety of easy to access locations). A certain amount of motivation may also be necessary via incentivising courses, in addition to delivering knowledge, this could be done through offering grants for courses and investing in training that offers a significant outcome (i.e.: a relevant qualification).

Answer	No. Responses
Yes	543
No	339
Total Responses	882

Q8: Have you considered planting trees on your farm?

No clear inclination was shown to planting trees on the farm, with 48% answering “Yes” and 51% answering “No”.

Answer	No. Responses
Yes	432
No	462
Total responses	894

This may suggest that further education on the benefits and necessity of agroforestry in Wales should be offered. Climate change is a serious global threat, not least of all to farmers that must consider the appropriate adaptation measures to maintain a successful business. Changing attitudes towards agroforestry as a means of tackling climate change is important, incentivising farmers to plant trees being the top priority. Showing a clear linear progression of how the introduction of trees onto farms can benefit the farmer (not just the wider environment) is important: improved soil quality, biodiversity and crop production for example (Current *et al.*, 1995).

Q9: Other than bovine TB, what is the biggest animal health issue at the moment, relevant to your holding?

Health Issue	No. Responses
BVD (Bovine Viral Diarrhoea)	51
Johne's disease	48
Parasites	140
Lameness	102
CODD (Contagious Ovine Digital Dermatitis)	28
Pneumonia	51
Mycoplasma	6
ORF (Parapox)	3
Scab	70
Avian influenza	5
Antibiotic/parasite resistance	14
Foot rot	82
Fertility	24
Grass Stagger	2

Joint ill	1
Maggots	10
Abortion	15
Cryptosporidium	1
Mastitis	23
IBR (Infectious Bovine Rhinotracheitis)	12
Leptospirosis	11
Fly strike	5
Cell counts	2
Pasteurella	6
Weather	9
Environmental concerns/Biosecurity/Waste management	4
Swine fever	1
Dietary concerns	10
Bluetongue	2
New Forest Disease	4
Water mouth	2
Financial concerns	4
AI (Artificial Insemination)	3
Chytridomycota	1
Scouring	2
Badgers	1
Coccidiosis	6
New Forest Eye	4
Lymph	6
Toxoplasma	3
Total Responses	774

The most pressing concern of farmers surveyed was parasites, especially liver fluke, constituting 18% of all answers; this was closely followed by generalised lameness accounting for 13%. Also of significant concern, is Bovine Viral Diarrhoea (BVD; 6%), Pneumonia (6%), Sheep scab (9%) and Footrot (10.5%).

The provision of faecal egg counts through Farming Connect is an effective way of tackling worm burdens of livestock whilst reducing the risk of drug resistance (McKenna, 1981). It is

important that farmers are aware of this service as well as methods by which they can reduce the risk via land management and biosecurity, for example, a key strategy for reducing infection with liver fluke is well-draining land (standing water and flooding provide the ideal environment for the intermediate host snail) (Bowles, 2018). Setting up/utilising existing local discussion groups (geographically formed) could be useful here, as previously mentioned peer learning is an excellent form for delivering information to farmers whilst sometimes instruction from vets and scientists can contain too much information and be overwhelming.

Cooperation to improve the environment to reduce the risk of secondary hosts, re-infection and cross- infection is vital to ensure efficient and effective treatments. Such a strategy would also be appropriate for sheep scab, biosecurity is a concern as often one farmer that does not treat will infect/re-infect surrounding livestock – mites, which are able to move freely between hosts, cause scab (van den Broek and Huntley, 2003). A certain amount of peer pressure may be effective in changing behaviour, as well as the clear incentive of improving animal health (Rose *et al.*, 2018).

Q10 (a): On a scale of 1-6, how important is the management of biodiversity & habitats to your business (1 not important and 6 being very important)?

When respondents were asked how important biodiversity and habitats were to their business, there was a clear inclination towards the higher end of the spectrum i.e. more important. Of those surveyed, 71% indicated an importance of four or above for habitats and biodiversity, with 29% selecting three or below.

This suggests a good awareness of the impact of biodiversity on farming as well as clear motivation to improve biodiversity. However, there was no way to gauge from this survey how many are actively engaging with management approaches that enhance habitat provision or biodiversity. Future iterations of this survey should aim to capture examples of what management interventions have been employed and other factors including challenges encountered and support needed.

Score (Importance)	No. Responses
1	5
2	4
3	24
4	80
5	389
6	396
Total Responses	898

Q10 (b): On a scale of 1-6, how important is the management of soil quality to your business?

Score (Importance)	No. Responses
0	3
1	28
2	40
3	190
4	239
5	258
6	147
Total Responses	905

Of those surveyed, the vast majority selected that management of soil was very important to their business, with 89% opting for five and six at the upper end on the scale of importance. It may be somewhat surprising that soil quality has not been ranked more importantly here, perhaps this indicates that a more clear connection between the importance of soil quality and grazing needs to be made (Welsh Government, 2016). This will provide motivation to engage in soil sampling and training associated with soil management, e.g. spraying courses.

Q10 (c): On a scale of 1-6, how important is the management of water quality to your business:

A similar trend can be observed with the management of water quality, as 87% of respondents indicated that the management of water quality was at the higher end of the scale (five and six). This suggests that participants are aware that water quality in Wales may be an issue, especially in terms of pollution from fertilisers and waste (slurry run off). Awareness of incentives to maintain/improve water quality from the Sustainable Management Scheme support service and of advice regarding slurry/waste management via Farming Connect is vital.

Score (Importance)	No. Responses
1	2
2	5
3	27
4	65
5	305
6	496
Total responses	900

Q10 (d): On a scale of 1-6, how important is the management of the landscape to your

business:

Score (Importance)	No. Responses
1	2
2	18
3	50
4	185
5	462
6	176
Total responses	893

The trend for the importance of landscapes was looser, but 92% of those surveyed did indicate an importance of four or above on the scale. This may suggest that Welsh farmers are aware of their surrounding landscapes, especially in terms of tradition and culture. Landscapes are a significant public good and it is important that farmers are aware of the opportunities for funding after leaving the EU to maintain historic landscapes that characterise Wales (The Heritage Alliance, 2017). This provides a key incentive for farmers in addition to the personal importance of these landscapes.

Q10 (e): On a scale of 1-6, how important is the management of water to your business:

Score (Importance)	No. Responses
1	29
2	22
3	36
4	123
5	493
6	188
Total Responses	891

The management of water overall was important to those surveyed, the majority (90%) indicated an importance score of over four. Perhaps in light of the 2018 summer droughts, this factor has become more of a concern for farmers. The Met Office (2018) has released statistics that show the 2018 summer in Wales was consistently hotter than average and 36% less rain fell. This caused many private water sources to dry up, the implementation of hosepipe bans, wildfires, health concerns for livestock, flooding and a loss in profits from crops amongst other issues. Drought is a very rare issue for farmers in Wales, meaning that there are very few strategies in place to manage water in this situation.

Q10 (f): On a scale of 1-6, how important is the management of air quality to your business:

Score (Importance)	No. Responses
1	7
2	14
3	46
4	168
5	501
6	162
Total responses	898

A similar trend is observed for air quality, with 56% of responses falling into five on the scale of importance. Perhaps a surprising result as air quality in Wales is generally very good, rarely rising above a pollution index score of two when measured against the air quality index (Welsh Government). Throughout this subset of questions (10a-f), the total number of responses dwindles slowly as the survey proceeds, perhaps indicating that respondents are disengaging as they come to the end of the survey.

The level of farmer knowledge and insight for each topic in question 10 remains unclear, as the questions successfully quantify how important a feature is to farm business but not whether the farmer understands how to measure the health/quality of that feature. Therefore, the above answers are useful from a policy creation perspective, but in terms of knowledge exchange, it is necessary to quantify where there is a knowledge deficit.

Concluding Remarks

A good level of engagement by farmers with Farming Connect activities is indicated in the survey responses, more than half of farmers surveyed are utilising the opportunities on offer and making practical changes to their businesses. It is particularly encouraging to see an awareness of the environment and of changes in government as well as a willingness to engage in practical steps to comply and improve.

With particular reference to question 3, results may indicate that whilst farmers are engaging in scientific analyses, additional support may be necessary to make meaningful conclusions from this data and to apply it to the farm. Another key area to consider is communication; many respondents would like more and clearer communication about what Farming Connect can offer as well as via different routes. Many rural communities rely on postal communication, as internet connectivity is problematic and the use of computers is low, as such, postal communication with the option to “go paperless” may be an effective strategy. Additional support using computers, online processes (e.g. VAT) and databases may also be valuable.

Further work is needed to assess the level of knowledge in these areas and gauge exactly what practises have already been put in place; this will give Farming Connect a clear direction in which to move to best support Welsh farmers.

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