
The Skills Challenge for the East of England's Food & Farming Sector to 2020

This paper has been prepared by the East of England Sustainable Farming and Food Group, an independent group chaired by Marie Francis OBE, which speaks on behalf of the region's agri-food sector. It is based on an initial briefing paper (the content of which is included in the discussion below), and input received from over 100 industry representatives and businesses which attended a series of three breakfast events in June 2010 to debate the challenges faced by the industry in meeting its skills needs in the next decade.

The East of England is a growing region with a dynamic and diverse range of industries. It is one of only three regions in the UK which are net contributors to the exchequer, as well as having some of the highest rates of R&D spending and knowledge intensive businesses in Europe.

The region's agri-food sector contains the largest concentration of food related R&D in Europe and the commercial sector itself is the most productive in the UK, with the region's farms representing over ¼ of England's arable, poultry and horticulture sector and nearly 30% of its pigs¹. East of England agriculture generates 25% of total income from the sector in England and has been growing its share of major enterprises such as pigs and poultry.

The agri-food sector has therefore been recognized as a sector with a major role to play in the future of the region in the Blueprint for Growth which has recently been published by the Space for Ideas Business Leaders group at <http://www.eastofengland.uk.com/blueprint>

Background

The Food and Farming sector is the largest manufacturing sector in the country. The total food chain has a turnover of £171bn (2008), creates GVA of £83bn and employs 3.8million people (Defra 2009). The sector also manages 80% of the UK's land area, has positive and negative impacts on biodiversity and the countryside, is a major user of resources and is facing challenges in responding to climate change.

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The industry has coped comparatively well with the recession with turnover and GVA both increasing since 2007. The sector has also been a leader in export growth, with recent figures showing food and drink exports growing for the fifth consecutive year by 4.4% in 2009 to £9.65bn, at a time when other manufacturing sectors saw exports fall by 11.8%².

In the East of England the agri-food sector is a major employer with a labour force in excess of 375,000 people, of whom 122,000 are employed in agriculture, food processing and ancillary businesses³, 115,000 in food retail and 139,000 in the catering sector (DEFRA 2009). The food chain thus represents 1 in 7 jobs in the region's economy, and therefore it is essential that any focus on skills and knowledge led growth must include a strong focus on addressing the needs of the sector.

The Skills Challenge - published reports

In 2009 the region launched an ambitious growth led agenda for the Food and Farming sector: 2020 Vision for the East of England Food and Farming sector⁴ which set out the need to increase production whilst simultaneously tackling the challenges of sustainability. The Vision outlines the need for increased public sector investment in skills and R&D to compliment industry investment.

All the consultations which led to the Vision, and many other recent papers and events, have however highlighted a serious problem in relation to skills. The sector has struggled to attract enough good new people and is not seen as a career of choice by many people, and levels of progression and formal qualifications are low by comparison with many other sectors. The need for career and skills progression is thus a strong theme within the Sector Skills Agreement developed by LANTRA⁵. There is also a need for skilled technologists and those with higher level management skills able to run increasingly large and complex business operations.

In part the skills gap in the sector has been met by migrants who have become an increasingly important component of the food and farming sector's workforce, with many now progressing into management roles and becoming part of the long term workforce. However, most employers have concerns about how dependent they have become on this source of new recruits, and have expressed worries about where their future workforce will come from.

The issues identified regionally are aligned with national research⁶, which has highlighted a need to increase UK food production to deliver food security⁷ by increasing the focus on research⁸ and skills. But, this challenge occurs at the end of a 20 year period in which agricultural student numbers declined until 2005⁹, with only small improvements being seen in the last few years, and then only in part time student numbers. Agricultural and food related research has also been cut and many former research facilities have closed.

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To address the challenges outlined above in relation to production and sustainability many reports have highlighted the need to increase recruitment to the sector (LANTRA 2006), improve technology transfer¹⁰, develop the science base and increase skill levels¹¹.

The HEFCE review of Land Based Studies in 2007 (the Gill review)¹² recommended that there was a need for more collaboration between providers to ensure research was communicated into practice. This focus on applied research and technology transfer linked to academic provision is also reflected in the BBSRC consultation on future directions in research relating to food security¹³.

The key challenge is to develop people who can drive research led innovation in both technical and managerial disciplines and demonstrate real results in commercial businesses¹⁴. This requires greater collaboration between research, whether in university departments or research centres, and teaching provision by Colleges and the private sector.

New Industries New Jobs (DIUS 2009) predicts that in developed countries demand for unskilled workers will fall 16% but increase 19% for skilled workers over the period 2001-30¹⁵. The Labour Force Survey (2008) has shown that compared to other sectors the agricultural workforce in England is:

- older, with 24% of employees over the age of 55 compared to 16% in all sectors of the economy;
- has more employees, 58%, with qualifications at level 2 or below compared to 47% for all sectors;
- regarded as taking a longer time to become competent within, with over 50% of employees thinking that it took 2 years or more to 'learn to do the job well' compared to 29% in all sectors.

Recent official reports suggest that agricultural and food processing employment will continue on a downward trajectory, however most of these were produced using data from before the food price shocks in 2007 and 2008 and the subsequent increase in agricultural output. Recent data suggests that agricultural employment in the East of England grew between 2007 and 2008 as producers responded to the demand for more production, increasing by over 1,000 people to 48,500 (+2.3%)¹⁶.

Improve have published a labour market profile for the food processing sector 2009/10¹⁷ which highlights that the sector employs 37,000 staff in the region, 15% of the total regional employment in manufacturing, and is seeing an increase in demand for higher level skills. Whilst total employment in the sector is projected to decrease slowly due to mechanisation it will need to recruit 8,000 staff in the next decade within the region.

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At a time of public sector funding constraint there is inevitably pressure on public sector support for skills provision. **Many current national reports place the agri-food sector low on the list of priority sectors, with a recent UKCES report¹⁸ putting food and drink processing 20th and 22nd and agriculture 25th out of 27 sectors.** Whilst the report's conclusions have been challenged by the industry in the light of the government's Food 2030¹⁹ report and recent trends this illustrates the challenge which the industry faces. The sector must make a clear case for funding the development of agricultural and food skills and link this to the benefit that these industries can bring to the country.

Feedback from the industry

The following sections of the paper set out the key arguments and issues which were raised by participants at the three business breakfasts held in June 2010, in five major areas:

- The future demand for people and skills within the agri-food sector;
- The challenges in recruiting the future workforce;
- The types of skills where demand will increase;
- How to link skills provision more closely to R&D and knowledge led growth;
- Projecting the sector's skills needs effectively.

In each area a description of the issue is followed by industry views on the areas in which action needs to be taken to ensure the sector can secure the workforce and skills it needs for the future.

The future demand for people and skills within the agri-food sector

Whilst direct agricultural employment had been declining for many years, 2008 saw the first recent significant rise (+3%) in employment due to increased production. Whilst there remains scope for some further mechanization on some farms, many larger (in particular) arable businesses, feel that the future workforce will not fall as we are approaching the limit of machinery size which can be used.

The total food chain has seen increased demand for staff which has offset the falls on farms and this overall growth is set to continue as the demand for value added goods and catering services grows.

The industry has an ageing workforce and this coupled to static or increasing demand for skills presents a big challenge in recruiting enough new entrants. Whilst some Colleges are seeing the number of people entering the sector rise (e.g. Easton in Norfolk), the picture across the country is not as robust and overall we are failing to find enough new recruits, with research suggesting agriculture alone needs 60,000 new

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recruits in the next 10 years, a figure which on current trends will not be met, with 67% of employers reporting a skill gap.

Many graduates do not have the skills needed and are not fit for purpose with employers struggling to get experts in many areas e.g. experienced technologists, because whilst there is no shortage of graduates they have no experience. The skills gap is increasing because a BSc is no longer enough for the challenges in the industry, and there is a growing need for post-graduate qualifications as well as a need for graduates to do more internships so they have the skills really needed by employers.

Employers are finding it increasingly difficult to secure the staff needed for growth within the UK e.g.:

- A pig production business advert for a technician attracted 28 applicants of whom 8 were interviewed, but only two were suitable, both of whom were working overseas;
- The same issues occur in science e.g. when trying to recruit a senior dairy scientist only one good applicant was received on the 2nd attempt and this was from an Ethiopian working in Finland;
- In horticulture a business which has recently recruited 4 new management staff reported that they were all migrants from Bulgaria, all four were graduates and very committed to the business.

It is recognized that there will be demand for skills at all levels, but businesses are anticipating a larger increase in the demand for higher level and technical skills in subjects as diverse as electronics, mechanization, quality control, ICT and production science as the industry becomes more sophisticated.

Looking forward businesses highlighted particular needs in relation to:

- Finding young highly skilled operators for large, complex and computerized machinery;
- Managers with a balance of technical and management skills to promote growth and efficiency;
- Finding enough scientists and professionals who wish to specialize in the sector e.g. engineers, bankers, accountants and solicitors;
- Finding new leaders and entrepreneurs to drive the sector forward and create new products and enterprises, as well as supporting the growth needs of existing entrepreneurs.

The challenges in recruiting the future workforce

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The sector has a big challenge to find enough new recruits and cannot tackle this without appealing to both young new entrants and career changers. However, the fundamental problem which may restrict the industry's success in doing this is that the sector's image as a career is poor. Most of the public hear a message of decline from the industry and this puts off not only them, but also the people they influence such as children or those they are influenced by.

Whilst the sector has long been associated with some positive images e.g. working in close proximity to nature, it is also widely believed to still involve too much hard work, to be incestuous with the top roles only going to those whose families are already in the sector, and as having dirty conditions and poor rewards. There is a need to correct this dated image by explaining the way in which job roles are changing with more emphasis on technology and management, and the fact that recent surveys have shown that salaries are now much more competitive e.g. average farm managers now earn £47,000.

The key issues which need to be addressed are in four areas:

- **Attracting young people** - who have an increasingly wide range of careers available to them. To compete the sector must be clear on the career potential it offers, dispel the myth that it is a closed shop and focus on the 14-16 old age group as they make career choices. The sector needs to use routes such as partnerships with schools or Young Farmers to reach out into non-traditional markets and develop innovative ways into the sector for the young. A full range of routes is required including the 14-19 diploma (funding permitting) as well as both academic and vocational routes.
- **Attracting career changers** - who in many industries are an increasing source of new recruits. To do this the industry has to encourage people in by clearly explaining the benefits of the sector and selling the sector as a career of choice, helping them to make the transition and by clearly explaining how their transferable skills are valuable within the sector. Some businesses are already doing this and finding it an effective way to obtain skills in areas such as supply chain management or mechanization. Flexible post-graduate provision is also vital to provide the routes for professionals to retrain within the sector.
- **Selling a positive message to key influencers** - most people, whether young or old are influenced heavily by those around them, and in relation to careers this includes family, friends, colleagues and services such as the careers service and teachers. It is critical that these people also understand the benefits of working within the industry and are positive about it.
- **Promoting attractive conditions** - the sector has to ensure that its conditions of employment are competitive, and then promote the rewards which the sector offers to potential new entrants. By investing in new technology the value added

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per employee can be increased and this can lead to more attractive conditions, both physically and financially, being provided.

In addition to new staff, the sector needs to find ways to attract new entrepreneurs to start new businesses, develop new products and services or to grow existing businesses. One challenge is to help unlock the potential of many successors who are already within family or other businesses, but who are currently being blocked from taking on management responsibility at a young age.

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The types of skills where demand will increase

Production technology is moving forward rapidly and future staff will need a combination of analytical, management and technical skills e.g.

- **Production roles** - tractor drivers will continue to need traditional skills but also need to understand why new approaches to production are needed and how they can save resources or increase output e.g. the benefits of reduced tillage depth on costs or resource use on carbon emissions. 'Farm workers' now typically drive £100,000 tractors or £¼m combines, and there is a real challenge in getting 17 year olds up to the level of competence needed to drive these safely and effectively.
- **Continuous improvement** - is needed in the food processing sector, where the global market is requiring businesses to do more with less every day, demanding staff who can devise and apply incremental improvements to enable manufacturers to remain competitive.
- **Technology** - many of the key challenges businesses face need new technology e.g. water resources, where we must find smart solutions to the pressures we face, with similar challenges in sustainable approaches to waste or energy. ICT skills are growing in importance, with many new job roles being created in systems monitoring, recording and analysis where excellent computer skills are needed.

The need for management and leadership skills is also increasing across the sector as supply chains, customer demands and regulation become more demanding, but also because average business size and complexity is increasing. Particular needs are found in:

- **Empowerment** - increasingly all staff need to adopt a managerial outlook in which they take responsibility for their area of the business so that everyone is committed to business success.
- **Collaboration** - team work and collaborative skills are needed across the sector, as average business size increases and businesses work jointly on meeting customer needs. Lantra's recent national skills survey²⁰ showed that 39% of employers wanted team work skills at L3 and above.
- **Marketing** - where the sector needs to develop more management expertise in marketing, as well as the identification and development of new markets or crops. It is also important to focus on adding value and developing more people who have the skills portfolios to work along the whole supply chain. Marketing also includes presenting a positive image of the sector and media training programmes.
- **Entrepreneurship and leadership** - to build on existing entrepreneurship courses so that the sector can develop more new start ups, as well as finding the next generation of leaders to grow existing businesses. These people need skills in

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presentation, public speaking, dress and behaviour codes as well as leadership and management.

In addition to the core roles in agri-food production, there is a big skills gap in relation to scientists in plant genetics and plant breeding as well as other scientific disciplines. Skills are being lost abroad because of the anti-GM approach of Europe and many of the best young scientists are going where these skills can be used. Similarly there is a big problem in recruiting professionals (e.g. bankers, solicitors and accountants) who want to specialise in the agri-food sector.

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How to link skills provision more closely to R&D and knowledge growth

R&D led solutions are critical to the sector's future, and there is a need to invest in more effective knowledge transfer, because whilst there are lots of initiatives, there is a lack of focus and co-ordination which reduces effectiveness. The most important focus must be on communicating new knowledge to existing staff in commercial businesses who offer the fastest route to producing commercial returns.

The major problem with knowledge transfer is that R&D has recently been assessed and valued mainly by publication in peer reviewed journals which are never read by the industry. There is a need to find a way to give more weight and credit to publication in industry relevant publications and for work with industry. Too little funding is being directed at translational research and thus there are very few scientists working on applied projects. This gap must be bridged so that we move from science for scientists to science for business, including ensuring R&D centres have the skills base to communicate effectively.

Interestingly given the focus on growth of the agri-food sector in the East of England, the Financial Times is keen to build on its recent regional feature to understand more about how the East of England food sector can help lead the economy out of recession, and this presents a good opportunity to demonstrate how agri-food R&D can help to deliver growth to a wider audience. The key message must be that without R&D the sector's growth cannot be sustained in a resource constrained age.

To address the issues with links between skills and R&D action is needed on:

- **Developing programmes and facilities for technology translation** - some progress is being made e.g. NIAB's enhanced demonstration farm facility www.innovationfarm.co.uk, but more needs to be done to spread this approach. There is also a need to improve the skills of scientists in knowledge transfer or to employ specialists to do this. Businesses can also teach researchers a great deal about the practical impacts of new technology and a two way dialogue would thus strengthen the science.
- **Ensuring new technologies are commercialised first in the region** - as a leading region in agri-food research greater effort should be focused on identifying businesses which can apply new research and use the skills this creates to increase competitiveness.
- **Linking R&D and entrepreneurship programmes** - the InCrops programme has supported over 100 businesses in the last year but only 2 are run by under 25s, so we need to find a way to increase entrepreneurship amongst the younger members of the industry.
- **Developing specific CPD courses which expose business managers to the latest R&D** - courses focused on knowledge transfer are needed so that businesses can access

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the superb research in places like JIC, IFR, NIAB and Rothamsted, because most businesses in the region are not connected to this work and it essential a way is found to bridge this gap.

- **Utilising the desire of commercial businesses to reach their market** - major companies are keen to commercialise R&D as fast as possible and this provides a useful platform to support collaborative programmes with research centres and education to communicate these new technologies to businesses and students.

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Projecting the sector's skills needs effectively

The agri-food sector can deliver benefits to the UK in many areas including food and energy security, renewable material production, health (diet and recreation), bio-diversity and climate change. The sector's contribution needs to be recognised using more than just GVA measures to include its impact on land use, diet, health, bio-diversity and carbon emissions. However, current economic analysis does not take this more holistic approach, or recognize the role of skills in meeting these multiple objectives.

The industry is keen to increase CPD as a key route to improving the sector's performance, but this demands modularised provision which is more flexible and funded in line with full time provision. A number of key issues relate to the future of skills provision within the sector including:

- **Higher Education funding** - the financial pressures faced both by providers and students are growing and this has changed the nature of courses by reducing the time given to practical work and work experience. It is important that having seen an increase in student demand that funding is more flexible to accommodate the growth in demand, and that courses are more applied to meet needs.
- **Further Education (FE) funding** - there has been a big increase in funding in the last 10 years for FE, but the industry struggled to find new entrants and has not benefitted as much as other sectors. The 14-19 diplomas which helped to attract new entrants are due to be cut by 2013, and it is feared that schools will revert back to GCSEs and 'A' levels, and this may increase recruitment problems.
- **Other funding** - other funding sources such as RDPE are important funding routes for the industry for demand responsive provision and it is essential that the industry is clear what it needs from the focus of skills provision in the post 2013 Rural Development Programme and similar funds (e.g. ESF).
- **Promoting skills in the sector** - the sector is high skills but has low levels of formal qualifications. The sector already invests more in skills per employee than any other sector but it is critical that more of this training is accredited as the focus on industry funding grows.

The next few years will see increased competition for skills funding, but also continued competition for new entrants. The sector must produce more detailed evidence on the skills it needs, and how these interact with the adoption of new technology and market changes. Whilst technology maybe expected to reduce labour requirements, in a dynamic global market this is not always true, with investment often leading to a larger market share and thus a need for more people even if productivity grows.

Current data on workforce skill needs is poor, with reports suggesting a current balance between supply and demand, but this is disputed by larger and more progressive

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employers. To present a more robust case there is a need for in-depth research which engages leading businesses and employers to explore their needs. This research must be used with educational providers and funding agencies to lobby for appropriate provision, and this is an area which the East of England is well placed to lead.

2011/12 decisions on funding will be made this year and so it is vital that a clear case is made for funding by autumn 2010 with clarity on both course type and levels needed. Apprenticeships will grow in number and the sector should look at how it can use these to address its skills needs. EEDA is working with DBIS and DEFRA to set priorities, but needs clear evidence from the industry of what is needed.

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Conclusions

The East of England agri-food sector is a dynamic and proactive sector which is responding to multiple new pressures to increase production, to do this more sustainably and to address the negative consequence of issues such as poor dietary choices.

Whilst the perception is that the sector's employment has been falling this has only been true for parts of the food chain, particularly agriculture and food processing, and even here the decline is now believed to have stopped by most businesses who see the need to grow their workforce if production is to increase. The wider food chain is expected to continue to grow its workforce both due to growth in demand and changes in the type of product as consumers embrace catering services and added value.

The sector faces a challenge in finding new, motivated and highly skilled people and must do more to sell a positive image of the sector to both young people, career changers and their influencers. The perceptions of the industry which many members of the public hold are outdated, and the strong career potential of the sector must be promoted at every opportunity to change these incorrect views.

The type of staff needed will continue to change, with a strong growth in the demand for technologists, managers and leaders. There is also a challenge in ensuring that all education, whether for technicians or managers, combines scientific and management knowledge with practical application and skills.

Delivery methods must seek to bridge the gap between R&D and academic study and commercial practice, because at one extreme a food processing worker or tractor driver now needs to understand why they are applying new techniques, and at the other extreme managers need to know how the physical production process can be streamlined or improved. It is also important to use delivery methods (and intermediaries) which all farmers or food businesses are comfortable with.

The region has the largest concentration of agri-food R&D in Europe, with the John Innes Centre and Sainsbury Laboratory recently being recognized as the leading centre in the World in their fields²¹. Building on this to ensure that students and businesses have access to this knowledge base is essential to future success, and developments which link businesses, researchers and students such as the InCrops project²², Centre for Contemporary Agriculture²³ or Advanced Training Partnerships²⁴ should be supported to facilitate this process. The challenge is to move from 'science for scientists' to 'science for business' to help grow the sector and make it more sustainable.

The sector needs an increased flow of new entrepreneurs both to bring new businesses or products to the mainstream food sector, but also to commercialise new research into sustainable products conducted in the region. This needs a dedicated programme to work with existing new entrants and to attract new people into the sector.

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The needs of the sector for future skills are poorly understood, partly because the sector has changed so rapidly in the last few years, and also because needs in the sector are so diverse. Many of the skills needed also cross traditional 'sector' boundaries as the food chain becomes more integrated and there is a need to understand how changing the skills and technology in plant breeding or food formulation impacts on the needs in agriculture. At a time of funding constraints it is essential that more detailed intelligence and foresight is developed on how skill needs may change as the sector develops.

Recommendations

To address the issues raised by the industry action will be needed by many organizations in a wide range of areas. The priorities which the region can address to tackle some of the issues raised include:

1. **Improving understanding of industry skill needs** - undertaking detailed research on how industry skill and employment needs may change in the coming decade. This should focus on foresight, looking not only at current trends but also consider how the new pressures on the sector and potential developments in R&D may change the demand for labour and skills.

The region contains a number of large or progressive businesses as well as major business groups (co-operatives, trade organizations and others) who should be engaged in this work to develop a robust assessment of the way in which skill needs will develop along the whole food chain from input suppliers to the supermarket shelf or restaurant table. This assessment should be used with both skills providers and funders to ensure future provision meets industry needs.

2. **Developing an enhanced programme to support entrepreneurship skills** - the sector needs more new businesses and products to be developed and this requires an increase in particular in the numbers of young entrepreneurs who are equipped with the skills to run their own businesses.

A number of organizations are active in this area including Young Farmers, the Centre for Contemporary Agriculture, InCrops and Suffolk County Council and others have expressed a desire to support this agenda. Action needs to be taken to build on existing initiatives by working collaboratively to develop a focused and enlarged programme.

3. **Increased links between academic study, R&D and commercial practice** - industry is keen to access more R&D, and there is also a concern that current academic study is not sufficiently linked to commercial practice or research.

The Centre for Contemporary Agriculture has been established to bridge the gap between students and commercial practice and research and should be supported in fulfilling this mission. In addition the region should continue to build on projects such as InCrops, the Colworth enterprise hub and the Innovation

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Farm at NIAB which have been established to bridge the gap between research and business.

Other issues need tackling at a sectoral level, including the need to increase the public's awareness of the positive career prospects in the industry. This area needs to build on existing initiatives such as the career profiles of the type promoted by Lantra²⁵ (e.g. a day in the life of films, growcareers and other resources), industry open door events such as Farm Sunday and the planned 'Big Conversation' which is being organized by RASE to promote careers in the sector.

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