

**Independent Review of Learning Delivered by Further
Education Colleges and the Relevance of that Delivery in
Supporting Farm Businesses in Wales**

January 2015

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Foreword

I was commissioned by the Welsh Government to undertake a review of learning delivered by further education colleges and the relevance of that delivery in supporting farm businesses in Wales. In conducting my review, I was guided by the following agreed terms of reference:

- to gain an understanding of the learning delivered by further education (FE) colleges in Wales, and its relevance to 21st century farming processes, and to make recommendations for change, where appropriate
- examine potential synergies for working together and relationships that could be developed between colleges and the farming industry
- to identify the broader implications of developments in the labour market and skills requirements for agriculture and related activities
- to consider whether the volumes of learning being delivered in land-based subjects are adequate for the needs of the farming industry
- examine the current provision of ongoing personal and business development work (Continuous Professional Development (CPD)) that is available and what scope there is to develop in the future to help professionalise the industry and potentially certification of certain standards.

In undertaking the review, I have held meetings and interviews with a cross section of people in order to gain a clear understanding of the level of activities and the shape of the agricultural education college sector. During these discussions I was able to explore the challenges facing the sector as well as the opportunities available to it. I record my appreciation to those individuals noted in appendix A who have participated in the review.

In addition, I have read through numerous reports of current relevance to the review. It became apparent from this that the agricultural colleges cannot be viewed in isolation - structurally or functionally.

I have been impressed by the activities of the Agri-Skills Forum which has adopted a UK wide perspective whilst also providing an enabling framework for Welsh Government to take forward. They have adopted a broad definition of “skills” in the context of their report. Their definition includes technical, management, entrepreneurial and leadership skills, initial and lifelong learning (CPD), informal and accredited learning, higher and further education (regardless of mode of delivery), knowledge and technology transfer. The process of delivery becomes less coherent and effective because of the fragmentation of the funding and of the organisations charged with delivery.

I have adopted this broad definition of skills, within the context of this report, to assist in the process of promulgating a cohesive and coherent infrastructure to support the development of the human and social capital of rural Wales.

An emerging common theme has been the promulgating of a wider remit for further education colleges with agricultural provision in Wales, and a greater degree of integration with the university sector provision in agriculture within Wales. In addition, the steer has been strongly orientated towards greater structured collaboration between the higher education and further education sectors and those agencies closely allied to the farming sector in the delivery of business support and knowledge exchange; primarily Farming Connect, the levy funded bodies and the private sector as they operate in Wales.

The review sought to emerge with recommendations which provide coherence, capacity, capability and enduring qualities to the agricultural educational activities in Wales. Both educational and industry imperatives are important in shaping the future delivery structures of agricultural education.

My definition of agriculture embraces references to farming, land use and mechanical activities. This is a narrower footprint than those of Lantra, the land-based Sector Skills Council (SSC). Similarly, when referring to further educational agricultural providers I refer to those further education colleges which have an agriculture provision and associated physical resources.

The Welsh Government has a critically important role in ensuring the coherence of organisations and structures for delivery of provision. It is very important for the agricultural industry and its organisations to be fully engaged in setting the agenda with Government to ensure comprehensive and meaningful participation in the delivery process.



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1. Colleges offering agricultural provision in Wales

A number of reviews of the agricultural college sector in Wales have been carried out in the past, driven largely by lack of critical mass of students. The impact of the recommendations, aimed at encouraging colleges to collaborate and move towards delivering a common curriculum across the sector were restricted, as considered below.

1.1 Education and Learning Wales (ELWa) Review

The last major review of the agricultural and land-based sectors was undertaken in 2002 having been commissioned by ELWa.

This was at a time when the farming sector was going through a difficult period following the major foot and mouth disease (FMD) outbreak in the UK in 2001. The previous and enduring difficulties with bovine spongiform encephalopathy (BSE) had hit the Welsh farming sector badly given its major consequence for the dairy, beef and sheep sectors. It was also a time of low interest and recruitment into agriculture of the younger generation not only in Wales but UK wide. Indeed, many parents were encouraging their sons and daughters to seek careers outside of practical farming, due to the low profitability and negative perceptions of the industry and possibly, vocational education.

The ELWa review highlighted a number of key issues:

- Excessive competition between further education colleges
- Credibility of colleges amongst learners and industry
- Insufficient level of business on college farms to reinvest capital in physical resources and people
- Declining recruitment, particularly the National Diploma in Agriculture (Level 3)
- Lack of critical mass of people and activity necessary to reinvest in capital to serve learners and industry. This led to reduced capacity and capability in the agricultural college sector in Wales.

The review did not intend this to be perceived as criticism, rather as fact. Indeed the review did note areas of opportunities for the colleges. A key observation was that, “In general the opportunities and resources of FE providers are not well articulated within broader policy, research and technology transfer”. It noted that the activities provided by evolving new structures e.g. Farming Connect amongst others, provided opportunities for FE to make a contribution.

1.2 Recent Structural Changes to Further Education Impacting upon Welsh Agriculture

Issues of policy, funding, critical mass and scale have resulted in a number of mergers leaving no independent agricultural colleges in Wales:

- Coleg Sir Gâr (Gelli Aur) merged with University of Wales Trinity St Davids on 1st August 2013
- Coleg Meirion Dwyfor (Glynlifon) had previously merged with Coleg Llandrillo (2010). Grŵp Llandrillo Menai is the result of a merger between Coleg Menai and Coleg Llandrillo (2013)
- Deeside College has previously merged with the Welsh College of Horticulture (August 2009) and Coleg Llysfasi (2010). Deeside and Yale College Wrexham subsequently merged on 1st August 2013 to become Coleg Cambria
- Coleg Powys and Neath Port Talbot College merged on 1st August 2013 (Coleg Powys have plans for a foundation degree validated by Glyndŵr University)
- Coleg Gwent operates land-based studies from its Usk Campus, and has validation through the University of South Wales
- Bridgend College operates its land-based provision from its Pencoed location. It has a validation arrangement with the University of South Wales
- Pembrokeshire College has only a limited land-based provision.

These recent changes, new structures, and relationships are in the initial stages of development, and widening opportunities and challenges are in the early stages of being identified. The first three colleges mentioned above show a number of common factors relating to Level 3 provision in Wales.

There is much to admire in the ambition, institutional integrity and strategic direction of the FE sector in terms of agricultural provision. Being part of a larger corporation, many have strong specific industry links and entrepreneurial activity in their local areas, in other disciplines and industry sectors. They have much to offer to enrich the local partnership with agriculture and, through collaboration, on a national basis. The multidisciplinary approach and transferability of this approach, is commendable and compels us to seek routes to exploit fully the opportunities presented.

1.3 Some notable features of the colleges with agricultural provision in Wales

A joint foundation degree in agriculture in a franchised arrangement between Aberystwyth University and Coleg Cambria and Grŵp Llandrillio Menai will commence in 2015. The four year part-time delivery utilises the two sets of resources and is aimed at those whose home situations limits the pursuit of full time Higher Education (HE). An interim exit route exists at the end of year 2, with the award of a Certificate of Higher Education.

A developing and important part of the curriculum which is offered across a number of colleges is the provision of vocational land-based courses for 14-16 year old school pupils in partnership with local schools. Most popular amongst a range of courses is the study of agriculture. Participation rates are in the hundreds currently and this initiative must be supported by government and the farming and food sectors.

The colleges deliver an increasing number of full cost short courses (primarily skills-based). The number of courses offered by these colleges total several hundred, and reaches a wide range and number of beneficiaries. Coleg Cambria and Grwp Llandrillio Menai are working together on other developments of this kind for joint delivery.

There has been considerable recent investment in learning and farm based resources. Residential opportunities exist but these may prove to be a limiting factor in future at some centres. These are costly to provide, but we need to reassure ourselves that Welsh centres are not disadvantaged because a number of the FE/HE providers on the English side of the Welsh border have very good facilities.

Overall the quality of the current provision is well rated by Estyn, and reflects well on the learning of students, quality of teaching, and resources available in Wales.

The recent introduction of a Level 3 Royal Veterinary College (RVC) Veterinary Nursing qualification could be a useful link with the aspiration within Wales to establish a Veterinary School at Aberystwyth University. In addition, Coleg Sir Gâr hosts a rotation of undergraduate placements on farms for 5th year RVC students to develop experience of farm livestock and animal health challenges.

The proposed development of the concept of Pentref Addysg @ Glynllifon – the creation of a centre of activity, by a number of partners, that all support the development of agriculture, rural diversification and rural enterprises.

Coleg Sir Gâr works well with the Welsh Dairy Industry Steering Group and Dairy Co. This has been a very productive initiative involving many dairy farming groups sharing innovative approaches and best practice to improve energy use on farms, improving health and disease prevention in dairy herds, working nationally on

improving the use of grassland for milk production and participation in a pan-European dairy industry benchmarking exercise.

1.4 Opportunities

There is a genuine wish by college leaders to engage in a wider agricultural industry agenda this is evidenced by some of the ideas and concepts currently being discussed within the sector. For example:

- Renewable energy technology/Knowledge Transfer facility to be explored
- Planned introduction of farmers' market on of the campuses
- Joint working between older farmers and young entrants to ensure succession and preparation for entry and/or retirement. This concept of matching and mentoring is gaining momentum in the thinking of the whole industry currently. The colleges are in a key position to influence this initiative
- A national development centre for red meat production showcasing best practice in sustainable production, applied research, development and knowledge transfer along the supply chains
- The potential for FE college agricultural campuses to become hubs in an all-Wales training and knowledge transfer strategy, forming close links with the University sector, the advisory services currently offered by Farming Connect, the levy funded bodies most notably Dairy Co. and Hybu Cig Cymru. Private sector advisory providers may also wish to engage with the colleges also
- Extending the number of apprenticeships at Level 2, 3 and possibly 4. There is a clear commitment to this agenda whilst recognising some of the challenges involved in engaging an industry dominated by micro businesses
- Many of the colleges deliver on multiple sites locally and regionally, thus increasing accessibility and geographical penetration
- Developing provision in the context of and in conjunction with the food and drinks industry recognising the importance of supply chain innovation and effectiveness
- A strong core of provision at further education level in agricultural engineering/farm mechanisation
- One centre has recently become a BASIS training and assessment centre.

1.5 Good practice identified

Many elements of good practice were identified which could be enhanced and shared, for example:

- Working with local contracted farms to provide a range of practical expertise and experience

- Provision of professional National Proficiency Test Council (NPTC) courses to supplement provision
- Use of labour market information to inform curriculum content, particularly for apprenticeships
- Extra support for learners from a non-farming background. Successful intervention to progress learners into the farming industry
- Commitment to increase apprenticeships and deliver experience
- Linkage with other disciplines i.e. food, catering and hospitality, rural tourism and forestry
- Agricultural tours to other European countries and further afield i.e. New Zealand
- Gradual development towards centres of excellence and becoming a hub for the development and regeneration of the local and regional economy
- The new partnership between the FE centres and the previous agricultural colleges bring new transferable experience to future development e.g. experience of successful Knowledge Transfer Partnerships (KTP); Knowledge Innovation Technology Programme (KITE)
- Developing provision through the medium of Welsh (This was not a specific element of the terms of reference of this review).

1.6 College Farms

Whilst not attempting to justify college farms nor indeed request additional support for investment, it has to be recognised that, historically, they have played a considerable role in the training and development of students, as well as established farmers.

The concept of the Dairy Development Centre (DDC) at Coleg Sir Gâr provides an excellent example where innovative ideas emerged and ably demonstrated in practical terms and disseminated widely. The concept of a centre with a presence in other locations accelerated its impact and ensured local regional and national penetration. Serious consideration needs to be given to revisiting this model. Moreover, the Welsh Government, as part of its delivery of the new Rural Development Programme (RDP), should encourage the development of the concept into other sectors:

- red meat, production in addition to dairy
- field scale vegetables / artisan crops / food
- bioenergy
- upland and hill farming
- woodland and forestry.

1.7 Enhanced role for Further Education colleges

College and university farms in Wales could be used to model changes in agricultural policy and have a piloting role in the implementation of new policy instruments. For example, some of the college farms are participants in Glastir Entry and Glastir Advanced schemes. Unintended consequences of new policy implementation could be established by using these farms as pioneers, thus removing some of the tensions which emerge when such schemes are opened up for adoption more widely.

Development centres based at the colleges (and universities), linked to demonstration farms and discussion groups, would be a major contributor to the adoption of new technologies (farmers having witnessed trialling on a system basis on college farms) and the attendant economic benefit of uptake. There is an element of advanced technology training in knowledge transfer and colleges are well placed to deliver.

The colleges could also work with the Animal and Plant Health Agency (AHVLA) to demonstrate higher health status of livestock and the cost benefit of good health management. There is a need for robust baseline data collection and monitoring to demonstrate the cost benefit of incremental improvements in animal health and welfare. College farms could be adopted to demonstrate the benefit of various agri-environment schemes and enable a basis for putting value on ecosystems services. These points are amplified later in this report.

1.8 The colleges curriculum

In addition to the mergers and collaboration mentioned earlier, there is a good deal of activity and development taking place in the Welsh FE sector as well as a number of developments in the curriculum. The sector welcomed the strong emphasis on parity of esteem between vocational and academic qualification following the Independent Review of Qualifications for 14-19 year olds published in 2012. A new programme-based funding model is being introduced in 2014/15 which aims to encourage collaboration and eliminate excessive competition.

1.9 Post 16 Planning and Funding Framework

The Welsh Government has recently implemented a new post-16 planning and funding framework to ensure learners complete a programme of learning that leads to a defined outcome i.e. progress into further or higher education or employment. Programme outputs are, therefore, the attainments of the main qualification(s), attainment of defined essential skills and achievement of the Community, Learner, Industry, Focus (CLIF) contents.

Those charged with the design phase of the new course structure in the colleges have tended to focus on the delivery of the underpinning knowledge through the main qualification (e.g. BTEC level 3 Diploma and the 'core' essential skills). Early indications would hint at a limited amount of funded time being available for the development of additional practical competence training essential for new entrants to the farming industry.

I am in no position as yet to make a judgement, but wish to flag up a concern that the development of practical animal, crop, environmental, mechanical and some business skills are a strength of further education provision over recent decades. It would appear that these are no longer a key component of the main qualification which has become focussed on underpinning knowledge.

I cannot overstate the work ethic possessed by most of the sons and daughters of farmers; nor can I overstate the potential of a move from school based subjects to college to study agriculture to ignite the skills, talent and academic potential of these students. They need a full, busy and relevant curriculum or they quickly become disillusioned.

The Level 3 qualification has been a key aspiration for many who wish to enter the industry, run a business or who are wishing to engage in future higher level learning. It is essential, therefore, that the industry is convinced that the restructured programmes are fit for purpose. The balance between education "push" and industry relevance is a fine one which must be achieved.

My primary reason for labouring the point is that it should be an aspiration that anyone thinking of entering agriculture and running a business should as a minimum attain the appropriate Level 3 qualification, and which could in future be an agreed potential certification to farm.

As an industry we should be working to ensure that all those working in the sector are at least qualified to Level 2 or equivalent.

Given the level of restructuring that has taken place, allied to the very constructive developments of Regional Learning Partnerships, more coherent collaborative approaches are likely to emerge for FE/HE linkages and progression as part of the widening participation agenda. It is important to recognise that not all HE partners in the regions will have the relevant subject expertise (Agriculture / Rural Enterprise) and that these elements need to be built into the overall thinking in the process.

1.10 Apprenticeships

The uptake of apprenticeships in the farming sector has not been as positive as in other sectors. It has been difficult to gather any objective reasons as to why this is the case. Clearly, it is very difficult for apprenticeships to operate in an industry characterised by so many microbusinesses. Farmers' sons/daughters, who have

gained many of the skills already, may not regard the participation as relevant. Colleges may in fact encourage youngsters to study full time instead of participating in an apprenticeship. This could be viewed as an honourable intention recognising that individuals may be better being exposed to a greater range of learning experiences 'off farm', rather than merely experiencing the work and business practices of the home farm to which they will return to in due course.

A group of farmers could collaborate to exchange personnel to give apprentices a range of experiences. I am not aware of such an exchange but am certainly aware of farmers swapping sandwich year learning opportunities – a practice which appears to work well.

It is interesting to note various sectorial pushes in the direction of apprenticeships, e.g. pigs and poultry, whilst noting a proposed apprenticeship in upland farming in England. A collaborative push amongst the colleges, industry and learners is required to promote further the implementation of apprenticeships, especially at HE level. This is particularly relevant if we are to attract new entrants who are not from a traditional farming background.

1.11 Promoting progression

The primary objective of the FE sector with agricultural provision in Wales is the delivery of high quality further education. An additional activity is that of developing progression opportunities from FE to HE. This requires a robust partnership with the university sector not only for academic approval but also to support the development of the subject specialism. I cannot overstate the importance of the latter if we are to establish meaningful and enduring coherence to FE/HE links in agriculture in Wales. It is important for the progression to be provided full time, part-time or work-based.

The FE sector colleges are actually exploring ways to exploit their multi disciplinarily approach by broadening their agriculture mission to enhance rural innovation, enterprise, food chain relationships and efficiencies. They need to be actively encouraged to progress in this direction, as they could be major players in future.

However, we need to be aware that the removal of the higher education funding cap in England together with the possible outcomes of the Independent Review of Higher Education Funding and Student Finance arrangements in Wales, may lead to tension within FE/HE relationships in future due to competition for students in a more market-driven recruitment climate.

1.12 Future European funding changes

The availability of agricultural support funding from Europe (and to a lesser extent the levy funded bodies) may change in the next 10 to 15 years. It could be assumed, therefore, that the further education sector with agriculture provision may have

greater enduring prospects than some of the other organisations servicing agriculture and related subjects the latter being more dependent on transient funds. Whilst it is recognised that opportunities to study and draw on expertise from other UK countries exist, they are also subject to changing patterns. It is logical, therefore, to seize the opportunity now to develop and build capacity and capability in our FE Sector, in partnership with HE to provide and support the ambition we all have for farming, food and the rural economy. This would strengthen the enduring prospects of the family farm structure which is the backbone of the livestock sector in Wales and indeed the Welsh language and culture in the rural areas.

There is considerable merit and potential in developing the key further education colleges as 'hubs' in an all-Wales Education Training and Knowledge Transfer Strategy. These hubs would provide a gateway for signposting and facilitating the choice of activities best suited to meet the needs of individuals and businesses. Whilst it is recognised that there are activities where the FE colleges are in competition, nonetheless a number have demonstrated that collaboration in order to complement each other's expertise will enable the growth of new opportunities.

1.13 Local, Regional and National Coverage

The independence and strategic direction of the Further Education Colleges and the Universities has to be respected. Equally, it is not possible to embrace the aspiration of every institution. I have therefore made some suggestions for future directions of travel based on the evidence of existing initiatives and strengths.

It is noted that the two providers in North Wales (Coleg Cambria and Coleg Llandrillo-Menai) are working well together, and with the Aberystwyth-Bangor University strategic linkage to provide a subject/scholarly strength and create wider opportunities for learners and support for businesses. Working together as a North West and North East hub, they provide the basis for a strong coherent North Wales dimension.

In South West Wales, Coleg Sir Gâr and the Gelli Aur location has demonstrated a very strong entrepreneurial and innovative means of working with organisations to deliver quality support for at least one of the major production sectors in Wales. It is well placed to develop further with its new structural link to University of Wales Trinity St Davids and possible linkage to the food development structures in Wales.

The relative strengths, emerging activities and complimentary activities in the Coleg Gwent, Bridgend and Neath Port Talbot/Newtown College (NPTC) link are less coherent. Their location, amongst a large population and a very good farming area, offers opportunities for further development. These Colleges may be able to exploit more specialist agriculture and horticulture within the context of artisan food to serve a different target audience.

The three main providers at level three provisions are Coleg Cambria, Group Llandrillo Menai and Coleg Sir Gâr. These colleges have a track record of considerable investment in the development of their agricultural learning resources together with a vision and ambition to contribute significantly to the prosperity of Welsh agriculture. In moving to create local, regional and national hubs to deliver the remit of the broader skills definition noted above, they should identify means of working with Coleg Gwent at its Usk campus. In addition the Northop campus at Coleg Cambria and Usk campus of Coleg Gwent could also focus on the artisan food sector in Wales. The four colleges need to ensure complementarity with the learning delivery and learning resources at Neath Port Talbot College (Newtown campus and farm) and Bridgend College.

Bridgend and the Newtown Campus of the NPTC group have the potential in future to contribute a great deal. I would suggest that they work together to identify their strength and coherence and to seek ways to complement and co-operate fully with the other main providers.

Recommendation 1:

Whilst the various sectors are active in developing progressive work based learning opportunities, it is disappointing to note the current modest uptake of apprenticeship training in agriculture. I would recommend that a small group is convened by LANTRA consisting of key individuals from the colleges, the sector levy funded bodies and farmer employers to move the agenda forward on the issue of apprenticeships. The FE colleges may be able to identify and disseminate the good practice from other sectors in this regard.

Recommendation 2:

I recommend that that the three primary providers of Level 3 Agriculture courses, namely Grŵp Llandrillo Menai, Coleg Cambria and Coleg Sir Gâr should be encouraged and supported to develop a coherent, cooperative and complementary approach to support agriculture and work up their plans for co-operating as a priority. In this they should work to include other colleges.

2. Some features of the agricultural activities of the university sector and other key agencies in Wales

Bangor and Aberystwyth Universities have formally committed to a strategic alliance which builds upon a Higher Education Funding Council for Wales (HEFCW) funded research and enterprise partnership established in 2006.

Between them, the two universities are major research grant capturers from the Biotechnology and Biological Science Research Council (BBSRC) and the Natural Environment Research Council (NERC). This collaboration resulted in a joint submission to the Research Excellence Framework (REF) in November 2013, which comprised 20% of the research submissions for both universities.

Between them, they deliver the work of the Centre for Integrated Research in the Rural Environment and the Climate Change Consortium of Wales. Moreover, the Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University hosts the BEACON bio refining centre, a joint initiative between Bangor and Swansea Universities.

Such a rich research and scholarly platform in the area of agricultural, biological and environmental science provides for excellence, which our college network and the industry should and must exploit. It is important that we establish coherence and collaboration, rather than depend on serendipity for linkages.

2.1 Aberystwyth University

In the mid 1990's the Welsh Agricultural College merged with the Institute of Rural Sciences at Aberystwyth, thereby linking the major providers of sub-degree and degree-level further education in Wales. Further mergers within the university and with the Institute of Grass and Environmental research led to the creation of the IBERS.

The university is a very active participant and partner in a number of initiatives to Farming, Food and Sustainable Intensification agenda. Examples include:

- a) **Advanced Training Partnerships** – for Sustainable & Efficient Food production providing tailored Pastoral Agriculture MSc & PhD courses by distance learning to industry.
- b) **Delivery partners:** IBERS, College of Natural Sciences, Bangor University (BU) and the National Institute of Agricultural Botany (NIAB).
- c) **Farming Futures** - established in 2011 with funding from Waitrose and a steering board chaired by Lord Curry of Kirkharle, Farming Futures acts to help UK agriculture through building project partnerships for research and

development across agri-food supply chains and helping publicise and promote new farming practices resulting from research outputs. Current partners are: IBERS; East Malling Research (EMR); Scotland's Rural University College (SRUC); the National Institute of Agricultural Botany (NIAB); Harper Adams University (HAU); and the Agri Food and Biosciences Institute (AFBI) of Northern Ireland. Farming Futures has been a prime mover in helping to define the £160million Agri-Tech Strategy and developing partnerships for its delivery, particularly the proposed Centre for Informatics and Sustainability.

- d) **Pwllpeiran Upland Research Platform** - Launched in February 2014, the important centre for developing sustainable production from the uplands has been developed with funding from BBSRC and the Welsh Government together with an input from SRUC's upland research team at Kirkton.
- e) **DEFRA Sustainable Intensification Platform (SIP)** - IBERS is a partner in all three projects under the DEFRA SIP delivering research and outreach services. The University is engaged in a number of projects which have direct application to Welsh agriculture for example:
- developing efficient forage based systems for ruminants
 - evaluation of sustainable lamb production
 - improvement of milk quality
 - development of high performance deep rooting Festulolium grasses to improve resilience to drought and alleviate water run-off.

These could have included elements of contribution by the FE colleges if a straightforward co-operative gateway existed to facilitate ease of communication and planning.

- f) **Aberystwyth University – Farm Business Survey (FBS)** - Aberystwyth University has been researching Welsh farm incomes for a period nearing 80 years. The Survey collates detailed physical and financial information over a variety of farm types over a total of 550 randomly selected Welsh farms. An annual booklet is published with sponsorship from Farming Connect. This document shows the variables in performance and the scope for improvement by comparing or “benchmarking” farm performance enabling analysis of strengths and weaknesses of farm businesses. The Director of the FBS could be a very important conduit with the Colleges' network to identify and inform the focus for learning provision for students in farm business and financial management. It would also be a useful contribution to staff development at the colleges on an annual basis.

2.2 Farming Connect

Farming Connect is an integrated, Wales-wide service for farming families, with specifically tailored learning, delivered through a combination of group and one-to-one support. Its main purpose is to help farmers, foresters and their families to run their businesses more efficiently and to safeguard the future of their farms. Its aim is to work with farm and forestry businesses to ensure they reach their potential providing:

- Access to the latest knowledge, information and research on sector specific topics and opportunities to share best practice and learn from others, via a number of support mechanisms (Knowledge Transfer Programme)
- Access to approved or accredited training courses to up-skill individuals, improving working practices, helping to comply with legislation and to encourage diversification (Skills Development Programme)
- Tailored mentoring to help businesses to plan for the future and improve efficiencies. These include business, environmental, animal health and welfare, diversification and innovation (Whole Farm Plan)
- Confidential advice linked to cross compliance to help improve sustainable management and to meet statutory requirements (Farm Advisory Service).

2.3 Agricultural and Horticultural Development Board (AHDB)

The AHDB is a statutory levy board, funded by farmers, growers and others in the supply chain through statutory levies. The AHDB supports milk producers, commercial horticulturists, cereals and oil seeds and potato growers on a Great Britain wide basis and thus Wales also to an extent. Coverage for Beef, Lamb and Pig meat in Wales is provided by Hybu Cig Cymru (HCC).

There are a number of agencies, levy bodies and higher and further education service providers across Wales who carry out some excellent work who would benefit from being more “joined up” from the customer’s perspective.

Recommendation 3

I recommend that the Welsh Government puts measures in place to ensure greater integration between service providers when allocating funding. It is important to develop the success of current initiatives such as Farming Connect and build greater capacity in Wales, utilising, where appropriate, the public resources available. Alignment with other UK platforms and access to funding opportunities from elsewhere should be encouraged wherever possible.

3. Agricultural Further Education providers and the context in Wales

3.1 The 21st century agenda for agriculture

As food is a basic necessity, the agriculture food sector is expected to be more resilient than other sectors “particularly in a time of crisis” as identified in ‘The State of Food and Agriculture’ report 2009. Good progress was made in developing agriculture in the post-war years. By the end of the last century the focus had moved away from production and more towards food quality, food safety and maintaining biodiversity. Investment in agricultural research has moved away from production or applied agriculture, and recent evidence suggests that agricultural production has plateaued due to the lack of investment in the research of agricultural production. The timescale between research and its impact on productivity is generally accepted to be 15 – 20 years.

3.2 Future of food and farming

The publication of “Foresight the Future of Food and Farming” by the UK Government in 2011, based on a globally sourced evidence base, was a significant milestone in the re-emergence of the agricultural agenda. It made a compelling case for urgent action in securing the global food system and presents the challenges of “meeting the needs of a growing world population whilst critical resources such as water, energy and land become increasingly scarce”. It highlighted the need for food systems to become more sustainable whilst adapting to climate change and substantially contributing to climate change mitigations. Moreover, the report galvanised global awareness and policy formation and established an important framework upon which we all need to move forward.

Other recent reports provide further technical background to European Union policy formation which set the agenda for implementation at member state level.

3.3 A strategy for food, drink and agriculture in Wales

The Welsh Government published an action plan for the Food and Drink Industry 2014-2020 earlier this year, following a sector wide consultation which sets a clear ambition for Wales in this sector. Although the focus of this is for activities beyond the farm gate, training and skills development is one of the three overarching themes, where an emphasis is put on building a comprehensive map of the range of training services available and to identify and fill any gaps in provision. Two of its seven priorities relate to climate change and supply chain efficiency which are issues that permeate back up through the farm gate.

3.4 Developing a UK strategy for agricultural technologies

The Agri-Tech Strategy (2013) which is led by industry, in partnership with the public and third sector, aims to unlock long term investment in order to accelerate innovation by UK food and farming businesses to drive growth through the emerging global markets. Through this partnership, the government “wishes to realise its ambitions for UK farming to become more competitive, more productive, more resilient to plant and animal diseases and better at protecting the natural environment”. Furthermore, through the Agri-Tech Strategy, government wishes the UK to be at the forefront of the global race to sustainable intensification whether in the underpinning of science, efficient farming practice or the level of supply chain innovation.

The strategy has identified succession problems because experienced professionals possessing niche higher level skills are nearing retirement.

It reiterates the fact that agricultural sector workers are often highly skilled but lack formally recognised qualifications, this equates to 16% of the sector. Around a fifth of the workforce has a qualification which equates to Level 4 or above, compared to 40% in other sectors of the economy.

The report forecasts a rise in demand for people in skilled occupations which suggests an increased requirement for skills in leadership, management, finance, and marketing. Employers in the sector report difficulty obtaining recruits with the appropriate skills from the current education system.

The Lantra review ‘of 14-19 provision for the land-based and environment sector’ (2013) has identified that technical, practical and job specific skills are particularly important for individuals and employers.

3.5 Biotechnology and Biological Sciences Research Council

The Biotechnology and Biological Sciences Research Council (BBSRC) is the UK’s leading funder of academic research and training in the non-clinical life sciences in universities, institutions and centres. In its updated strategic plan, “The Age of Biosciences” 2013/2014, agriculture and food security is its strategic research priority number one. Aberystwyth University, and in particular IBERS, is one of eight institutions UK wide which receives strategic funding from BBSRC, and the only one in Wales. The broad focus of this strategic funding is the interpretation of biological, environmental and rural sciences. This is a world class resource which we need to exploit to meet the ambition of Welsh agriculture. For this reason I have explored in my review how the colleges sector can enhance its links and interactions with Aberystwyth University.

3.6 The Welsh Farming Industry Strategy

The Welsh Government is developing a strategy for agriculture. It is important that clear statements exist in this strategy in relation to developing people to meet the industry's needs.

3.7 Working Smarter

The Working Smarter report 'A report of recommendations to the Welsh Government on better regulation in Farming' (2011) explicitly reminds us of the competition in terms of time spent by farmers to conform to regulations, at the expense of their time spent on farming activities.

Key recommendations from the report of relevance to this review are as follows:

- Make available more training to provide vets and farm assurance inspectors so that they are fully informed, confident and, therefore, able to communicate best practice on regulatory requirements (cross compliance, good agriculture and environment education, animal health and record keeping etc)
- Where regulation permits, the Welsh Government must lead partners in further developing "earned recognition" as a critical factor in deciding which farms to inspect. Those farmers who have a track record of being fully compliant and who avail themselves of training and support available should not be subjected to the same inspection frequency as their less diligent counterparts
- Encourage the next generation by ensuring that the Welsh Government works more closely with Agricultural Colleges and enhancing support schemes e.g. Farm Liaison Service, Farming Connect and Young Entrant Support Scheme (YESS). The mentoring scheme under YESS should be considered as a model for wider application to encourage business growth.

The colleges are obvious centres to develop and demonstrate best practice on all issues related to compliance and should be used as a piloting tool for new regulations and inspection routines. This further demonstrates the potential which exists for a greater and more enduring role for the colleges in the delivery of the Welsh Government and, one would hope, the industry's shared agenda.

3.8 Wales Uplands Forum

The report of the Wales Upland Forum (2012) recommended that the Welsh Government should under the next RDP Pillar 2: "develop leadership and management training to support entrepreneurial business activity with special

emphasis on delivering this support to young people.” This highlights the importance of engaging with young people to drive this key sector of the industry forward.

The report also encouraged the “Welsh Government to support the development of Pwllpeirian into a centre of excellence in uplands applied research, innovation and technology transfer.”

The Welsh Government and the BBSRC are to be congratulated on working with Aberystwyth University, and specifically IBERS, to fund and develop Pwllpeirian.

It is essential that we establish a formal link between this research platform and the FE agricultural providers in Wales in order to disseminate results quickly to end users. It is also important that the end users then grab the invaluable opportunity presented to them.

3.9 Natural Resources Wales

In October 2013 the Welsh Government published a White Paper ‘Towards the Sustainable Management of Wales’ Natural Resources’ as a prelude to an emerging Environment Bill, where a relevant, ambitious and positive direction of travel was set. It is clear that agriculture is a key component of any successful development of the use of market mechanisms to pay for eco-systems services.

Given that farmers manage most of this land water catchment area and other key natural resources, we may conclude that the colleges have a key role in working with Natural Resources Wales (NRW) on its policy implementation.

The colleges network is well distributed across Wales and prospective, current and past students and farmers gravitate naturally to their local college. Working with colleges would enable NRW to influence the curriculum content and thus the early experience of students, and establish an enduring partnership with future farmers.

It is imperative, in my view, that agencies collaborate and connect with colleges and optimise the exposure of young people and continuing lifelong learners.

3.10 Resilience of Welsh farming

The review into the ‘Resilience of Welsh farming’ by Kevin Roberts (2014) amplifies the need for further development of the extension service, and the role of the farmer in the research priority decision making process. It focusses particularly on the need in the red meat sector in Wales to develop skills and increase their uptake of information and new technologies. The review into resilience also highlights the need to develop risk assessment and mitigation tools for planning and management of farms, hence a further and clear justification for more business training within the industry.

3.11 Welsh Rural Observatory report

In October 2013 the Welsh Rural Observatory (WRO) published a report “Knowledge Transfer and Innovation”. This was commissioned by the Welsh Government to analyse knowledge transfer and innovation (KTI) activities of relevance to the emerging Wales RDP and the European Innovation Partnership (EIP), and drew on a wide range of data sources, and involved communication with stakeholders and workshops. A relevant recommendation from this source is that “policy makers and practitioners should add value to the RDP by supporting greater co-operation, collaboration and co-ordination across and beyond the programme”. Moreover, it amplifies this with a supporting statement: “It is necessary to provide further integration of the fragmented elements of the advice and delivery mechanisms. This will include support for effective platforms for communication and collaboration between key actors such as Farming Connect, the Levy Bodies and Higher/Further Education Colleges.”

Moreover, it concludes that knowledge transfer / exchange is most effective through visual and applied methods. It recommends that RDP investment should be used to support and expand the existing network of demonstration and development farms across Wales. These could be run as a partnership with further and higher education centres, Farming Connect and private sector farms, which will fit with the European Innovation Partnership operational group structure and link to the Horizon 2020 research provider. This clearly directs our thinking towards a greater role for colleges. However, in order to be effective, this needs to be linked into a wider coherent structure.

Two recommendations from this source are worthy of further consideration within the context of this review:

- a) “Trust is essential in effective knowledge exchange and innovation; ensure it is there from the start and continues to be nurtured throughout”. It adds that “Building trust and social capital takes two and requires continuity. Use local actors who are well known and connected with the target audience wherever possible. Equally the perceived credibility and legitimacy of knowledge sources and actions involved is critical to their success”. This provides an opportunity for the colleges to seize but also presents a major challenge in that “perceived credibility” and legitimacy of knowledge sources are key issues. Such an approach poses considerable opportunity for the colleges in terms of developing staff and arming them with knowledge of the latest technology and further their ability to work with local farmers and groups in delivering appropriate innovative solutions. Closer working relationships with a subject specific university and levy funded bodies would address this.

- b) The Report makes another relevant observation that “activities in the rural sector are often defined by their multi-functionality and associated potential to connect across agenda for social cohesion and economic and environmental prosperity.” This adds further justification for the use of the network of colleges in a cohesive way. Those working, living and located with the problem or challenge are more likely to derive the appropriate solutions. This notion of national and local hubs working together to develop people, building trust, confidence and creating better educational and professional development opportunities in the agricultural sector, is key to the future success of the industry.

3.12 Agriculture in Wales: The next generation into Farming: Malcolm Thomas review

In his review of the next generation into farming in Wales, Thomas draws attention to a number of relevant issues. The report notes that there is a need for greater opportunities for farmers and practitioners to participate in, and to formally record participation in professional development activities. It also recognises that some sectors may be adequately catered for with existing schemes. The report recommends the establishment of a joint opportunities platform with the intention of matching prospective young and new entrants with farmers who may wish to move towards retirement. The Welsh Government has accepted this important recommendation that could do much to bring new blood into the industry.

In addition the report recommends:

- That the “Welsh Government works with Lantra to look into the possibility of developing an accredited CPD scheme for the red meat sector in Wales”
- It highlights the need for more flexibility and accessibility to enable learners’ already in employment to access continuing higher education qualifications and recommends that: “Higher academic institutions should review their current provision to ensure that a flexible and accessible route to qualifications is available
- Focussing specifically on YESS, the report recommends that in addition to the existing skills, all successful candidates should in future attend compulsory learning modules in succession planning and business management and leadership.

3.13 Future of Farming Review

This review was commissioned by DEFRA and parallels those reports noted above which relate specifically to Wales. The review sought views of routes into the sector, and on education and skills. The review refers to a DEFRA Farm Business Survey (2013) which hinted at a loose link between an increase in the age of farmers and a decreasing willingness to continue to undertake training which might support

productivity and innovation. Consequently, it supports the view from my own interviews, that our young generation of entrants are more tolerant to risk, engender a greater willingness to undertake training and are more open to adoption of new technologies and new ideas.

3.14 Review of Farming Connect

Gareth Williams' review of Farming Connect published in 2014 makes a number of clear recommendations on what the future Farming Connect programme should include, including the eligibility criteria being widened in order to enable more people to access the service. This would include knowledge transfer and subsidised services, including the Skills Development Programme. The continuation of the brand "Farming Connect" and its services is imperative to the industry, through ensuring that it is market-led and able to support farm and forestry businesses through the current periods of change. Knowledge transfer and innovation are critically important in helping to further professionalise the agricultural industry, embedding a culture of continuous professional development and an improved focus on farming as a business. It is essential that farmers, foresters and food businesses embrace the opportunities that the new RDP generally, and Farming Connect specifically, will provide.

3.15 Discussions with stakeholders

During the consultation process, I have valued the constructive and informative exchange of opinions and ideas shared amongst the stakeholders. These reflected a passionate and genuine wish for all of us to grasp the opportunity provided by the review to emerge with an improved agriculture education process in Wales that, in time, might be perceived as an example of excellence.

The industry is less clear on the current coherent progressive nature of qualifications; this is primarily due to the retitling of qualifications. Although, it was very supportive of the need to exploit a continuous learning approach so that full-time, part-time and work-based learning achieve end goals. Industry also held a view that learning providers need to be more flexible in their curriculum structure and delivery, and that experiential learning and its accreditation for continuing qualifications should figure strongly in the process. A view also emerged of a missed opportunity for extended learning and cited the experience of consultants working with farmers to develop business plans, for example YESS or other groups. It was felt that a great deal of learning and understanding could have been gained by re-engineering the process. Moreover, the experience could have been used to enable farmer participants to gain credited learning achievements and/or CPD points.

A view emerged from the industry that the current provision is education driven and that the industry does not appear to be able to exert a meaningful influence. I note

that this applies to the FE and HE sector rather than the training and skills focus of Lantra.

Generally, there is a positive response to discussion and a genuine wish to develop and participate in a professionally perceived farming industry. This view is possibly held more strongly amongst the younger members of our industry, and those who already hold an existing qualification, who may appreciate and can more easily allocate a value to professional development. Anecdotally, there is a long held view that young people are more likely and willing to enter and seek a continuing career in an industry perceived as genuinely committed to professional development.

There was strong support for further development of the colleges and university network that serves agricultural education. Several comments centred on their rural location, understanding of farm business, natural gravitation for rural youth and a wish and willingness of former students to return to development functions and events. This perceived familiarity with people or a location is important and further amplifies the case to build on the colleges' location to establish multifunctional hubs collaborating with various interested parties and agencies.

The number of reviews commissioned by the Welsh Government and others demonstrates and acknowledges the importance of agriculture in its broadest context and the attendant wish to ensure that policies are appropriate to deliver applied research, knowledge exchange, education and professional development.

I am led to the conclusion that the colleges and universities in Wales with a land-based element in their mission are a crucial element of the future prosperity of the agricultural and other rural industries in Wales.

Given the challenges facing mankind in feeding a future 9 billion population, it is appropriate to pose the following questions:

- Is agriculture and food education too important to be left to market forces and be subject to the same common education and funding framework which exists across other sectors?
- Should some form of intervention or additional support be considered?

Much has been articulated in the very recent period about research, development, extension and education linkage. Indeed, in the opinions and views being expressed about knowledge exchange and innovation, I find it difficult to establish any meaningful conceptual boundaries between knowledge exchange, advanced training/education in technology and business and innovation. Funding sources seem to set artificial boundaries resulting in an unnecessarily fragmented approach, to the detriment of the end user.

The references to recent studies emphasise that higher education, further education, research and its development to technology and transferability to the end user is very closely linked.

Moreover, there is an apparent need to ensure a structural linkage of those organisations involved with this delivery process and a better dialogue between the providers and the industry end users. Coherence, complementarity, capacity, capability and co-operation are required to develop the provision in Wales.

3.16 Further Education colleges and the research development and extension agenda

Pollock (2013) articulates clearly some of the challenges posed by the fact that, in the UK, we do not have a linked up research, development, extension and education system. He notes that agriculture needs to look ahead and develop a framework for research and development that identifies the key knowledge and skills gap that are likely to reduce competitiveness in 20 or 30 years' time. Furthermore, in discussing the need to ensure that new knowledge and skills reach the end user more effectively and informatively, he notes that whilst there may be resources to ensure the generation and transfer of new knowledge in terms of profitability, he is concerned that "no-one is considering how to implement best practice in terms of balancing production gains against impacts on ecosystem service provision, or even balancing the costs and benefits of alternative land use systems."

Farming in Wales is based predominantly on livestock production, dairy, beef and sheep. Recently the International Journal of Animal Bioscience 'Animal' (August 2014) devoted a whole issue to the challenges of integrating farm animals into agro ecosystems, and in particular to the design and development of innovations, adaptations and resilient farming systems.

Dumont et.al. (2013) identify five key principles to extend ecological thinking into animal production systems:

- adapt management practices aiming to improve animal health
- decrease the inputs needed for production
- decrease pollution by optimising the metabolic functioning of farming systems
- enhancing diversity within animal production systems to strengthen their resilience
- preserve biological diversity in agro ecosystems by adapting management practices.

The colleges could play a key role in developing and demonstrating emerging innovative applied scientific thinking into holistic sustainable farm systems. The resources available at IBERS and the colleges working together with the Welsh

Government and other agencies could provide an excellent platform for taking our industry forward.

Dumont et. al. (2013) infer that traditional top-down agricultural research and extension services have had limited success in the development of new approaches, and indeed suggests that a new approach to the whole research, development and innovation chain is needed to bridge the gap between science and practice. They foresee a need to create initiatives at local, regional, national and/or international level. The recently launched European Innovation Partnership (EIP) provides an encouraging directional change.

The time is appropriate for the organisations in the research, innovation, extension and education chain in Wales to get together to define an enduring model of engagement. The key agricultural colleges could and should be a key component of this continuum.

Here, in my view, is an excellent opportunity to exploit the resources of college farms. They could demonstrate current best practice whilst also developing a more futuristic approach to farm management and land use (funding would need to be available to support this), and thus remain connected to their local audience and furthermore, provide valuable input into the research strategy agenda. They could add weight to the farmers “pull” to reconcile the science and policy “push” in the knowledge exchange process.

To this end, there is significant scope for college farm resources to contribute to, and to be key actors, in the development and implementation of the EIP for agricultural productivity and sustainability, and associated Operational Group (OG) development within Wales.

The EIP aims to enhance productivity and efficiency, whilst ensuring sustainable resource management, preservation of the environment, climate change adaptation and mitigation and building bridges between cutting-edge research knowledge and technology and farmers, businesses and advisory services. EIP seeks to tackle the gap and time lag between the communication of research needs to the scientific community, the provision and dissemination of results and the application of innovative approaches to farming practice on the ground.

College farms or other similar public resources with appropriate links to cutting edge research knowledge and expertise, such as IBERS, and their role in demonstrating best practice in farm management and land use, will be uniquely placed the resulting interaction of technical expertise, resources, and learning entities (incorporating the full spectrum - from students through to established, experienced farmers). Their role could extend beyond demonstrating best practice to providing an open forum for the communication of farmer research needs to the research community, supporting and animating the embryonic development of bottom-up initiatives, and, furthermore, undertaking the initial application of resulting innovative approaches on the ground,

which may be beyond the realistic expectation ordinarily demanded of a typical commercial demonstration farm.

3.17 Challenges for Further Education colleges with agricultural resources

Farming and food are intrinsically linked as food production. One of the colleges in Wales hosts both an agricultural and food development faculty, and very likely a second centre will soon have a similar resource. This co-location is critical so that we can expose young people to the new opportunities which the food supply chain can offer.

Getting the collaborative structure within and between the colleges sector is critical to delivering a responsive 21st century agriculture industry.

The Welsh Government has a vision and has committed significant funding support to our research base and the challenge is for the colleges' sector to establish a collaborative means of working:

- together to complement strengths and ensure geographical coverage with the universities in Wales, particularly the Aberystwyth Bangor agricultural, environment and biological axis - to draw down its science into sustainable technologies at farm level
- with universities to develop a seamless pre-requisite qualification and credit system on a full-time, part-time, work based and online provision
- with Farming Connect and where possible share a similar footprint of demonstration farms and discussion groups
- with centres from outside Wales to address any gaps in provision, e.g. agricultural engineering, precision farming, farm buildings, land management, animal health and veterinary work

3.18 The relationship between the Welsh language and farming in Wales

The report remit did not include the need to consider the Welsh language specifically with regard to the provision of agricultural education in Wales.

The relationship between the Welsh language and farming in Wales has been recognised. Hughes, Midmore and Sherwood (1996) posited that 'the existence of a Welsh speaking agricultural community helps to sustain a wider infra-structural framework in rural Wales: a framework which reflects and supports the linguistic diversity of the area which it serves' (1996: 21). The Welsh Assembly Government (2003) has consistently recognised the link between family farms in Wales and the

Welsh language, stating, 'the links between farming and the Welsh language are strong. Over half of those who work in agriculture in Wales speak Welsh and farming is one of the Welsh language's strongest language domains. The Assembly Government's strategy for agriculture, Farming for the Future recognises this explicitly. The central aim of the strategy is to help Welsh agriculture adapt in ways which will enable as many family farms as possible to survive and emphasises the social dimension of sustainability. The importance of farming to the Welsh language is therefore already a part of mainstream policy thinking. Within this policy framework, Farming Connect will continue to play a key role in helping not just farmers as individuals but farming families more generally to access the information, ideas, advice and skills that they need to make a better future for themselves' (2003: 27). The 2012-2017 Welsh Language Strategy - *laith Byw: laith Fyw* - formally recognises the YFC as Welsh Government 'language partners', who now receive some support to promote the Welsh language at the community level.

Given that the Welsh language cannot legally now be treated any less favourably than the English language, then the agricultural education strategy should reflect this.

Recommendation 4:

As an element of the emerging strategy for Welsh agriculture, a group should be established to develop an Agricultural Education and Development Strategy for Wales.

The group initially should be on a Task and Finish basis to produce a strategy and action plan. Thereafter, it could be reconvened periodically (every 2 years) to monitor and evaluate progress and uptake of the strategy.

Scope of the group: Its strategy should adopt the broad inclusive definition of skills noted above; have a clear view of the capacity and capability resources in Wales and where and how these shortcomings can be overcome. In particular there is a need for robust data on industry demand for personnel and how far such requirements are being met. The focus should be agriculture "plus" rather than the broader definition of land-based which is the Lantra footprint. Appendix B does provide an existing framework which the group could adopt as a point of departure.

Membership should be from amongst the FE & HE sector in Wales, Lantra, NFU Cymru/FUW, NRW, Welsh Government, including Farming Connect, YFC, AHVLA, HSE, AHDB, HCC, Dairy Co. BPEX, RWAS.

Recommendation 5:

It is recommended that the Strategy Group should pay particular attention to structure, content and delivery challenges of Level 3 provision in agriculture. It is essential that the qualification decided upon meets the requirement of industry and National Occupational Standards, in addition to the usual educational objectives. In the medium term, it would be desirable to establish this level of qualification as a minimum entry requirement for those wishing to run a farm business in future. Furthermore, the strategy group should also ensure that the Level 4 provision fulfils the technological demands of various agricultural sectors thus enabling continued learning opportunities in those technologies allied to managerial training.

Recommendation 6:

Once the main providers noted in recommendation 2 have formulated a collective approach and close collaboration through learning, development and technology exchange hubs, they need to establish a coherent working relationship with those Universities in Wales with strong agricultural education and research specialists to exploit their joint resources to the full and maximise opportunities. The colleges need to establish within their hubs close links with the Farming Connect service in Wales, the key levy funded bodies supporting Wales and other relevant organisations, including NRW. It is relevant to consider forming hubs to cover north west, north east, south west and south east Wales.

Recommendation 7:

In order to embrace the activities related to the proposed broader remit of the FE colleges sector, there is a need for staff development in innovative agricultural technologies to complement their pedagogic expertise. The relevant colleges should engage in discussions with IBERS to adopt the Advanced Training Partnership (ATP) in order to provide for the technical and professional development of its staff in grassland and ruminant agriculture. The ATP for staff could also tap into similar arable and food initiatives operating out of Nottingham and Reading universities respectively.

4 Employment and Training Issues

In employment terms, the size of the sector in Wales is as follows:

Industry	Business		Employment	
	No	%	No	%
Agricultural Crops	320	2	650	1
Agricultural livestock	12660	69	54750	60
Production Horticulture	280	2	2,500	3

Source: Lantra Wales Fact Sheet 2010/2011

Agriculture dominates the Lantra land-based industries' foot print. The Lantra Wales Skills Assessment (SA) 2012/13 report provides a detailed estimate of current patterns, future trends, and focusses on key issues impacting on the sector. These includes encouragement of new entrants, combating the effects of an ageing workforce, advancement of technology, economic issues, biosecurity, animal health and welfare, climate change and health and safety.

The further education colleges in Wales which offer agricultural provision should be key players in the delivery of this agenda.

In order to meet these challenges appropriate skills need to be articulated. The solutions offered to the sector include:

- bite-sized unitised learning - credit based
- Knowledge Transfer activities, awareness raising
- recognition of continuous professional development (CPD)
- accurate careers guidance information and resources.

4.1 Lantra UK Land-based and Environment Sector: Skills Assessment Update 2014

This most recent report recognises the need for a fresh analysis of data to estimate how many entrants the agricultural sector needs, and the relevant level of skills they require now and in the future. This may have been in response to the implied criticism of available data noted in the Future of Farming Review Report 2013. The report covers the UK Land-based sector, rather than Agriculture in Wales; nonetheless key trends are relevant to Wales. For example, 95% of businesses in the sector employ less than ten staff; 85% of businesses in the sector employ less than five staff, together with a higher proportion of self-employed people (employers and employees).

The report highlights a key trend in that:

- 30% of the workforce in the land-based sector are over 55 years of age
- 54% of the workforce in the land-based sector are over 45 years of age.

These figures present serious implications on demand for new entrants, progression opportunities as well as training/education needs. A serious commitment to professional development is also required for those already in the industry to keep up with the evolving technological developments and business competitiveness.

4.2 The Agri Skills Forum

The Agri Skills Forum was established in 2008. It has an extensive membership. In 2012 the forum published 'Towards a new Professionalism: The skills strategy for agriculture and horticulture'.

This strategy took a UK wide perspective whilst recognising fully the devolved responsibility and subsequent delivery within Wales, Scotland and Northern Ireland. However, it did not "seek to develop country specific action and delivery plans, but developed a framework which could be tailored for country specific requirements". It is not clear how, if at all, these were taken forward or by whom within a Wales context.

The Agri Skills Forum presents some important definitions and emphases, which are highlighted as they present key guiding principles upon which to define future actions:

- Professionalism is defined as engagement in an activity for gain or reward and with a high level of competence that is clearly demonstrable inspiring confidence
- The strategy took a broad inclusive definition of skills including technical, management and entrepreneurial skills, initial and life-long learning (CPD), informal and accredited learning; higher and further education, namely learning regardless of level or mode, knowledge and technology transfer.

It is important to emphasise this broad definition of learning and its inclusion of many activities to a common purpose, and this is an approach which should be promulgated and applauded. The difficulty with harmonising and delivering a coherent offer to industry is that funding providers tend to be fragmented, as delivering either training, higher education, further education, knowledge transfer, or continuous lifelong learning and professional development.

There is a need to structure agricultural education in a coherent and collaborative way, to optimise learning opportunities for end users. This further amplifies the need

to develop an agricultural education strategy for Wales and to create a complementary network of delivery providers with good geographical coverage.

4.3 Lantra Wales Skills Assessment

Lantra produced a comprehensive Wales Skills Assessment in 2011, where the industry articulated the required training and skills for its employees but also the skills required of the employers themselves. The challenge is to reconcile the educational scope and optimise the industry requirements in delivery.

There is in my view an apparent need for local learning facilitators who can signpost:

- type of activity required
- provision available.

In Wales there has been a decline in the number of new entrants into the agricultural industry over recent years. Factors influencing this include increased mechanisation, economies of scale and increasing specialism. However, negative public perception of farming may be contributing further to the decline, and those in the industry need to improve levels of activities to deal with increasing scale complexity and the demands of a multifunctional agriculture.

Thus it is a concern that only 12% of farm businesses in Wales have a training plan compared to a UK wide figure of 26%. However, a more recent report provides a much more positive and upbeat view of training needs and participation.

This recent report “Your voice, your future – Welsh dairy industry” (2014) prepared by Coleg Sir Gâr’s Dairy Development Centre in conjunction with DairyCo and Farming Connect illustrates the benefits of the colleges and industry working together for a common purpose.

The study found that 70% of dairy farmers had attended training and/or accessed advice in the past 12 months. It also illustrated that farmers are fairly clear in what training, information or advice they require in future, with farms of all herd sizes insisting on more training and advice on cow fertility and breeding, with many wishing to develop their skills in grass and forage management. Interestingly, farmers with large herds demanded more information on business planning and financial management.

The report further amplifies that attendance at discussion groups are viewed as having the greatest impact on the profitability of businesses, followed by on-farm events. Providers should recognise this and seek to work in a coherent and co-operative way to deliver that which works effectively.

4.4 Agricultural Sector (Wales) Act 2014

Following the Royal Assent of the Agricultural Sector (Wales) Bill, the Deputy Minister for Agriculture and Fisheries launched a public consultation on the constitution and functions of the Agricultural Advisory Panel for Wales (AAPW). This replaced the previous Agricultural Wages Board which ceased to exist in England but was supported in Wales. One of AAPW's four functions is to promote careers in agriculture.

It is relevant to draw attention to some key statements from the consultation which is pertinent to this review. In her forward, the Deputy Minister recognised the importance of the agricultural sector to the Welsh economy and thus the importance of an increasingly resilient and sustainable agricultural industry in Wales with well trained workers and professionally run farm businesses that allows the industry and individual businesses address present and future challenges.

The Deputy Minister further emphasised the need for the 2014 Act to preserve and develop a career progression regime based on relevant vocational qualifications, encouraging professional development and the enhancement of skills needed for the future functionality of the industry. There is a recognised positive relationship between training and productivity.

Farming Connect has enabled a coherent gateway to a number of services for farms. It is relevant to consider an extension of this coherence to embrace the colleges, and levy funded bodies in key subject areas of agriculture, rural and food within Wales.

4.5 Continuous Professional Development

There has been a growing level of interest in professional development within the farming industry in recent years. Professional development is perceived as a preferable term to training. Terminology in this instance is important; training conveys the impression of bringing an individual up to standard, whereas professional development is seen as enhanced learning.

There is an increasing level of activity amongst Welsh farmers and employees in developing and continuing their professionalism. These activities take many forms i.e. technical events, Farming Connect events, sector specific activities by levy bodies and by processors to improve marketability of stock. However, much of this is going unrecorded and is unrecognised.

The main early driver of professional development was the necessity for individuals giving crop protection advice to be accredited as being appropriately qualified and capable of doing so. Formal qualifications defined by the industry had to be obtained to enable membership of a professional register. Thereafter, regular attendances at appropriate professional updating events were recognised by CPD points, and a

certain number of points were required within a prescribed timescale to remain on the professional register. In the agricultural sector BASIS provides the best example having been in operation for over 30 years. This organisation has overseen the professionalising of all aspects of crop protection advice. Assurance schemes in the combinable crops sector also sought to ensure that agronomy advice was traceable to an approved professional.

Various modules for purposes of the BASIS professional register were, in addition, validated academically and credits could be accumulated to qualify for a post graduate certificate or diploma in agronomy. The work of BASIS in conjunction with Harper Adams University, in linking a formal qualification to professional development, has much to commend it. Extending the notion of CPD on an industry wide basis is gaining momentum and is amplified later in this section. The earliest sectors to move in this direction were the poultry and pig sectors, with a focus in the main on developing practical and technical skills.

AHDB launched a consultation on a draft skills strategy for agriculture and horticulture in August 2013. This was a proposal for the integration and implementation of professional development. An action plan derived from this: Professionalism in Agriculture People Progression Profit was published in November 2013 (appendix B).

The pig industry levy body BPEX, developed a programme of training and qualifications that was practical and tailored to the pig industry. This was a good model upon which other sectors could develop similar initiatives. It provides a structural development scheme at various levels which is supported by formal training and qualifications accredited by City in Guilds. All of the activities are recorded and formally recognised in a Pig Industry Professional Register (PIPR).

The dairy sector has developed Dairy Pro, which is the professional development register. Dairy Co. and the Royal Association of British Dairy Farmers (RABDF) are continually addressing types of activities which the industry requires for professional development. The target number of 500 members was exceeded in the first year and a new target of 1500 members was set by the end of 2014 across Wales, England and Scotland.

In Wales, the 'Improving Welsh Dairy Supply Chain' project has commissioned a study to ascertain appropriate general business and leadership development opportunities for progressive dairy farmers. This is evidence of a genuine demand for professional development that is tailored directly for the industry.

The beef and sheep sectors have not yet progressed into any formal development such as those noted above in dairy and pigs. Evidence provided by Farming Connect indicates that farmers are willing participants at technical and development events disseminating knowledge transfer and innovation messages. However, farmers are less likely to formally record and have any involvement with a professional register.

Examples of current CPD programmes and recording systems in agriculture are as follows:

- BASIS professional register
- Fertilizer Advisors Certification Scheme (FACTS)
- Pig industry Professional Register
- Dairy pro (in conjunction between Dairy Co. and BASIS)
- Poultry passport.

The Agri Skills forum report implores the industry to work with Lantra to influence the developments of a recording and validating system. Training and development can be recorded in a common and transferable way to assist career progression and reward lifelong learning.

Such a register would be very valuable so that we can:

- Note changes over time in the numbers participating and the number of points acquired
- Provide intelligence for providers as to what the industry appears to need. It is difficult to distinguish between “wants and needs”. This notion of learning needs “just in time”, just for me” appropriately delivered, is important particularly for farm businesses which, in the main, are “micro” where time is at a premium and any surplus time is usually taken up by committing to statutory obligations.

4.6 Benefits of a coherent approach to Continuous Professional Development

At the strategic level a coherent approach to CPD provides government and other agencies with the assurance of a capable and committed delivery partner (i.e. the farming industry).

It could be adopted as a measure of earned recognition to re-assure those overseeing compliance and quality assurance.

At the Industry level, it provides:

- Evidence of an industry committed to developing its people and thus attractive to new entrants for retaining existing people and thus help perceptions of industry as a progressive one
- Evidence for all participants within the supply chain, or those engaged with assurance of standards, of a professional approach, which should engender a climate of trust and mutual advantage. It also conveys to the wider stakeholders and community that this is a profession committed to providing

quality products, food security, animal health and welfare and sustainable use of natural resources.

At the Farm level, it provides:

- A better understanding and implementation of new technologies to gain competitive advantage
- Improved business and financial understanding and performance
- Enhances the farm as a safe place to work
- Motivates owner(s) family and workforce in the achievement of common goals and improve business performance
- Improved resilience of the business
- Better people leadership and managerial skills
- Improved approaches to self-evaluation and enhanced development
- Enhanced business scale and exploitation of diversification potential.

4.7 Towards a National Framework for Continuous Professional Development

In order to formalise what is already taking place, incentivise new participants, encourage new entrants and increase participation of those already enrolled, there is virtue in establishing a self-contained process within Wales. There is a good deal of positive support for this from discussions with various stakeholders, in particular the younger age groups in our industry.

Given that in Wales dairy, beef and sheep production forms the major share of farming, much of the professional development activities are indeed common or transferable I am of the view that greater ownership, coherence and development could be achieved by adopting such an approach. The framework would be compatible with sectorial activities and those in England, Scotland, Northern Ireland and further afield.

There are a number of components to an accredited CPD framework which need consideration and agreement, but there is much in place already which could be built upon to achieve a Welsh Farming National CPD register.

4.8 Certification of certain standards

I firmly believe that a voluntary approach is preferable to a statutory approach at this juncture. My primary reason for this is that there are number of challenges in establishing such a process which demand goodwill and a harnessing of genuine support for a national process. A statutory approach would I feel erode goodwill. We need to develop and build on experiential good practice that already exists in sectors of the industry.

I commend that we adopt an industry wide approach to establishing a national register to record an increasing and evolving level of CPD activity in Wales. Participation should be voluntary, but with strong farming union and sector support. The notion of earned recognition should provide some incentivisation to participants, and the industry should embrace the opportunity to demonstrate competence as a trade off against legislation for compliance or farm assurance.

It is very important that providers attempt to demonstrate a clear business benefit of participation rather than it being seen as a cost – in either financial and/or time terms. Certainly farmers have made clear in their feedback to knowledge transfer events that the presenter should make clear the business benefit of adopting a new technology. The industry is very responsive if a clear cost-benefit can be demonstrated. That said, participating in training should be seen as a genuine cost of production by retailers and be recognised in their pricing of farm produce.

4.9 Possible additional benefits of Continuous Professional Development

Anecdotal evidence suggests that those who have undertaken some form of education or training are more likely to seek out further development opportunities. Similar evidence suggests that employees evolve during the process from that of being sent to train to that of wishing to take control of their own personal development. A consequence of introducing a national approach to CPD would be an increased wish, particularly by younger age groups, for this learning to be recognised within some form of continuous learning framework.

It is possible that CPD activity will generate increased interest in participation in continuous lifelong learning, based on accumulation of credits towards an educational qualification or an industry or sectorial recognised professional qualification. The latter would enable activities such as Agri Academy participation, Nuffield Farming Trust Scholarship, the HCC scholarship and other similar initiatives being credited formally. It is very important that we promulgate these leadership development programmes and encourage participation in this important agenda. The Institute of Agricultural Management has launched a professional recognition process (P.Agric). This may in future develop into a formally recognised Chartered professional status, this should be encouraged.

4.10 Professionalism of Welsh farmers

I am of the opinion that the very best Welsh farmers are equal to the best globally in technical, business and product competitiveness. They are also operating at greater productivity levels with greater responsibilities in an increasingly competitive supply chain than previously. The pace of change and the challenges of 21st century agriculture makes it incumbent on all of us to recognise the need to embrace change and continuous improvement. The challenge is to up-skill the workforce reducing any skills gaps.

Chris Pollock (2013) notes the need to ensure that innovation reaches further down the producer profile than in the past. This is particularly so when the impact of non-engagement extends beyond the individual business e.g. greenhouse gas mitigation strategies and animal health issues.

The AHDB consultation emphasises that the success of a strategy is dependant on a robust partnership with all parts of the supply chain including industry, regulators, government, sector skills councils, learning providers and knowledge transfer organisations. Moreover, and imperatively, their consultations with stakeholders have led to the conclusion that skills development must be pulled together into an overarching but non-specific and voluntary strategy. I am persuaded by these arguments that a compulsory CPD programme is not recommended at this stage and should be:

- non-specific - each sector needs to develop their own implementation plans
- voluntary - any attempt to make the strategy compulsory will be met with resistance, resulting in skills development remaining in the cost and compliance category rather than being seen as a benefit to the business and to the individual.

Recommendation 8:

I recommend that a database is created to collate and record all students from Wales engaged with FE and HE agricultural provision. It is difficult to gain any estimate of demand for people in the industry, and hence makes any reasonable assumptions on supply meeting the demand difficult. This data would enable better estimates of demand for new entrants, progression opportunities as well as training and education needs.

Recommendation 9:

I recommend that a serious commitment to professional development is required for those already in the industry to keep up with the evolving technological developments and business competitiveness.

Recommendation 10:

The Welsh Government should invite tenders to develop and operate an accreditation framework for all Continuous Professional Development activity in Wales. The framework will build on and be compatible with the developments on skills passports as well as those existing sectorial CPD programmes e.g. Pig Pro and Dairy Pro. The framework should recognise the considerable comparability between the dairy and red meat sectors in Wales and should have support of these sectors and of the farming unions and other relevant organisations in Wales. At this stage, it is my considered view that we should adopt a voluntary, rather than compulsory, approach to CPD.

Recommendation 11:

In future, an increasing amount of learning, professional development and technical and business information gathering will take place on the new media platforms. This will require good rural penetration of high speed broadband, easily accessible online learning and coherent signposting to technical data held online by various organisations. I recommended that the colleges and university sector conduct an audit of sources of information on online learning material (this to include specific applications) in the area of farm business and financial management and marketing. Should there be insufficient online material available in this regard, I recommend that the Welsh Government should tender for the development and delivery of such material.

Recommendation 12:

I recommend that personal development plans should be encouraged as prerequisite to having courses funded by Farming Connect. We need to promulgate the importance of personal development plans to being as relevant as business plans. This is something that the Welsh Government should do working side-by side with other key stakeholders including the farming unions, CLA, YFC, Lantra, Levy Bodies, RWAS.

5 The people supply chain

This review is essentially about people, and the need to recognise the importance of human capital when reviewing the role of colleges in developing and preparing people for a career in the industry, allied to the aim of establishing a culture of continuous improvement and professionalism, both personally and in business performance. Practical farming in Wales remains primarily an inherited industry. The comments that follow, however, are equally relevant to those sons and daughters of farms and to new entrants from a non farming background.

5.1 Age group 8-13 year olds

Aspirations and ambitions for career direction and achievement in education are often established in the late primary and early secondary school stages. This is particularly so for the sons and daughters of farmers or those people associated with rurally based family businesses. It is important that this is nurtured and encouraged in schools and the careers advisory service, every opportunity needs to be taken to endorse and reinforce this ambition. Outside of the school system, rural events, agricultural shows and, in particular, the Royal Welsh Show and the Young Farmers Clubs (YFC), can assist in reinforcing the excitement and diversity of skills, activities and career choices in the rural scene.

5.2 Age group 13-16 year olds

The 13 to 16 age group is the time at which early ambition is consolidated into positive direction, where choices are made in terms of vocational routes, academic routes or a combination of both. It is important for those giving advice and support to this age group to support the decision to study agriculture as a strong career choice. Also, that both vocational FE, followed in some cases by participation in full time HE as well as the direct HE route, will lead to similar destinations and career opportunities.

Ultimately, it is imperative that we realise that many sons and daughters of farmers, and indeed others, possess a real passion for the practical and often have difficulty in appreciating the relevance of the theoretical aspects of learning. Clear farming and food applications should feature in the science syllabus in schools in addition to specific agricultural science options of study. Clear signposting and discussion of option choices are crucial at this stage, providing strong, clear and positive career advice in farming as an academic option is crucial. The provision of taster courses for FE or HE begins to emerge at this stage and the colleges working with the schools are in a very strong position to influence.

5.3 Age group 16-19 year olds

By 16 to 19 years of age the choice has often been made and young people have segregated their aspirations and preferred routes of study to either higher education, further education, full-time or work based learning and apprenticeships.

Those in full-time education in this age profile need to be encouraged to embrace a culture of continuing learning, the educational experience up to this stage is therefore crucial in imprinting this need. The colleges in Wales now work with HE providers in developing progression routes to HE on a full-time or part-time basis, and individuals may choose to top up to degree level at a university as part of this linkage.

Those on full-time higher education courses at this stage become more aware of career options, and can change from an aspiration of returning home to farm immediately to a choice of working elsewhere for some years before returning home. Economic pressure at home sometimes forces the choice earlier than may be beneficial. It is important to highlight the value of working for another employer other than a parent, and this is supported with the option of a gap year on specific courses.

The three points I wish to emphasise:

- there is a very strong work ethic amongst sons/daughters of farmers or small businesses, and this personal quality is highly sought after by employers from outside the agricultural sector
- this work ethic means that students from this background, particularly at FE level, can become disillusioned with study if the timetable and curriculum content does not occupy and motivate them fully
- it is important to recognise and make clear to young people who do not study agriculture initially that there are many generic/transferrable features in education that can be quickly and efficiently adopted if they decide to return to farming at a later stage. This route back into farming is important.

5.4 Age group 21+ year old

The provision for the 21+ group needs to cater for further continuous learning and/or professional development. An industry which is perceived as being professional and committed to personal development is perceived as a very positive one both by aspiring entrants, and also in retaining those people already in the industry. Provision needs to be made for opportunities for those entering from other sectors with or without qualifications to acquire appropriate skills. Developing people through work is preferable to developing work through people.

5.5 Who are the influencers?

- **Wales Young Farmers Clubs**

I cannot overemphasise my support for this organisation within the whole complex agenda of developing, aspiring, directing and empowering young people who wish to enter the industry. Moreover, the YFC has amongst its members many who subscribe to the movement's agenda but have chosen careers as teachers, solicitors, accountants for example. This mixture of professions and careers enriches and informs all concerned and there is no doubt that the YFC is in a key position as influencer of choice through the varied careers of its older members.

The YFC has over 6,000 members, half of whom are under the age of 18. The organisation provides a range of opportunities to develop and challenge individuals. In addition, a number of key agricultural and business skills are developed during their involvement with the YFC, which adds to confidence, self-esteem and influencing skills.

The YFC has had the foresight to accredit some of its provision to ensure proper recognition. The YFC is often the only experience and opportunity to develop talents and skills off farm for those (not an insignificant number) who may choose not to pursue further education/higher education. That the YFC fulfils a key role in aspiring and developing rural youth is in no doubt. I applaud those local authorities and the Welsh Government who support the organisation with an allocation of funding. Likewise, I was surprised and disappointed to note that two important local authorities do not feel able to support the YFC in Wales. Importantly the YFC office holders held a view that the movement feels that it has a strong voice in agriculture but not in education policy formation and implementation. The linkage between the YFC and the college sector is very apparent. The headquarters in Builth Wells is leased from Neath Port Talbot College (NPTC) whilst the YFC offices of Gwent, Glamorgan and Clwyd are co-located on agriculture college sites.

- **Careers Wales**

Careers Wales has a key role in providing advice and guidance of career opportunities in the sector. In discussion with various stakeholders, I have been left with the firm impression that they are under-resourced and thus the sector needs to work with Careers Wales to ensure that the best intelligence is being used by advisors and that young people receive the best advice in relation to farming.

5.6 The industry

There is no doubt that the farming industry has a key role in promoting agriculture as a career of choice. The industry, through NFU Cymru and the FUW, its levy funded organisations and partners along the food chain, do work well together to convey (mostly) positive messages and images. The challenge often is to ensure coherence and not fragmentation.

AHDB have collaborated with key educational organisations on the proposed new National Curriculum in England resulting in food production becoming compulsory, and have added their support also to the Bright Crop Careers initiatives.

They have delivered in partnership with the British Nutrition Foundation the educational portal which has been expanded to include new areas for farming, and food production and advanced level resources. This online suite of resources covers the 3-18 years age group and is an invaluable educational resource.

5.7 Farming and Countryside Education

Farming and Countryside Education (FACE) was established initially with funding from the NFU and the Royal Agricultural Society of England (RASE), and is now the major financial supporter. The FACE has a range of membership organisations representative of the farming and food sector. They work with many of their members to create a one-stop-shop of learning resources and materials to assist teachers to navigate and select from the wealth of support on offer for lesson planning, activities and educational visits. There is sometimes virtue in separating the messenger and the message in that FACE learning material is perceived as objective, factual and representative of the sector.

FACE has developed a new initiative named Countryside Classroom building on its success within its “Growing Schools” initiative. The latter’s objectives include:

- To achieve a national commitment to preparing young people for future challenges and awareness of the need and opportunities in farming, food and the countryside
- To strive for improved uptake of relevant learning opportunities by teachers.

In developing this as a Countryside Classroom, FACE wish, in partnership with others in the food supply chain, to reach all schools in England with the focus on the following key areas:

- the importance of global food security
- agri-environment
- mitigating actions for climate change
- obesity and health
- choosing a career in agriculture.

Recommendation 13:

It is recommended that the strategy group engages in an informal discussion to establish momentum within the school curriculum for a more widespread adoption of a GCSE in Agricultural Science. Moreover, it is recommended that teachers in Wales should be given the opportunity to embrace examples from agriculture, food and natural resources more broadly in school curriculums. The profile of staff development in agricultural education should be reviewed within the school and FE sectors.

Recommendation 14:

I recommend that a service provider takes the leading role working with NFU Cymru, FUW, YFC, the Royal Welsh Agricultural Society (RWAS), Lantra, Careers Wales and FE colleges in Wales to work with FACE to improve impact and dissemination of materials to schools, thus enabling them to make a case for the industry and present it as a career of first choice. An ambassador programme could be developed to showcase people who have developed a successful career and then seeks and takes up opportunities such as participation in the Farming Connect Agri-Academy, Nuffield Farming Scholarship and other initiatives to encourage and inspire young people into the agricultural sector. The RWAS maybe in a position to influence other agricultural show societies within Wales to ensure a network of coverage for all schools in Wales.

Recommendation 15:

The RWAS should build on the current co-location of Lantra, Wales YFC with other land-based colleges and universities exhibiting at their annual show to develop the concept of a “learning village” to initiate, develop and reinforce the importance and relevance of our sector as an aspirational career.

Appendix A: List of contributors

Name	Title	Organisation
Mr Jo Banks	Head of Youth Support and Guidance	Welsh Government
Mr Jim Bennett	Principal	Coleg Gwent
Mr Daniel Corlett	Chief Executive	Farming & Countryside Education (FACE)
Andrew Counsell	Head of Duchy College	Duchy College
Ms Delyth Davies	Head of Dairy Development Wales	Dairy Co.
Mr Gary Douch	Head of Farming Connect	Welsh Government
Miss Angela Evans	Secretariat to this review, Agriculture and Rural Affairs Division	Welsh Government
Dr Christianne Glossop	Chief Veterinary Officer for Wales	Welsh Government
Mr John Greystone	Former Chief Executive	Colegau Cymru / Colleges Wales
Mr Bernard Griffiths	Policy Officer Land Use	Farmers Union of Wales (FUW)
Mr Gary Haggaty	Head of Agriculture & Rural Affairs Division	Welsh Government
Prof. William Haresign	Assistant Director	IBERS, Aberystwyth University
Ms Janet Heckingbottom	Manager	Farming & Countryside Education (FACE)
Mr Steve Hughson	Chief Executive	Royal Welsh Agricultural Society
Mrs Mary James	Director	NFU Cymru
Mr David John	Head of Agriculture	Bridgend College
Mr Aled Jones	Assistant Chief Executive	Royal Welsh Agricultural Society
Mr Alun Jones	Chief Executive	Menter a Busnes
Mr David Jones	Principal	Coleg Cambria
Mr Dewi Wyn Jones	Farms Manager	Coleg Cambria
Mr Gareth Jones	Director of Curriculum	Coleg Cambria
Dr Glyn Jones	Principal / Chief Executive	Grŵp Llandrillo Menai
Mr Sion Aron Jones	Industry Development Manager	Hybu Cig Cymru
Philip Le Grice	Assistant Principal	Duchy College
Dr David Llewellyn	Vice Chancellor	Harper Adams University
Ms Nia Lloyd	Chief Executive	Wales YFC
Mr Barry Lyles	Principal	Coleg Sir Gâr
Mr Andrew Martin	Senior Business Development Manager	Food and Drink Wales, Welsh Government
Mr Iwan Meirion	Vice-Chair	Wales YFC

Miss Kate Miles	Chair	Wales YFC
Mrs Helen Minnice-Smith	Head of Agriculture and Rural Policy	Welsh Government
Mr Dylan Morgan	Deputy Director	NFU Cymru
Mr Chris Moody	Chief Executive	Landex
Mr David Morris	Deputy Head of Food Division	Welsh Government
Ms Rhian Nowell Philips	Director of Agricultural Policy	Farmers Union of Wales (FUW)
Ms Jane Powell	Co-ordinator FACE in Wales	IBERS / Farming & Countryside Education (FACE)
Andrew Read	Head of Mechanisation	Coleg Cambria
Dr Ian Rees	Head of Coleg Meirion Dwyfor	Grŵp Llandrillo Menai
Mr Peter Rees	Assistant Principal	Coleg Sir Gâr
Mr Kevin Roberts		Independent Reviewer
Prof. Nigel Scollan	Deputy Leader of Animal and Microbial Sciences Research Division	IBERS, Aberystwyth University
Mr Andrew Slade	Director of Agriculture, Fisheries and Marine	Welsh Government
Mr Keith Smyton	Head of Food Division	Welsh Government
Richard Soffe	Head of Rural Business	Duchy College
Janet Swaddling	Acting Chief Executive	Scottish Rural University College (SRUC)
Mr. Iwan Thomas	Chair of YFC Rural Affairs Committee	Wales YFC
Mr Kevin Thomas	Chief Executive	Lantra Wales
Mr Malcolm Thomas OBE		Independent Reviewer
Prof. John Warren	Director of Teaching and Learning	IBERS, Aberystwyth University
Mr Gavin Watkins	OCVO	Welsh Government
Mr Martin Watkins	Head of Agriculture	NPTC College Group
Mr Edwyn Williams	DfES	Welsh Government
Mrs Eirwen Williams	Director of Rural Programmes	Menter a Busnes
Mr Gareth Williams		Independent Reviewer
Mrs Helen Williams	Farm Liaison Service, ARAD	Welsh Government
Mr Rhys Williams	Chair Land-based Study Group Colegau Cymru	Grŵp Llandrillo Menai

Appendix B: Action Plan from Professionalism in Agriculture – People Progression Profit (AHDB, 2013)

ACTION PLAN TO DRIVE THE SKILLS AGENDA FORWARD

To achieve the aims described above, a sustained programme of activity is required. The first aim includes core activities of the AgriSkills Forum management group and as such progress will be reported back to the management group and case studies produced by all members on a regular basis.

Aim 1: A more profitable, sustainable and adaptable industry capable of meeting the future demands and challenges of agriculture and land management.

- 1.1. Increase the focus on skills development and recognition at all levels
- 1.2. Communicate the direct business benefits of engaging with skills development
- 1.3. Facilitate a common voice on major skills-related issues to governments and public, working together to find ways of achieving this so each organisation is represented
- 1.4. Encourage industry organisations to provide and maintain an adequate level of resource to enable a co-ordinated approach, reflecting the importance of the development of professionalism in the industry.
- 1.5. Work alongside the AgriTech Strategy to improve links and communication between industry and all relevant bodies, so that productivity is enhanced.

To ensure timely delivery of the action plan, each Aim below has been set an objective and successful outcome and assigned a working group with a Chair person. Each working group will work to terms of reference established by the management group and will publish a work plan detailing the proposed actions/time frames and report back to the AgriSkills Forum management group at quarterly meetings.

Aim 2: An industry that recognises skills development and continual professional development is fundamental and integral to all businesses.

Objective: Promotion of skills development as being central to business improvement and the concept of professionalism.

- 2.1. Increase industry participation and provision of leadership and business management training across all businesses, large and small, to improve sustainability and staff retention/recruitment

2.2. Develop individuals to ensure there are sufficient competent deliverers, facilitators, mentors and assessors to improve availability of training

2.3. Develop a real or virtual "gateway" through which individuals and businesses can quickly and easily access training, qualifications, assessment and funding.

Successful outcome: An increase in current demand and uptake of leadership and business management training and case studies to show the benefits of such engagement. Simplified systems which allow all producers/growers to access information on training, qualifications, assessments and funding.

Aim 3: An industry that has clear paths of progression for staff and simple access to demand led provision, regardless of sector or location.

Objective: Use skills development opportunities and professionalism so the industry continuously motivates and retains high quality staff.

3.1 Identify and develop industry champions to promote the industry and its professionalism to retain and motivate quality staff

3.2 To promote the benefits of learning opportunities for existing staff, via clear career progression pathways and promotion of the variety of opportunities available

3.3 Undertake research of skills gaps and skills priorities in the next decade and gain a more accurate insight into industry staff needs.

Successful outcome: An improvement in the current retention rates of staff within the sector and evidence of progression through increased responsibility and/or uptake of qualifications. The production of clear career pathways for industry staff.

Aim 4: A world class, competent, innovative and highly skilled workforce, at every level, whose professionalism is recognised and rewarded.

Objective: Recognition of existing skills and skills development activities

4.1. Work with partners to develop new and further develop existing Professional Recognition schemes to create a fit for purpose framework of provision that enables professionalism to be authenticated and recorded, so that future mapping of provision can be completed

4.2. Gain Defra and other bodies' support, i.e. enforcement agencies and assurance schemes, in the improved use of earned recognition

4.3. Ensure industry professional recognition schemes follow the principles of the AgriSkills forum i.e. able to 'speak' to one another, have a simple user interface and have a clear objective/benefit for the end user. The schemes should incorporate all the allied trades supporting the industry to reduce potential confusion.

Successful outcome: Each industry sector has access to an independent professional recognition scheme which recognises, records and authenticates an individual's professional development. Each scheme will follow overarching principles, while allowing for specific industry needs and will be respected throughout the supply chain.

Aim 5: An industry that forms a robust skills development partnership with the wider food chain. This will allow supply chain leverage and joint working with government so there is maximum integration of policies and practice, without repetition.

Objective: Support Defra and BIS in their engagement with other government departments

5.1. Be proactive in communication with Defra and BIS to enable them to play an active part in influencing relevant government initiatives across departments that fund and influence policy and advice on education and skills provision

5.2. Provide governments with effective leadership from industry which consistently promotes the need for professionalism and actively supports the need for on-going partnerships with relevant government departments, to secure long term viability and develop professionalism

5.3. Work with Defra to ensure a better understanding of the need to undertake skills impact assessments, so that there is no negative impact on skills recognition and skills development in future government policies

5.4. Work with Defra, BIS and other departments to investigate more effective and efficient ways to enable funds to flow into the sector to achieve the strategy's objectives

5.5. Work with other providers to improve the integration and utilisation of training resources and provision across the supply chain and work with BIS/Defra to ensure AgriTech inspired centres collect relevant data.

Successful outcome: An increased understanding from government departments and a more proactive approach to the implementation of policies which impact on skills in the industry. Simple access to government funds to upskill, based on real industry demand.

Appendix C: Reports considered

Agriculture and Horticulture Development Board (AHDB): Annual Report and Accounts, 2013/14 – AHDB, 2014

Agriculture in Wales: Next Generation into Farming – Malcolm Thomas, May 2014

Agroecology: Integrating animals in ecosystems. Animal Journal, Volume 8. No.08 – B. Dumont and A. Bernués, August 2014

Assessment of Current Provision for the Land-based and Environmental sector in Wales 2010-2011 – Lantra, 2010

CAP Reform report – Wales Rural Observatory (WRO), 2013

Common Agricultural Policy Reform – Rural Development Plan 2014-2020:

Next Steps – Welsh Government, January 2014

Environment Bill and White Paper – Welsh Government, October 2013

Fact Sheet 2010/2011 – Lantra Wales, 2011

Feeding the Future report – Professor Chris Pollock, June 2013

Future of Food and Farming – The Government Office for Science, 2011

Iaith Fyw: Iaith Byw/ A Living Language: A Language for Living – A strategy for the Welsh Language 2012-2017, Welsh Government (2012)

'Iaith Pawb: A National Action Plan for a Bilingual Wales', Welsh Assembly Government (2003)

Independent Review into the Resilience of Farming in Wales – Kevin Roberts, January 2014

Inquiry into Sustainable Land Management 2014 – National Assembly for Wales, May 2014

Knowledge Transfer and Innovation in the Wales Rural Development Plan report – Wales Rural Observatory (WRO), October 2013

Professionalism in Agriculture: People Progression Profit – AHDB, 2013

Prospect from agrobiolgy and industrial ecology for animal production in the 21st Century Animal. 1028-1043 – B. Dumont, L. Fortun-Lemonthe, M. Jouven, M. Thomas and M. Tichit, 2013

Repairing a fractured pipeline: Improving the effectiveness of Agricultural Research and Development in the UK' International Journal of Agricultural Management, Volume 2 p1-3 – S.C. Pollock, 2013.

Review of 14-19 provision for the land-based and environment sector – Lantra, August 2013

Review of Farming Connect – Gareth Williams, 2014

Rural Development Plan 2007-2013, Welsh Government, 2007

Rural Development Programme Advisory Group – Peter Davies, November 2013

Scotland’s Land-Based Colleges Skills Requirement Forecasting – Oxford Economics, May 2011

Sector Assessment Nation Summary Wales – Lantra, 2012

Skills Assessment 2010/2011 – Lantra Wales, 2011

Sustainable management of natural resources with a focus on Wales and agriculture – European Parliament, 2013

Technology options for feeding 10 billion people: Interactions between climate change and agriculture and between biodiversity and agriculture – European Parliament, 2013

The age of Bio–sciences – BBSRC Strategic Plan, updated 2013/14

The State of Food and Agriculture – Food and Agriculture Organization, 2014

Towards a New Professionalism: The skills strategy for agriculture and horticulture – AgriSkills Forum, 2010

Towards Sustainable Growth: Action Plan for the Food and Drink Industry 2014-2020 – Welsh Government, 2014

UK strategy for Agricultural Technologies – Defra, July 2013

Unlocking the Potential of the Uplands: A report by the Welsh Upland Forum – WUF, December 2012

Welsh Dairy Strategic Action Plan – Welsh Government, November 2007

What do we need to know to enhance the environmental sustainability of agricultural production? Prioritisation of knowledge needs for the UK food systems – Lynn Dicks *et al*, Sustainability, 2013

Working Smarter – A report of recommendations to the Welsh Government on better regulations in Farming. Gareth Williams, December 2011

Your Voice, your Future: Welsh Dairy Industry. Welsh Dairy Farmers Survey Report, prepared for Coleg Sir Gâr – Promar, 2014

Appendix D: Glossary

AAPW - Agricultural Advisory Panel for Wales

AHDB - Agriculture and Horticulture Development Board

AHVLA - Animal Health and Veterinary Laboratories Agency

ATP - Advanced Training Partnership

AVLA - Animal Health Veterinary Laboratories

BASIS - British Agrochemicals Safety Inspection Scheme

BBSRC - Biotechnology and Biological Sciences Research Council

BPEX - British Pig Executive

BSE - Bovine Spongiform Encephalopathy

BTEC - Business & Technology Education Council

CLIF - Community, Learner, Industry, Focus

CPD - Continuous Professional Development

DDC - Dairy Development Centre

DEFRA - Department of the Environment, Fisheries and Rural Affairs

EIP - European Innovation Partnership

ELWa - Education and Learning Wales

EMR - East Malling Research

Estyn - Estyn inspects quality and standards in education and training providers in Wales

FACE - Farming and Countryside Education

FACTS - Fertilizer Advisors Certification Scheme

FBS - Farm Business Survey

FE - Further Education

FMD - Foot and Mouth Disease

FUW - Farmers Union of Wales

GCSE -General Certificate of Secondary Education

HAU - Harper Adams University

HCC - Hybu Cig Cymru

HE - Higher Education
HEFCW - Higher Education Funding Council for Wales
HSE - Health and Safety Executive
IBERS - Institute of Biological, Environmental and Rural Sciences
KITE - Knowledge Innovation Technology Programme
KTI - Knowledge Transfer and Innovation
KTP - Knowledge Transfer Partnerships
NERC - Natural Environment Research Council
NFU Cymru - National Farmers Union of Wales
NIAB - National Institute of Agricultural Botany
NPTC - Neath Port Talbot College
NRW - Natural Resources Wales
OG - Operational Group
PIPR - Pig Industry Professional Register
RABDF - Royal Association of British Dairy Farmers
RASE - Royal Agricultural Society of England
RDP - Rural Development Programme
REF - Research Excellence Framework
RVC - Royal Veterinary College
RWAS - Royal Welsh Agricultural Society
SA - Skills Assessment
SRUC - Scotland's Rural University College
SSC - Sector Skills Council
WRO - Wales Rural Observatory
YESS - Young Entrants Supports Scheme
YFC - Young Farmers Clubs