

Annual Report 2012 & Financial Statements



Introduction

The 2012 Annual Report is built around the goals outlined in the Teagasc Statement of Strategy. Examples of key achievements and developments for the Research, Knowledge Transfer and Operations directorates are described in the context of these goals.

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Edited by Mark Moore



Agriculture and the food sector continue to be one of the major contributors to the Irish economy and to economic activity in all rural areas. This was still the case in 2012, despite weather related setbacks and fluctuations in prices for farm gate products.

Teagasc through its research, education and advisory activities endeavours to lead developments in the farming sector as producers individually and collectively develop their dairy, beef, sheep, pigs, crops and other enterprises.

The Food Harvest 2020 report has set ambitious targets for growth and development and its recommendations continue to define future strategies for Teagasc. Minister Coveney, and his department, ensures that the necessary momentum is generated and maintained to achieve these targets. Teagasc is playing its part through the development of practical and applied technologies and by exchanging knowledge through the discussion groups and research demonstration farms. Our education courses ensure there is an influx of young well trained students into the agricultural sector. Our scientists continue to pursue cutting edge research.

Implementation of the Teagasc change programme continued in 2012. The rationalisation of the office network from 91 down to 52 has been completed. Teagasc continued to invest in new facilities, through the recycling of capital assets, with the animal bioscience facility in Grange opened, and the sheep research facility in Athenry completed.

Farmer client numbers increased to around 42,500 in 2012 as the Beef Technology Adoption Programme (BTAP) was rolled out.

Total Teagasc income for 2012, excluding net deferred funding for pensions, amounted to €169.419 million, down from €173.276 million in 2011.

This was due to a reduction in State Funding. Pay costs reduced to €71.307 million in 2012 from €77.652 million in 2011. Due to the continuing restrictions on the numbers employed in the public sector there was a reduction of 100 in the average number of staff employed in Teagasc during 2012 as compared to the previous year.

I would like to thank Professor Pat Fottrell, Martin Heraghty, Jimmy Brett and Margaret Sweeney. All retired from the Teagasc Authority, at the end of their respective terms, during 2012. All four made very valuable contributions to the organisation and I would like to thank them for their commitment and the knowledge and expertise they brought to Teagasc during their terms on the Board. I welcome the new members of the Authority, Brendan Gleeson, Dr. Karina Pierce, and Tom Tynan, who joined in January 2013 for a five-year term.

Teagasc appreciates the support of the Minister for Agriculture, Food and the Marine, Simon Coveney TD, for the work being carried out by the organisation as it pursues its six programmes. I also want to acknowledge the contribution of the late Shane McEntee TD, Minister of State in the Department of Agriculture, Food and the Marine, who died during the year. He made a valuable contribution to, and supported, Teagasc's work, particularly in the forestry and horticultural sectors.

I would also like to thank the Secretary General of the Department of Agriculture, Tom Moran, and the staff of the department for the close working relationship.

The authority acknowledges and appreciates the commitment of the staff in Teagasc, led by the Director, Professor Gerry Boyle, and the senior management team of Dr. Tom Kelly, Director of Knowledge Transfer, Dr. Frank O Mara, Director of Research and Tom Doherty Chief Operating Officer. They are hugely dedicated to the organisation and to working with all involved in the agriculture and food industries to improve, and grow the sector. In 2013, Teagasc will continue to pursue its goals in line with the government's strategies to develop Irish agriculture.

Dr. Noel Cawley
Chairman of the Teagasc Authority



The Teagasc National Farm Survey results showed that family farm income decreased by 15% in 2012, bringing the average income figure for the farming sector down to €25,483. While agricultural commodity prices remained relatively favourable in 2012, the inclement weather adversely affected production costs and crop yields. In particular, dairy farms were impacted by the wet summer and direct costs of production increased by 21%. Many farmers depleted their stock of winter fodder early last autumn and this is likely to have further negative implications for income in 2013.

Fodder Shortage

For livestock farmers 2012 proved extremely challenging with cold, wet, weather in late spring delaying silage production by an average of three weeks. Though parts of Munster were the most severely affected, virtually all farmers reported lower fodder yields and quality. This generated both production and animal welfare issues.

Teagasc advisers and nutritionists responded superbly to this national crisis.

Extensive surveys of silage quality were conducted to establish the extent of the problem. A comprehensive communication campaign, including articles in local and national press, radio and text messaging, outlined options for farmers.

Discussion Groups

An independent study by Dr. Patrick Bogue provided proof of the benefit of discussion group membership and the high level of satisfaction with Teagasc Dairy Efficiency Programme groups. Some key findings are worth mentioning.

- Overall, farmers are very satisfied with the operation of their discussion group (91% satisfaction with the running of the group, 85% satisfaction with member participation, and 89% satisfaction with the outcome of meetings) 81% of all discussion group members intend to continue membership after DEP with 12% uncertain.

- Participation in the discussion groups, through the DEP, had a positive impact on technology adoption in the areas of grassland management, breeding, and financial management.
- DEP group members performed better than non-members in returns per litre, and even more so, on a per hectare basis.

City of Science

Teagasc participated in the City of Science 2012 conference in Dublin which brought together scientists from across the globe. Teagasc made a considerable contribution to associated seminars, debates and media events, in particular the core conference at the National Conference Centre. During that event Teagasc facilitated 'The Great Debate' on "Climate Change and Food Security". With a series of internationally renowned speakers the debate was hugely successful. The audience participated through interactive real-time voting and the debate was streamed live via the internet to a worldwide audience.

Strategic Posts

Teagasc received excellent news in 2012 when we learned that our submission to fill strategic posts through promotion and recruitment had been favourably considered by the Department of Public Expenditure and Reform and our own parent Department, DAFM. Since the Government introduced its Moratorium on Staffing and Promotions in 2009 it has not been possible to fill vacant posts or to promote staff in the normal way.

Food

The Food Technology and Knowledge Transfer Strategy was successfully launched in Dublin in May by An Taoiseach Enda Kenny TD.

Highly promising work at the Alimentary Pharmabiotic Centre in Teagasc Moorepark Food Research Centre and University College Cork, has demonstrated that mice fed with *Bifidobacterium breve* bacteria had altered brain fatty acids and gut microbiota. The finding that bacteria in our gut influence brain fatty acid composition opens up new possibilities for the use of probiotic foods in the promotion of human health and mental well being.

International Links

Teagasc continues to build international links through collaborative research and Walsh Fellow placements. Three new collaborative projects were agreed with MTT in Finland, involving Teagasc Walsh Fellows.

A joint project on grass variety evaluation began in collaboration with DairyNZ from New Zealand. Teagasc researchers were successful in two applications to the New Zealand Globalisation Fund. A new scheme to fund international study trips by Walsh Fellows was launched.

Teagasc and Bord Bia 'Beef Carbon Navigator'

Teagasc and Bord Bia launched the 'Beef Carbon Navigator', a farm management tool. Using the Carbon Navigator will allow farmers to set improvement targets in key practical management areas and see the results on their cattle enterprise in terms of environmental and economic performance.

The Carbon Navigator marks the next stage of the Beef Sustainability programme that has been developed jointly by Teagasc and Bord Bia.

Another highly productive partnership lead to the publishing of an innovative Teagasc App, the 'Fertilizer Tracker', conceived by Teagasc advisers and developed by Furious Tribe for Vodafone Ireland, it can be used by farmers to record fertilizer purchases and compare the total Nitrogen (N), Phosphate (P) and Potassium (K) actually used, with their annual fertilizer plan.

I would like to thank all colleagues in Teagasc, and former colleagues who have retired or left the organisation, for their work, commitment and dedication to Teagasc.

Professor Gerry Boyle
Director



1. Mr. Tom Collins – Minister’s Appointee, 2. Mr. Frank O’Mahony – Macra na Feirme Nominee, 3. Mr. Eddie Downey- IFA Nominee, 4. Ms. Marie Christie– Staff Representative, 5. Mr. Pdraig Gibbons – ICOS Nominee, 6. Mr. Tommy Cooke, ICMSA Nominee, 7. Dr. Noel Cawley – Chairman - Teagasc.

Attendance at Authority Meetings *

Name	11 Jan	07 Feb	04 Mar	02 Apr	06 May	04 Jun	05 Jul	03 Sep	07 Oct	05 Nov	05 Dec
Cawley, Dr. Noel (Chairman)	●	●	●	●	●	●	●	●	●	●	●
Brett, Mr. James	–	●	●	●							
Christie, Ms. Marie	●	●	●	●	●	●	●	●	●	●	●
Collins, Mr. Tom	●	●	●	●	●	●	●	●	●	●	●
Cooke, Mr. Tommy	●	●	●	●	●	●	●	●	●	●	●
Downey, Mr. Eddie	●	●	●	●	●	–	●	●	●	●	–
Fottrell, Professor Patrick	●	●	●	●	●	–	●	–			
Gibbons, Mr. Pdraig	●	●	●	●	●	●	●	–	–	●	●
Heraghty, Mr. Martin	●	●	●	●	●	●	●	●			
O’Mahony, Mr. Frank	●	●	●	●	●	●	●	●	●	●	●
Sweeney, Ms. Margaret	●	●	–	●	●	–					

Note: This schedule of attendances at meetings is provided in accordance with paragraph 3.8 of the Code of Practice for the Governance of State Bodies dated June 2009.

Audit Committee

	21 Feb	20 Mar	05 Dec
Brett, Mr. James (Chair)	●	●	●
Gibbons, Mr. Pdraig (Interim Chair)	●	●	●
Cawley, Noel Dr.			●
Collins, Mr. Tom		●	
Heraghty, Mr. Martin	●	●	
Sweeney, Ms. Margaret	●	●	

*Dr. Cawley attended the December meeting as four Authority members retired in the period April-September 2012 and new appointments were awaited.

Research Committee

	04 Jul	24 Sep	24 Sep*
Fottrell, Professor Patrick (Chair)	●	●	●
Downey, Mr. Eddie	●	●	●
Christie, Ms. Marie	●	●	●
Collins, Mr. Tom	●	●	●
Cooke, Mr. Tommy	●	●	
Gibbons, Mr. Pdraig		–	

*Joint Meeting of the Research and Advisory & Education Committees

Advisory & Education Committee

	20 Jan	24 Sep
O’Mahony, Mr. Frank (Chair)	●	●
Collins, Mr. Tom		●
Cooke, Mr. Tommy		●
Downey, Mr. Eddie	●	●
Gibbons, Mr. Pdraig	●	●
Christie, Ms. Marie	●	●

*The Authority approved Mr. Collins’ nomination to the Committee on 07.03.12

Finance Committee

	28 Feb
Heraghty, Mr. Martin (Chair)	●
Cawley, Dr. Noel	●
Cooke, Mr. Tommy	●
Brett, Mr. James	●
Christie, Ms. Marie	●

*The Finance Committee was reformed with an extended brief to the Operations Committee and approved by the Authority at its March 2012 meeting.

Operations Committee

	27 Aug	28 Feb
Cawley, Dr. Noel	●	●
Cooke, Mr. Tommy	●	●
Christie, Ms. Marie	●	●

*Dr. Cawley acted as Interim Chairman until the appointment of new members to the Authority in January 2013

Changes to the Teagasc Authority in 2012

Mr. James Brett completed his term on the Authority on 17 April 2012. Ms. Margaret Sweeney completed her term on 11 June 2012. Mr. Martin Heraghty completed his term on 25 September 2012. Prof. Patrick Fottrell completed his term on 27 September 2012.

Post year end changes to the Authority

In January 2013, Mr. Brendan Gleeson, Dr. Karina Pierce and Mr. Tom Tynan were appointed to the Teagasc Authority by the Minister for Agriculture, Food and the Marine, Simon Coveney TD for five year terms.

In September 2013, Dr. Noel Cawley was reappointed as Chairman of the Teagasc Authority for a second five-year term. Mr. Pdraig Gibbons was also reappointed and two new members, Mr. Alan Jagoe and Professor Gerald Fitzgerald were appointed for five-year terms by the Minister for Agriculture, Food and the Marine, Simon Coveney TD.



Professor Gerry Boyle
Director



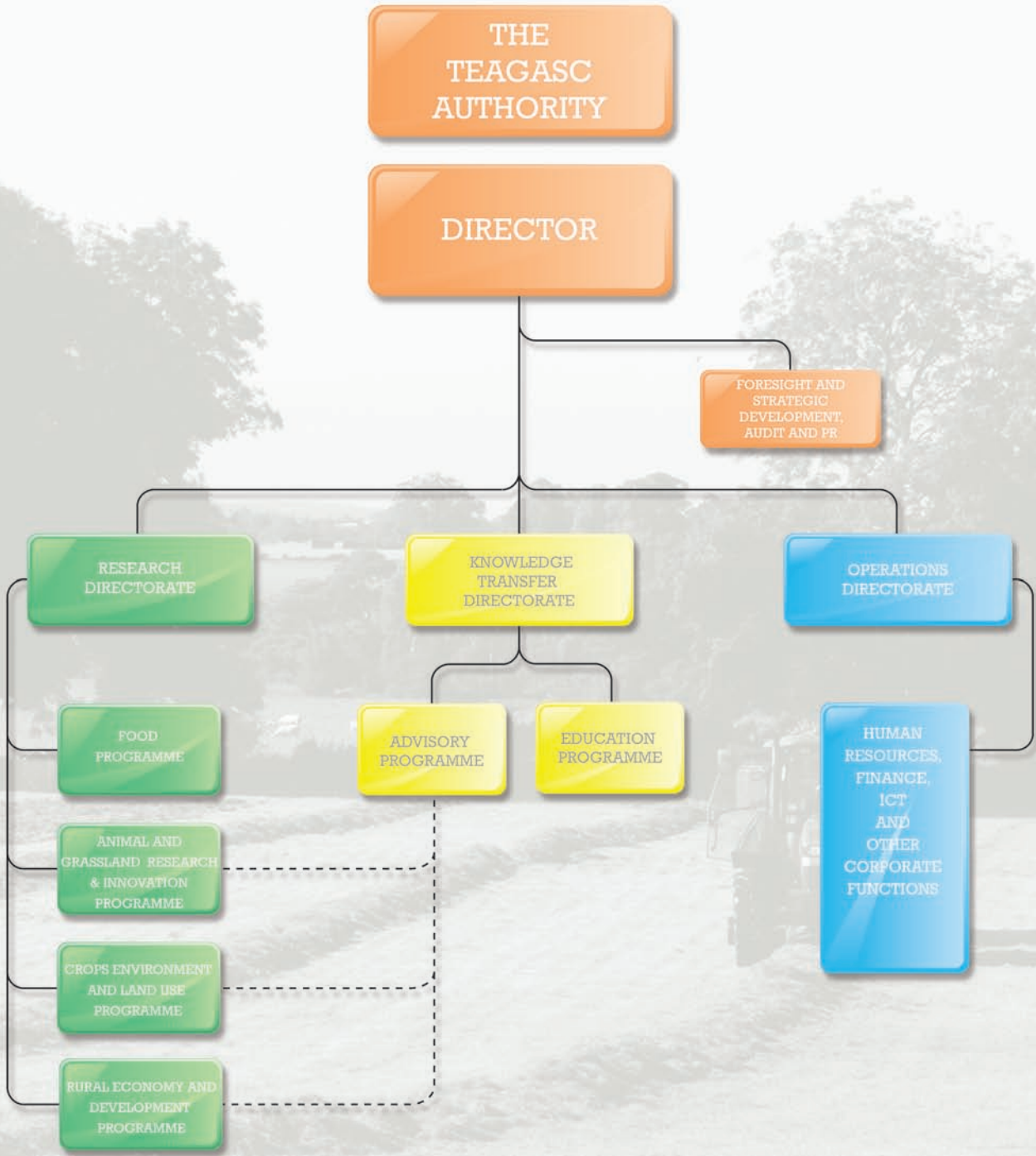
Dr. Frank O Mara
Director of Research



Mr. Tom Doherty
Chief Operating Officer



Dr. Tom Kelly
Director of Knowledge Transfer



Teagasc Offices & Centres



Goal 1

Improve the competitiveness of agriculture, food and the wider bio-economy.



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

Farm Partnerships

A new Teagasc study has highlighted numerous benefits associated with Farm Partnerships, ranging from improved financial performance to enhanced quality of life and safety on farms. The three-year study involved case-studies of Irish farmers' experiences of Farm Partnerships and focused on the wide variety of farmers who have established partnerships in Ireland: fathers and sons; neighbouring farmers; brothers; brothers-in-law; mothers and sons; fathers and daughters; husbands and wives.

Pictured is the winner of the Teagasc/FBD Student of the Year, Mr. Gerard Brennan from Carrowclogher, Strokestown, Co. Roscommon along with Prof. Gerry Boyle, Teagasc, Director; Minister for Agriculture, Food & the Marine, Simon Coveney TD; Hugh Ryan, FBD and Conor Gouldson, FBD. Gerard completed the Advanced Certificate in Agriculture at the Teagasc Education Centre in Longford.

Teagasc Farm Structures Specialist, Ben Roche noted that there are over 600 Milk Production Partnerships currently in operation. "There is substantial opportunity for Irish farmers to engage in other types of production partnerships, as well as in a wide variety of other joint farming ventures," Mr. Roche said.

A series of eight collaborative farming seminars were held in May/June with two booklets printed. In 2012 there were 84 new registrations, 640 active partnerships and 270 renewals.

Teagasc Student of the Year

Gerard Brennan, from Carrowclogher, Strokestown, Co. Roscommon completed the Advanced Certificate in Agriculture at the Teagasc Education Centre in Longford.

The judges were impressed by Gerard's get-up-and-go attitude. He has converted the family farm from a 30 cow suckler herd to a dairy herd, which now stands at 65 cows. The herd EBI is €137 with the replacement heifers having an EBI of €167. He has developed an efficient dairy business in a locality where there is no strong tradition of dairying. He is a member of a Teagasc discussion group and has plans to further expand his dairy herd and milking platform in the future.

Presenting the awards, the Minister for Agriculture, Food and the Marine, Simon Coveney said; "These awards recognise excellence and everyone within the agri-food chain must aspire to this standard if our industry is to reach its full potential. The agri-food sector needs enthusiastic and educated young farmers to drive agricultural production.



BEEF

New Beef Advisory Programme

The Beef Technology Adoption Programme (BTAP) incentivises beef farmers to take on technical and financial expertise, relevant to their beef enterprise. The programme is very similar to the Dairy Efficiency Programme which has been running very successfully in Teagasc for the past two years.

BTAP is based on the Discussion Group structure; groups of fifteen to twenty farmers meet on a monthly basis on each other's farms. Timely technology and financial subjects are discussed by group members over a circa two hour period, facilitated by the local Teagasc adviser.

Farmers have the opportunity to ask questions and get answers relevant to their particular farming situation. Farmers get information based on research but tailor made for their own situation and local experience.

During the three year programme participating farmers must attend a minimum of six events annually. Every aspect of beef production is covered including breeding, grassland management, cost control and financial management. By the end of 2012 there were 271 Teagasc beef discussion groups in BTAP.



Teagasc facilitator Vivian Silke and members of the Gort, Co. Galway, BTAP group.

John 'The Bull' Hayes, beef farmer and former international rugby player, was keen to get hold of the Teagasc Beef Manual at the National Ploughing Championships, where he also launched his autobiography. The Teagasc Beef Manual published in 2012 follows the hugely successful Teagasc Dairy Manual. Over 2,000 Beef Manuals were sold in 2012.



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

New selection indices for beef and sheep

New Dairy Beef (DBI), Maternal and Terminal indices have been developed in conjunction with ICBF. In the case of sheep potential new traits have been identified (mature ewe weight, facial egg count and lameness) for inclusion in 2013.

Teagasc Sheep Research and BETTER farms

Sheep production is a significant contributor to the agricultural and national economy with an output valued at €180 million in 2011. Teagasc are committing significant resources to sheep research and knowledge transfer.

The newly established Teagasc Sheep Research Demonstration farm is quantifying the optimum stocking rates for breeds with different levels of prolificacy. The Teagasc Sheep BETTER farms programme has been extended. The first three years of results from the programme are impressive, in terms of flock output, increased lamb production from grazed grass and profitability. About 60% of the improvement in gross margin in both the lowland and hill flocks has come from improvements in productivity. Teagasc has dedicated sheep advisers in each advisory region supported by sheep specialists.

New sheep housing and experimental facilities have been built in Athenry and the nutrition, parasitology, and meat quality studies that will be conducted in these new facilities will further underpin the sheep industry.

New Teagasc Animal Bioscience Facility

The new Teagasc Animal Bioscience Facility at Grange in County Meath was officially opened by the Minister for Agriculture, Food and the Marine, Simon Coveney TD.

The Animal Bioscience Facility was developed as part of the Teagasc vision programme initiated in 2006 with the objective of establishing centres of excellence in the key sciences that underpin Irish agriculture. The new facilities include molecular biology laboratories, and laboratories for DNA/RNA preparation, immunology and biochemistry.

Animal Bioscience is a key component of Teagasc's Animal and Grassland, Research and Innovation Programme, which integrates applied and strategic research across the main livestock species in Ireland namely dairy cattle, beef cattle and sheep. The Teagasc Animal and Bioscience Department carries out research in the areas of animal breeding and genomics, animal health and welfare, infection and disease, computational and systems biology, fertility and reproduction, feed efficiency and product quality.

Below Minister for Agriculture, Food and the Marine, Simon Coveney TD, at the official opening of the new Animal Bioscience Facility at Grange, Co. Meath, pictured with Dr. Noel Cawley and staff members Keelin O'Driscoll and Sinead Waters.



DAIRYING

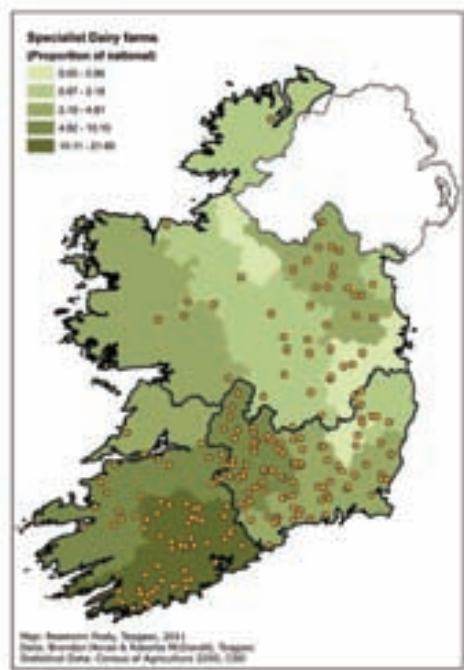
New Dairy Farms

As we approach quota removal in 2015, EU milk quotas are being increased by 1% per year. As part of the milk quota expansion policy the Irish government decided to allocate one quarter of the annual 1% increase in milk quota to new entrants. Approximately 230 new, stand alone, dairy farm businesses have received 200,000 litres of milk quota from the scheme in its first three years.

There were more than 200 applications in 2012. As part of the application process, each successful entrant provided a detailed, five-year business plan, including physical and financial plans in addition to information on the location of their planned enterprise.

Roberta McDonald, a PhD student at Teagasc Moorepark, examined the characteristics of these new dairy businesses and is investigating the processes influencing adoption of dairy technologies among new dairy farmers.

The data submitted by applicants provides a general overview of new entrants. Over half were previously in beef production with the majority of the remainder coming from a mixed farming enterprise (combining sheep, beef and tillage). With an average size of 70 cows on 58ha, the new entrant farms will be lowly stocked during the initial years of the new business. However, there will be significant potential for milk production expansion on these dairy farms in the future. The majority of new entrants (81%) are located in the south and south east (see map, yellow dots), with the balance distributed in the border, midlands and west.



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

Mastitis CostCheck Calculator launched by Teagasc and Animal Health Ireland

A calculator to measure the financial losses caused by mastitis at farm level was launched at the Teagasc National Dairy Conference in Tralee. The CostCheck calculator has been developed by Teagasc in conjunction with Animal Health Ireland, through the CellCheck programme. This calculator can be used by farmers to help understand the impact that mastitis has on profitability on their farm.

The CostCheck calculator was developed based on research on the costs associated with mastitis carried out at the Teagasc Animal

& Grassland, Research and innovation Centre, Moorepark by researcher Una Geary. Una estimates that reducing SCC levels from 350,000 cells/ml, to 150,000/ml on a 40-hectare farm with 100 cows, would increase profitability by €10,300. She demonstrated the CostCheck tool highlighting the costs associated with mastitis using data from the farmers who were in attendance at the conference.

Commenting on mastitis costs and the CostCheck calculator, Teagasc Researcher Laurence Shalloo emphasised that while there were significant costs associated with mastitis within the context of milk quotas, those costs will be even bigger when quotas are removed and the opportunity cost of herd

growth is included. This tool is available on the Teagasc and Animal Health Ireland websites.

Professional Diploma in Dairy Farm Management

In response to major changes taking place in the Irish dairy industry, Teagasc launched a new Professional Diploma in Dairy Farm Management (Level 7) in association with University College Dublin (UCD).

The programme is designed to give trainee dairy farm managers a high level of technical, financial and supervisory skills. Graduates will be equipped to manage their own farm, enter a share farming arrangement or work as farm managers.

The programme will involve two years of professional work experience on the most progressive Irish dairy farms with an option to work overseas on dairy farms in New Zealand or other countries. As well as the professional work experience, it will include discussion group participation and block release periods for contact modules.

The contact modules will be delivered at participating Teagasc colleges and Moorepark, by College Staff, Dairy Specialists and Research staff. In September 2012, 19 students commenced the diploma programme.

Weather Clinics

Due to ongoing bad weather huge numbers of farmers sought advice on how to deal with poor ground conditions and poor grass utilisation. June rainfall, for example, was 135% to 300% of normal.

In response to the current difficulties, Teagasc offered advice in the normal way and, in addition, conducted special advisory clinics in all offices to assist farmers to cope with weather-related problems.

One Third of Farmers Short of Fodder

Nearly one third of farmers surveyed were short of silage according to a Teagasc survey carried out in December 2012. In the survey of 158 farmers, 30% said that they expected to be short of silage for their livestock. On average, the deficit identified on these farms was 17% of their requirements



Gao Hongbin, Vice Minister, Ministry of Agriculture, China, being met by Professor Gerry Boyle Teagasc Director, and Dr. Frank O Mara, Director of Research, Teagasc on a visit to Teagasc, Moorepark.

The preference for dealing with the shortage was to purchase meal. This action was being taken by 45% of those surveyed. One quarter of farmers listed as their preference to purchase silage or other forages, while 16% said they planned to sell livestock. Seven per cent planned to get livestock out to grass early and 5 per cent planned to purchase straw.

Commenting on the results of the survey Teagasc Nutritionist Siobhan Kavanagh said: "Seven out of ten of those surveyed completed a feed budget. It's important that all farmers do an assessment of their feed requirements, as early identification of a deficit will leave more options open to take corrective action."

Chinese visitors at Moorepark.

Chinese Vice Minister Gao Hongbin, from the Chinese Agriculture Ministry visited the Teagasc Animal and Grassland and Food Research Centre in Moorepark, Fermoy where he was given an overview of the Teagasc Animal and Grassland Research and Innovation programme.

Minister Gao's visit follows on from Minister Coveney's successful trade mission to China, when it was agreed that he would come to Ireland with a view to fostering increased cooperation and understanding in the areas of agriculture, fisheries and food.



Teagasc offered 157 Adult Education Courses in 2012 with nearly 4,000 participants.

Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

TILLAGE

National Tillage Conference

The 2012 tillage conference focused on European and Irish challenges for the tillage sector and on technical crop production issues, highlights included:

- Professor Ian Crute, Chief Scientist from the UK Agricultural and Horticulture Development Board described the need for European research to deliver for future food demand, following a period when many national research funders have concentrated on non-production issues.
- John Spink, Head of Crop Science at Teagasc showed how the high yields of 2011 were achieved and how this knowledge of crop development will be used in future. Tillage specialist Michael Hennessy and Dublin farmer

Ollie Whyte presented the share farming model as a viable alternative to other methods of achieving scale in tillage crop production.

- Following a year of variable disease pressure, an update on cereal disease sensitivity and the performance of the new fungicides was the focus of the paper presented by Teagasc researcher Dr. Steven Kildea.
- The ever challenging topic of nitrogen use in spring barley and its impact on yield and quality was covered by Dr. Richie Hackett who has recently commenced a research programme in this area.
- The topic of fertilizer spreading, and specifically that of even spreading with increasing tramline widths, was dealt with by crops and mechanisation researcher, Dermot Forristal. The conference was attended by more than 500.

Other key conferences included a Potato Conference attended by 200; a National bio-energy conference attended by 210. In addition to on-farm visits by Teagasc tillage advisers, a series of seminars and crop walks attracted over 2,600.

Plant Breeding

Five New Teagasc Bred Grass Varieties Recommended

Five new Teagasc-bred perennial ryegrass varieties have been added to the Grass and Clover Recommended List of Varieties for Ireland for 2012 published by the Department of Agriculture, Food and the Marine. The varieties have been shown to offer improved yield, quality and persistence characteristics for grass-based production systems in Ireland.

The new Teagasc-bred perennial ryegrass varieties are: Genesis (early diploid), Carraig (intermediate tetraploid), Majestic (late diploid), Glenveagh (late diploid) and Kintyre (late tetraploid).

Above: Teagasc Director Professor Gerry Boyle with Inge Van Oost, DG Agriculture and Rural Development, EU Commission, Professor Cees Leeuwis, Wageningen University, and Frank O'Mahony, Teagasc Authority Member, who were speaking at a major international conference on supporting farmer innovation, through best practice in advisory and extension services.



Seed Potato Production

Exports of seed potatoes from Ireland have reduced to very low levels over the past ten years, but the current expansion of potato growing areas in developing countries could present a significant opportunity for Irish potato growers. The Teagasc breeding programme, which is one of the most technically advanced in Europe, continues to breed new varieties of potatoes, both for home and export production, delivering one or two new varieties every year.

Teagasc and Irish Potato Marketing (IPM) have been working in partnership, breeding potatoes since the 1970's. Marcel De Souza from IPM has pointed out that moving

some production from the traditional ware market to seed offers an opportunity to create a more stable market for growers. However he also pointed out constraints to production like a high cost base, and high export quality standards, which growers will have to operate under.

Best Practice in Agricultural Advisory Extension Services

Organised by Teagasc, this major international event took place in the Aviva stadium, Dublin. The conference was opened by Sean Kelly, Member of the European Parliament. He said: "There is a growing recognition in Europe of the importance of

competitiveness and sustainability of agricultural production, and of the need for more widespread use of new technologies and practices on farms."

Dr. Tom Kelly, Director of Knowledge Transfer in Teagasc said: "Teagasc as an agent for change is active in the continuous evolution of advisory and education programmes and in the development of new tools, methods of working and policy responsive programmes and initiatives." As well as local contributors speakers from the Netherlands, New Zealand, the United States, Australia and Northern Ireland brought a broad range of experience, of how support services for farmers are delivered in other countries.



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

PIGS

The Teagasc Pig Development Department conducts research as well as providing advice to pig producers who were under pressure in 2012 due to high feed prices. With litter sizes on the increase, pig research from Teagasc Moorepark addresses the nutritional requirements of lactating sows and also gilt developer diets.

The Teagasc advisers also focus on issues such as optimum herd size, and how to save on energy costs.

Dr. Nuala Ni Fhlatharta, Head of the Teagasc Forestry Development Department, Steven Meyen forestry development officer, the late Shane McEntee TD Minister of State at the Department of Agriculture Food and the Marine, Teagasc Director Professor Gerry Boyle.

FORESTRY

Evaluation of Soil Quality for Forestry

Researchers at Teagasc, with assistance from UCD Forestry Department, have succeeded in identifying the best sites to plant Sitka spruce in Ireland.

Using a soil quality classification system in use in British Columbia, Canada, Dr. Niall Farrelly, a Research Officer in the Crops, Environment and Land Use Programme looked at what measures of soil quality in forest soils (soil classification data and a number of physical and chemical variables such as pH, phosphate, magnesium and ammonium levels, etc.) gave the best indication of soil quality in

forest soils and how these measures related to the productivity of Sitka spruce in Ireland.

“This study means that significant potential exists to increase yields in our planting programme through adequate site selection,” says Dr. Farrelly.

One-2-One Forestry Clinics

A nationwide series of One-2-One forestry clinics organised by the Teagasc Forestry Development Department provided farmers and landowners seeking independent advice and up-to-date information on planting and managing forestry one-to-one consultation with an experienced Teagasc forestry adviser at free clinics throughout the country in local Teagasc offices.

Planting land can have many benefits but is a huge decision for farm families. Getting the right advice and information is critical to making the best decision for the

future and attending a local clinic is be an important first step.

The Teagasc Forestry Development Department is part of the Crops, Environment and Land Use Programme (CELUP) within the Research Directorate of Teagasc.

The aim of the CELUP is to develop and transfer cost-effective crop production systems along with evidence based knowledge to support and underpin the development of a profitable, competitive and environmentally sustainable sector.

Rural sustainability conference

Teagasc economist Dr. Kevin Heanue gave the keynote address to the conference Rural Communities: Fighting for a Sustainable Future, which was attended by the President Michael D. Higgins who commented:

“There is a wide range of social and community initiatives in existence across Ireland, all of which are only possible because radical new alliances have formed between communities, voluntary agencies, government and business.”



In a wide-ranging presentation entitled ‘Development in Rural Areas: Exit or Voice?’ Dr. Heanue outlined the changes in key indicators such as population, employment, disposable income and poverty rates in rural Ireland since 2006.

Based on analysis carried out in Teagasc’s Rural Economy and Development programme, he said: “a long term pattern of population decline persists in many rural areas; most of the employment gained during the ‘Celtic Tiger’ era has been lost and many of those areas which experienced most growth during the boom times are now experiencing relatively lower disposable income and higher poverty rates”.

Dr. Kevin Heanue with President Michael D. Higgins and his wife Sabina Higgins.



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.



FOOD

Food Works - New Initiative Launched to Support Next Generation Food Entrepreneurs

Teagasc, Bord Bia and Enterprise Ireland combined resources to design an in-depth process aimed at finding and fostering global food entrepreneurs.

Successful participants were given an invaluable range of practical business supports required to develop an initial concept into a winning food product with international appeal.

The available supports included consumer market research, business plan development, technical advice, commercial viability testing in addition to access to incubation units, research and development (R&D) facilities and possible investors.

The programme is designed for new food entrepreneurs who have ambitious, scalable, export plans and ideas. Candidates may apply as individuals, as part of a team or a company if it has been in existence for less than two years.

Following a series of information evenings and interactive workshops interested parties submitted a detailed application.

An Taoiseach Enda Kenny, Minister for Agriculture, Food & the Marine Simon Coveney, Teagasc Chairman Dr. Noel Cawley & Director Prof. Gerry Boyle launched the Teagasc Food Technology and Knowledge Transfer Strategy.

A panel with representatives from Bord Bia, Enterprise Ireland, Teagasc and experienced food entrepreneurs conducted interviews to select 30 successful applicants who received mentoring; consumer insight consultancy; R&D assistance and a €5,000 feasibility grant.

All concepts and ideas were stress-tested with consumers in Ireland and key overseas markets.

Following this process, 15 participants moved forward to the final stage to develop an investor ready business plan.

CheeseBoard 2015:

Teagasc is coordinating a major new €1.3 million national research project, titled 'National Cheese Research Programme 2015'. The Irish Cheese Research Consortium (ICRC) embraces the Irish dairy industry's forecast (reflected in Food Harvest 2020) for significant expansion in cheese production, both in overall volume and in specific varieties, over the next 10 years.

The timeline for the research programme reflects the imminent opportunities and challenges that the Irish dairy industry faces with EU milk quotas ending in 2015.

Five academic and research institutions on the island of Ireland will combine their respective competencies to provide an integrated approach to challenges in cheese research that are deemed critical for the future.

The participating research teams that constitute the ICRC include: Teagasc Food Research Programme Moorepark and Ashtown, University College Cork, University of Limerick, University College Dublin and Agri-Food BioSciences Institute (AFBI, Northern Ireland).

Probiotic Bacteria may influence Brain Fatty Acid Composition

Research carried out by Dr. Rebecca Wall and Dr. Catherine Stanton (pictured) and their colleagues at the Alimentary Pharmabiotic Centre in Teagasc Moorepark Food Research Centre and University College Cork, has demonstrated that mice fed with *Bifidobacterium breve* NCIMB 702258 and *Bifidobacterium breve* DPC6330 had altered brain fatty acids and gut bacteria.

The finding that bacteria in our gut influence brain fatty acid composition opens up new possibilities for the use of probiotic foods in the promotion of human health and mental well being.

The researchers showed that mice fed with the conjugated linoleic acid CLA-producing bacterium *B. breve* NCIMB 702258 had increased levels of two fatty acids ARA and DHA, which play important roles in neurogenesis, neurotransmission and protection against oxidative stress and whose levels in the brain influence cognition.

Teagasc Food Innovation Gateways Events

A Food Gateways event at the Teagasc Food Research Centre, Moorepark, Fermoy, showcased emerging technology opportunities, technical services, and pilot plant facilities. Professor Paul Ross, Head of the Teagasc Food Research programme said: "The Irish Agri-Food sector needs to aggressively pursue all opportunities presented, through the exploitation of technologies and biosciences available within Teagasc, and its partner research organisations. The Irish Agri-Food sector can increase its international competitiveness through knowledge based, and market led-innovation."



Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

Teagasc Walsh Fellowship Seminar

The 17th annual Teagasc Walsh Fellowship Seminar 2012 took place in November. Eighteen young researchers presented the results of their research, with a further 21 postgraduate students publishing posters. The overall winner and Walsh Fellow of the year was Noeleen McDonald for her paper on ‘Utilizing the soil’s nitrogen supply potential for efficient grass production’. She was presented with the RDS medal.

Teagasc currently has over 160 Walsh Fellows, which makes the programme a significant contributor to postgraduate education in Ireland. The majority of these are registered for PhDs.

All the Irish universities and some of the Institutes of Technology are involved in the programme. At the moment, 27 Walsh Fellows are registered in universities in Northern Ireland and Great Britain and a further nine in other international universities.



This year saw the first full year of the new M.Agr.Sc Innovation Support Programme, which is being run in association with University College Dublin. This programme aims to equip graduates with the skills and knowledge to be effective in building the capacity of farmers to adopt new practices and technologies.

Walsh Fellow of the year was Noeleen McDonald for her paper on ‘Utilizing the soil’s nitrogen supply potential for efficient grass production’. She was presented with the RDS medal.



Key Facts

RESEARCH ACTIVITIES FACTS			Prog to 31st Dec 2012
1.	No. of Refereed Publications		334
2.	External Research funding in 2012 from EU grants, state grants and levies		€13.70m
3.	Number of Walsh Fellows completed in 2012		64
4.	Number of projects completed in 2012		82
5.	Number of FP7 applications submitted in 2012		13
6.	Number of Technology updates published in 2012		112
ADVISORY ACTIVITIES FACTS			
1	Clients		42,623
2	Discussion /Project Groups		696
3	Profit Monitors		5,957
4	Visits		19,272
5	Consultations		74,488
6	Single Farm Payments		41,316
ENVIRONMENT/REGULATION ACTIVITIES			
7	Simple Fertilizer Plans		6,758
8	Derog. / Detailed NMP		2,659
9	Cross Compliance		4,402
11	REPS Records		6,317
FARM PLANNING ACTIVITIES			
12	Income Generation Plans		946
OTHER			
13	Total No. Meetings (seminars / workshops)		449
14	Farm Walks /Demos		295
15	Total Other Events		790
EDUCATION ACTIVITIES FACTS			
Full Time (Major) Awards			Numbers Participating 2011/2012
Higher Level	Agriculture higher Level Programmes Horticulture		650
			137
		Other Total	208
Further Level	Agricultural courses Horticultural courses Other Further level		995
			1,089
			208
			180
Total			1,477
Overall Total			2,566
PART TIME AND DISTANCE LEARNING (Major Awards – delivered by regional education centres)			
Performance Indicator			ACA for Adult Farmers
Number of Courses in progress - 2012			16
Number Participating			476
ADULT EDUCATION COURSES			
Performance Indicator			
Number of Courses			157
Number Participating			3,867

Goal 1 - Improve the competitiveness of agriculture, food and the wider bio-economy.

CLIENT PROFILE

The Keane Family

Michael and Donal Keane who farm in partnership at Drumurrin, Lisselton, Listowel, Co. Kerry are successful dairy producers. They are farming a layer of peaty soil on top of virtually impermeable clay; like a sponge sitting on a saucer.

Almost 1.3 metres of rain falls on the fields each year, add in the fact that the peat is riddled with bog oak, which Michael has spent numerous hours removing with a digger and you'll understand why local Teagasc adviser John Paul Lenihan says their achievement borders on the heroic. "Improving these fields is fairly painstaking," says Michael "But you don't mind doing it when you know you'll reap the benefits later."

"These fields are close to the parlour so improving them is a priority," says Donal. "We drained and reseeded over four hectares in 2011 at a cost of €16,000 and we plan to continue a programme of drainage over the next number of years."

The Keanes intend to expand from 75 cows to circa 100 cows on their 56 hectares which is split into the main milking block of 34 ha, and the remaining outside block of 22 hectares.

Water from two directions. Local Teagasc adviser David Trant has worked closely with Michael and Donal over many years to gradually understand and counteract the drainage problems on their farm. "The Keane's farm has been drained over the years with (spaced) drains put in to 'lower the water table' in certain fields, and drains have also been sited to deal with springs and seepages where necessary. These drains are critical to stop the water from underneath 'bursting upwards' but the rainfall from above finds it difficult to percolate down into this drainage system.

"Farmers on these soils must be exceptionally careful to avoid compaction by machinery or damage due to poorly timed application of farm yard manure," says David. "Donal and Michael are part of the Teagasc Heavy Soils programme which aims to fine tune management of these exceptionally difficult farming situations."



Goal 2

- Support sustainable farming and the environment



Goal 2 - Support sustainable farming and the environment



Above: Mairead McGuinness MEP with Teagasc Director, Prof. Gerry Boyle and members of the Agricultural Catchments Programme team during a visit to the Dunleer catchment in Co. Louth in January

Agricultural Catchments Programme

Phase 2 (2012-2015) of the Agricultural Catchments Programme, funded by the Department of Agriculture, Food and the Marine began in 2012. It builds on Phase 1 which established a partnership with over 300 farmers in the six catchments and developed extended baseline data for a broad range of agricultural and water quality parameters.

The outcomes from Phase 1 show that intensive farming can, potentially, deliver good water quality, however with some substantial lag times between farm practice changes and reduced risk to water quality.

Outputs from the programme in 2012 included nine peer-reviewed papers and numerous articles and presentations at international conferences. The continued support of the catchments' farmers ensured that the quality and quantity of data was maintained and the programme team, especially the advisers and technicians, continued the successful two-way communication process established in Phase 1.

Energy Smart Farming

An inaugural Teagasc National Agricultural Energy Efficiency Conference was jointly organised with SEAI (Sustainable Energy Authority Ireland, the Farming Independent and Macra na Feirme.

Introducing fuel saving measures can play a significant part in reducing input costs and improving farm profitability. Fuel consumption can vary from 60 to 120 litres per hectare. There are a number of common areas where energy is wasted in farming enterprises and Teagasc Advisers will examine what could be done to reduce costs in these areas.

Teagasc Bioenergy Specialist Barry Caslin said: "Beyond energy efficiency, renewable energy from biomass, wind, water or the sun can make a real contribution to reducing greenhouse gas emissions while bringing a wide range of benefits to businesses including reducing reliance on fossil fuels, potentially lowering energy bills, and improving your 'green' credentials."

The conference examined the potential of renewable technologies such as heat pumps, solar PV, wind turbines in displacing fossil fuel and providing energy especially for our more intensive businesses.

Teagasc and Bord Bia 'Beef Carbon Navigator'

Teagasc and Bord Bia launched the 'Beef Carbon Navigator', a farm management tool, at the National Ploughing Championships. Using the Carbon Navigator will allow farmers set improvement targets in key practical management areas and see the results on their cattle enterprise in terms of environmental and economic performance.

The Carbon Navigator marks the next stage of the Beef Sustainability programme that has been developed jointly by Teagasc and Bord Bia. To-date, almost 28,000 Quality Assured farms have provided farm enterprise information that allows the environmental performance of their farms to be assessed.

Now the programme is focussing on providing practical advice to farmers on the steps they can take to improve their environmental performance through enhanced farm efficiency.

The Carbon Navigator uses current performance, as assessed at the Quality Assurance audit, and allows individual farmers to set future targets and make comparisons with average and best performing farmers. The 'distance to target' approach is designed to help achieve practice adoption and efficiency targets over a three-year period.

Teagasc researchers are now working on a Dairy Carbon Navigator which is planned to be introduced in collaboration with Bord Bia in 2013.



Goal 2 - Support sustainable farming and the environment

New Fertilizer Tracker App

Teagasc, in association with Vodafone Ireland, launched a new Teagasc App for use by Irish farmers and the Agri Industry to keep track of their fertilizer use. The new Teagasc App was launched by the Minister for Agriculture, Food and the Marine, Simon Coveney TD at the National Ploughing Championships in September.

The innovative Teagasc App, developed by Furious Tribe for Vodafone Ireland, has two components; An interactive tool called “fertilizer tracker” which can be used by farmers to record fertilizer purchases and compare

the total Nitrogen (N), Phosphate (P) and Potassium (K) actually used with their annual fertilizer plan. A link to the mobile version of the Teagasc website enables users to keep in touch with the latest Teagasc news, upcoming events and current publications.

Currently, farmers manually review the quantities of fertilizer they purchase from suppliers, and compare it to a nutrient management plan prepared for their farm, which sets out the amount of Nitrogen (N), Phosphate (P) and Potassium (K) they can use in the year ahead.

The new App allows farmers to check their usage at any time and in any place reducing the amount of time involved in carefully managing this process.

Farmers can quickly and easily use the App on the move or at the merchant’s store when discussing prices. Teagasc will continuously develop and improve the App in future years. It is available for free at the App Store for iPhone users and the Play Store for Android users.

Pictured at the launch of the new Teagasc Smart phone App for tracking of fertilizer usage are Charlie Marriott, Vodafone, Professor Gerry Boyle, Director, Teagasc, Simon Coveney, Minister for Agriculture, Food & the Marine, Gordon Peppard and Stuart Childs, Teagasc.



CLIENT PROFILE

No kidding. First develop your market!

When Teagasc client Michael Finegan returned home to Meath from a spell in New Zealand he wasn’t looking for an easy option. Having managed a 2,000 cow unit there he was no stranger to hard work and loved dairy farming. He planned to run the family dairy unit between Slane and Navan in County Meath but expansion was impossible without buying quota. The need for a new parlour was also going to require significant capital.

“We had seen goat units in New Zealand and we decided to try a flock here,” says Michael who bought in a flock of goats and imported a second-hand goat milking parlour from the UK. “Our Teagasc adviser Cian Condon has been a huge support, providing advice on all aspects of the business.”

Goat’s milk is a free market and is possibly a good indicator of how dairy milk prices will develop after 2015. “Even when demand was booming the price we were getting was volatile,” says Michael. “The price could vary between 50 and 70 cents through the year. We wanted an outlet that would offer us a more stable milk price.” Cheese was the answer. Michael and his wife Jenny thought there might be a market for an unpasteurised blue cheese made from goat’s milk. They approached cheesemaker Peter Thomas who produces Castlebellingham Blue, a cow’s milk cheese. Peter Thomas had spare capacity in his cheese plant and agreed to produce Boyne Valley Blue under contract. Crucially, Michael owns the brand.

“It’s vital to build up your outlets before expanding production,” says Michael. “We plan to add to our goat numbers but at the moment we are putting a huge amount of time and effort into building the brand.” Boyne Valley Blue will soon be available in Tesco in Ireland and is exported in co-operation with Sheridans the cheesemongers. A major upmarket London retailer Neal’s Yard is planning to stock the cheese. “What Peter and Jenny have shown is that with energy and tenacity farmers can really add value to their production,” concludes Cian Condon.



Michael Finegan (pictured holding cheese) with Teagasc adviser Cian Condon.

Goal 2 - Support sustainable farming and the environment

International Nitrogen Workshop

The 17th International Nitrogen Workshop took place for the first time in the Republic of Ireland, at Teagasc, Johnstown, and brought together over 300 scientists from 34 countries. Organised by Teagasc and the Agri-Food and Biosciences Institute, Northern Ireland, this international conference focused on innovative solutions for the sustainable use of nitrogen resources in farming.

Nitrogen is one of the key factors limiting global food production, with a high proportion of current food production dependant on inputs of nitrogen fertilizers. The production of chemical nitrogen fertilizers uses 1% of global energy, but supports global food production.

Nutrient Calculator Wheel

A new 'Nutrient Calculator Wheel' produced by The Fertilizer Association of Ireland, in association with Teagasc, and K+S UK & Eire Ltd. was launched by the Minister for Agriculture, Food and the Marine, Simon Coveney TD. The nutrient wheel is a field ready reckoner for estimating the phosphorus and potassium offtakes from grassland and tillage crops in Ireland. It consists of an easy-to-use wheel that shows the estimated offtake of phosphorus and potassium based on simple input values of stocking rate, concentrate feed usage and crop yield. It also includes useful field notes on soil test results and fertility levels, organic manures, lime, sulphur and magnesium.

The Minister for Agriculture, Food and the Marine, Simon Coveney, TD said that "this is a great initiative by all parties concerned and will play an important role in ensuring that fertilizer inputs are used efficiently in a cost effective and environmentally friendly manner." Minister Coveney also commended the Fertilizer Association of Ireland, Teagasc and K + S UK & Eire Ltd for the proactive approach they had taken in producing the nutrient wheel.



Drs. Noel Cawley, Anne Kinsella, Brian Moran and Thia Hennessy at the launch of the Teagasc National Farm Survey, 2012.

Low levels of profitability continue to be a problem for a large number of farms and only about one-third of farms are economically viable farm businesses. Almost 26,104 farm households are economically vulnerable, i.e. the business is not viable and neither the farmer nor the spouse works off the farm. The availability of off-farm employment opportunities continued to contract in 2012 and the number of farmers working off the farm fell for the sixth consecutive year. The proportion of farmers also engaged in off-farm employment fell from 30% in 2011 to 27% in 2012.

Falling milk prices coupled with a significant increase in expenditure on feed stuffs led to a reduction of 24% in the average income on dairy farms in 2012. However, 2011 was a particularly good year and the 2012 income still remains slightly ahead of 2010 levels.

Beef prices remained reasonably good in 2012, but increased input expenditure eroded the gain in output, and income on cattle farms fell by 8%. Following a poor harvest globally, grain prices were also quite strong in 2012. However the price increase was not sufficient to offset the poor yields and income on tillage farms fell by 4%.

National Farm Survey 2012

Family farm income decreased by 15% in 2012, bringing the average income figure for the farming sector to €25,483.

Speaking at the launch of the results Dr. Thia Hennessy, Head of the Teagasc National Farm Survey said: "While agricultural commodity prices remained relatively favourable in 2012, the inclement weather adversely affected production costs and crop yields. In particular, dairy farms were impacted by the wet summer and direct costs of production increased by 21%." She also stressed that "many farmers depleted their stock of winter fodder early last autumn and this is likely to have further negative implications for income this year."

"The €25,483 is the average income for the full population of approximately 80,000 farms and this conceals the large variation that exists across the different farming enterprises. The average income on dairy farms was €51,648, compared to just €11,743 on Cattle Rearing farms" said Dr. Brian Moran of Teagasc's National Farm Survey.

Farming continues to remain highly reliant on direct support payments. The average direct payment per farm was €20,534 comprising 81% of farm income. The Single Farm Payment continues to be the most important component of direct payments. It comprised 58% of farm incomes on average and over 80% of income on cattle farms in 2012.



Goal 2 - Support sustainable farming and the environment

Investigating the environmental impact of GM blight resistant potatoes

Phytophthora infestans, which causes late blight disease, has shown in the past that it can decimate the Irish potato crop. It remains a very real threat to Irish potato growers. New more aggressive strains of the pathogen have arrived in Ireland over the last four years. Farmers have had to adapt by increasing the amount of fungicide applied but this is not sustainable; especially in light of new EU laws designed to reduce the amount of chemicals that are applied on our crops.

Research confirms that GM late blight resistant potatoes have the potential to significantly reduce the fungicide load on the environment. Teagasc researchers will investigate whether there are long term impacts associated with a specific GM crop in carefully controlled conditions.

Awarded a license by the EPA to carry out field research on a GM potato, designed to resist potato blight disease, Teagasc researchers will carry out work over the next four years to determine the impact this technology could have on the Irish agri-environment. The work is being completed as part of the 22 partner 'AMIGA' consortium that represents 15 EU countries and is funded through the EU's Framework 7 research programme. Critically, the biotech industry has no association with this public-funded research project.

Teagasc has put the necessary measures in place to ensure that it fully meets its obligations as required by the EPA. The work is taking place at the Teagasc Crops Research Centre in Oak Park, Carlow. Teagasc will also conduct an outreach programme with stakeholders and the public to coincide with the establishment of the experiment, to facilitate an inclusive and impartial discussion on the issues that most concern people.

The field study will be isolated from the on-going conventional potato breeding programme that has been successfully running at Oak Park for over 40 years. There are no linkages to the biotech industry so Teagasc is clear that the work is not about testing the commercial viability of GM potatoes.

The GM study will gauge the environmental impact of growing GM potatoes in Ireland and monitoring how the pathogen, which causes blight, blight and the ecosystem, reacts to GM varieties in the field over several seasons.



Goal 3

Encourage diversification of the rural economy
and enhance the quality of life in rural areas



Goal 3 - Encourage diversification of the rural economy and enhance the quality of life in rural areas

Commission for the Economic Development of Rural Areas

The Commission for the Economic Development of Rural Areas was launched in autumn 2012 by the Minister for Environment, Communities and Local Government, Phil Hogan TD.

The aim of the Commission is to carry out an extensive public consultation on the future economic potential of rural Ireland and how best to channel funding and resources between 2013 and 2025. It aims to generate a jobs strategy for rural Ireland.

The Commission for the Economic Development of Rural Areas will involve 3 stages;

- A nationwide consultation of rural stakeholders including employers, unions, farm bodies, community organisation and the public sector;
- research and analysis of economic factors affecting rural areas;
- the preparation of a strategy supporting the medium-term economic development of the Rural Areas for the period to 2025.

Teagasc, as one of the leading research organisations in Agri-Food and Rural Affairs, will take responsibility for the research and consultation process. Teagasc will do this in conjunction with the Department of Environment and the Western Development Commission (WDC).

At the launch of the Commission, Prof. Cathal O'Donoghue, Head of the Teagasc Rural Economy and Development Programme said: "Farm households have been particularly affected by the downturn with the off-farm employment rate of farmers falling back to late 1990's levels. Farm households would thus be one of the main beneficiaries of more jobs in rural areas. On the other hand the Food Harvest 2020 strategy for the Agri-Food sector has a target to generate 25,000 new jobs and thus the sector can make a substantial impact on rural job creation."

Commenting on the partnership between Teagasc, WDC and the Department, Teagasc Head of Research, Dr. Frank O Mara said: "It is important for state agencies to combine expertise and work together to find solutions to the national jobs crisis."



Unique Opportunities for Farm Families

Over one hundred people assembled in Macreddin Village, Co. Wicklow at an event to celebrate 2012 – UN Year of Cooperatives. The event, hosted by Teagasc in collaboration with Bord Bia's TASTE Council, ICOS and UCC's Centre for Cooperative Studies and sponsored by Cold Move, focused on cooperative models that assist farmers to pursue opportunities in high value-added differentiated food markets.

"Products can have varying degrees of differentiation, ranging from raw products with premium qualities used as ingredients in the production of functional foods to artisan, speciality and regional food products," says Teagasc sociologist Dr. Áine Macken-Walsh, a speaker at the conference.

"However, in developing farmer-owned brands, farmers can experience challenges in undertaking the range of processing, branding, marketing and other tasks that are required to realise maximum potential."

'Built Heritage' on Irish Farms

Ireland's landscape is enriched by its heritage of farmhouses and outbuildings. In the past people made clever use of materials available locally and traditions followed were based on experience of the local climate. Thus these buildings appear very much in harmony with their local setting. Regional differences in walling or roofing material used in buildings are echoed in features of the farmed land.

This year, National Heritage Week focused on Built Heritage. The agricultural landscape is rich in built heritage from archaeological sites to traditional farm buildings.

As part of National Heritage Week, Teagasc in conjunction with The Heritage Council held a number of Countryside Management Events on the topic of Traditional Farm Buildings and their maintenance.

Ireland's landscape is enriched by its heritage of farmhouses and outbuildings. Regional differences in walling or roofing material used in buildings are echoed in features of the farmed land.

At an event in Galway, Catherine Keena, Teagasc Countryside Management Specialist stressed the importance of traditional farm buildings as landscape features, habitats for bats and birds such as owls, swallows and swifts and an important part of the history of the farm, linking farmers to past generations.

"There is great interest from local farmers who take pride in the traditional farm buildings on their own farms and are keen to learn more about their maintenance," said Teagasc adviser Tom Walsh, who organised the Galway event.



Goal 3 - Encourage diversification of the rural economy and enhance the quality of life in rural areas

Soft Fruit

Irish consumers eat €35 million worth of strawberries each year with an increasing proportion of the fruit being produced in Ireland. The Irish soft fruit industry has grown by 190% in the last decade alone and the sector has been very resilient during the economic downturn.

Protected strawberry production is now the mainstay of the berry industry in Ireland. Growers have invested millions in new glasshouse technology to extend the growing season for Irish soft fruit. Most of the fruit grown is for home consumption but about 15% is exported to the UK each year.

Eoin Keane, Irish Seed Savers Association and John Crowley, Teagasc at the first of a series of Traditional Orchard Courses in Clonakilty Agricultural College.

Teagasc research on strawberry tray plants has been vital for a number of strawberry plant producers in Ireland. They have increased their production over the last number of years and may be in a position to export in the future. This has allowed Irish growers to reduce their reliance on imported plant material by at least 40%.

Traditional orchards

Teagasc in association with Irish Seed Savers Association provided Countryside Management Courses on Traditional Orchards throughout the country in 2012. Over 2,000 farmers have planted approximately 30,000 traditional apple trees under recent agri-environment schemes.

Mature traditional orchards are a habitat for biodiversity such as moths, butterflies, ladybirds, bees, hedgehogs, hares, snails, bullfinches owls, sparrow and bats. Planting traditional Irish varieties ensures the survival of this valuable pool of genetic resource.

Eoin Keane, Irish Seed Savers Association stresses that early care of new orchards is vital in the juvenile stage, with minimal management in later years. The juvenile stage lasts from three years for trees on smaller rootstock, to ten years for trees on larger rootstock. During this time it is essential that the root zone is kept weed free, in at least one metre radius.

Tying and staking must be monitored and adjusted as necessary to prevent the main stem twisting. Tree shaping by pruning is done each winter during the juvenile stage on a dry day. It is important for the long term health of the tree and establishes good long-term fruit bearing capacity. It is skilled work and will vary depending on the long term management plans for the orchard.

Organic production

The Teagasc National Organic Conference themed ‘Challenges and Opportunities for Organic Producers’ took place in Tullamore, as part of a series of events organised for National Organic Week. There are several challenges facing the development of the organic sector in Ireland. The buoyant conventional farming sector has partly led to a stabilisation in the number of farmers converting to organic farming.

The Food Harvest 2020 report states that an increase in organic land use to 5%, from the current level of just over 1%, is ambitious and will require actions in a number of areas including promotion, marketing, innovation, research and product development.

Teagasc are committed to working closely with the Department of Agriculture, Food and the Marine to develop the organic sector.

In organic farming the concept of sustainable land management is of primary importance and soil quality plays a large role in the production system. Dr. Rachel Creamer, Teagasc Johnstown Castle, Wexford discussed the soil management components of sustainable land management in the organic context and also addressed the application of usefulness of indicators of soil quality outlining the European project Teagasc are involved in testing and developing indicators for soil biodiversity.

Teagasc researchers also presented results on soil quality and nutrition in the context of organic farming; research work on composting; the latest updates on clover research; and key findings on the phytochemical content of organic and conventional food crops.



Goal 3 - Encourage diversification of the rural economy and enhance the quality of life in rural areas

Teagasc/UCC Research in Nature

New research published in the journal Nature shows that a relationship exists between diet, gut bacteria and the health of older Irish people. The findings provide exciting new opportunities for the food industry as there is now the scientific basis for developing foods to promote healthier ageing.

The discovery was made by a multidisciplinary team of scientists from University College Cork and Teagasc Food Research Centre, Moorepark.

The team collected information on diet, physical activity, immune function, and cognitive function, and measured the faecal microbiota composition of 178 older persons living in different settings in the South of Ireland.

The study, funded by Department of Agriculture Food and the Marine and the Health Research Board, found that the composition of the gut microbiota can positively and negatively impact the health of older people in our population.

According to Professor Paul Ross from Teagasc “particular food ingredients that promote certain components of the gut microbiota may be useful for maintaining health in older individuals. In addition, profiling of the gut microbiota coupled with metabolomics offers the potential for biomarker-based identification of individuals at risk of less healthy ageing.”

Some of the authors of the Nature paper are pictured at UCC: Prof. Ger Fitzgerald, Prof. Fergus Shanahan, Prof. Colin Hill (all UCC). Minister for Agriculture, Food and the Marine, Simon Coveney TD, Prof. Paul Ross (Teagasc), Dr. Siobhan Cusack and Prof. Paul O’Toole (both UCC).



CLIENT PROFILE

Shannon Symons

From Kwa-Zulu Natal to Kildalton.

Teagasc Kildalton college is gaining international recognition for the high quality of its equine courses and facilities.

Nearing the end of a demanding interview Shannon Symons was asked what she hoped to achieve with the knowledge and experience she would gather on the Teagasc Kildalton Equitation course. “To ride in the Olympics; and start my own stud farm,” was her reply. Lofty goals. But, for this unassuming, softly spoken and down-to-earth 24-year-old from Kwa-Zulu Natal in South Africa, aiming high is simply common sense.

With the whole English-speaking world to choose from Shannon elected to attend Kildalton where the 70 equitation students are part of a 700 strong student body. Courses available on a range of agriculture and horticulture subject areas as well as the two equine subjects: Equitation and Stud farm management.

By recommendation. “I have an aunt in the UK and a friend of her’s there, an equine journalist, recommended Kildalton,” says Shannon Symons. “I also did quite a bit of research about the college and the courses here. The staff were incredibly responsive and helpful and when I visited I loved the mix of traditional college buildings and ultra modern facilities.”

Shannon’s choice reflects growing international recognition of the quality of the teaching and facilities at the Teagasc college located near Piltown, county Kilkenny. In recent years students from Portugal, the United Kingdom and Germany have studied equitation and stud management at Kildalton.

“I am learning so much,” says Shannon Symons. “I thought I knew about horses until I came here.”



Goal 3 - Encourage diversification of the rural economy and enhance the quality of life in rural areas

Health benefits of seaweed

Teagasc researchers are looking to seaweed for proteins with health benefits for use as functional foods. Historically, edible seaweeds were consumed by coastal communities across the world and today seaweed is a habitual diet in many countries, particularly in Asia. Whole seaweeds have been successfully added to foods in recent times, ranging from sausages and cheese to pizza bases and frozen-meat products.

Teagasc Researcher, Dr. Maria Hayes.

Today, cardiovascular disease (CVD) accounts for more than 4.3 million deaths each year and high blood pressure is a main cause of CVD. In addition to its use as a protein source, the researchers have found that some seaweed proteins may have health benefits beyond those of basic human nutrition – for use in functional foods.

“It is also possible that protein isolated from *P. palmata* as part of this study could be used for

technical purposes in food manufacture, for example in the manufacture of reduced fat products,” says Dr. Maria Hayes.

The Marine Functional Foods Research Initiative, also known as the NutraMara programme aims to drive the development of the marine sector and assist food companies through the identification of novel, functional foods and bioactive ingredients from sustainable Irish marine resources. These resources include seaweeds, microalgae, marine processing co-products and aquaculture materials. NutraMara is led by the Teagasc Food Research Centre, Ashtown.

Social Inclusion a Key to Rural Suicide Prevention

A major UCD/Teagasc study was completed in 2012 in response to an increased risk of suicide in rural communities with males being at least three times more likely to complete suicide than women.

The study found that background factors to suicidal action include mental illness, economic difficulties and marital separation.

Low educational attainment, limited job opportunities, multiple job histories, marginal farming and dependency on social welfare payments characterize the biographies of the at-risk men interviewed.

Lack of employment opportunities, the stigma attached to mental illness, men's attitudes to health and a narrow range of treatment options greatly reduce the possibility of solving the mental health problems of this group.



The findings broadly concur with similar studies of male suicidal behaviour in rural Australia, Scotland and the US as well as studies of urban Irish men. The study concluded that prevention could be greatly facilitated by social support provided at local level by existing farming, sporting and voluntary organisations. Such support could also help to address the issue of stigma and social exclusion.

The project was a joint UCD/Teagasc project supported by Teagasc's Walsh Fellowship Scheme. Participants in the study were Dr. Anne Cleary (School of Sociology, UCD); Ms. Maria Feeney (PhD Student, Walsh Fellow); and Dr. Áine Macken-Walsh (Rural Economy and Development Programme, Teagasc).

Safe Handling of Cattle on Farms

Teagasc, in association with the Health and Safety Authority and ICBF, are working to reduce the level of injury associated with livestock, while at the same time improving animal welfare.

The role of the Human-Animal Relationship (HAR) has been studied at Teagasc because of its important role in safety. Contact between cattle and stockpersons has decreased over the years, with increased mechanisation, increased size of herd, and the number of farmers in part-time farming, resulting in less time allocated to animals by the stockperson.

Teagasc participated in a European Union Leonardo da Vinci livestock safety project where safety and related welfare issues of cattle handling were examined. A review was undertaken of research related to safety/welfare with cattle, particularly focussing on the work of Professor Temple Grandin of Colorado State University, USA. Professor Grandin is world renowned for her work on livestock behaviour and safety.

Understanding the concepts of 'flight zone' and 'point of balance' will help cattle handlers to be able to move animals more easily. The point of balance is at or near the animal's shoulder and it is determined by the animal's wide-angle vision.

John McNamara, Teagasc Health and Safety specialist advocates caution when managing animals.

Animals will move forward if the handler stands behind the point of balance. They will stop if the handler stands in front of the point of balance.

The Teagasc study of cattle reactions to humans (HAR) and a fear test were carried out. They found that fearfulness in cattle changes over time and is more related to the experience of the animals than to genetic factors. Fear of isolation is more important for animals than fear of humans.

A DVD to communicate the Temple Grandin approach to livestock handling and other important livestock safety measures has been prepared and has been shown at Teagasc Training courses and Advisory meetings and at Marts. The DVD can also be viewed at www.youtube.com/user/TeagascMedia.



Goal 3 - Encourage diversification of the rural economy and enhance the quality of life in rural areas

STAFF PROFILE

Mary Moloney

Dr. Mary Moloney joined Teagasc just over eight years ago as a contract research officer working in the food safety department, residue laboratory at Teagasc Ashtown, in west Dublin.

The residue laboratory at Ashtown is a national reference laboratory for antiparasitics, veterinary drugs and feed additives and carries out an extensive research programme in the area of chemical contaminants in food.

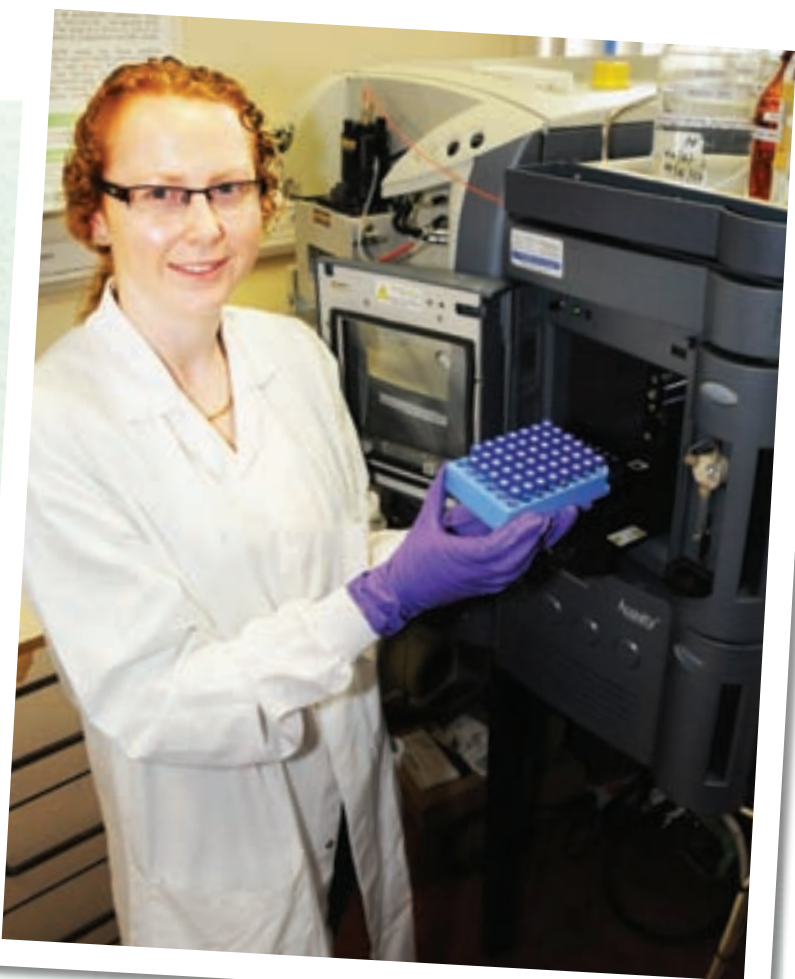
The laboratory's testing service is internationally accredited and generates over 65,000 analytical test results annually as part of the national monitoring plan for the Department of Agriculture Food and the Marine (DAFM) and the Food Safety Authority of Ireland and enables industry to carry out self monitoring programmes ensuring the safety of Irish Food.

"The laboratory specialises in the area of mass spectrometry and immunoassays and is home to the national residue database," says Mary.

Mary is now a Laboratory Technologist and has a number of roles within the Residue laboratory. As lab manager/deputy head of the laboratory she is responsible for scheduling work to ensure satisfactory turnaround times are achieved for all customers, reviewing data packs prepared by a team of experienced analysts in residues (Helen Cantwell, Patrick Byrne and Martin McCormack) and issuing reports. She also oversees a calibration and maintenance schedule to ensure that all laboratory equipment is fit for purpose.

Mary works along side Dr. Martin Danaher, Head of the Laboratory. She is an experienced analyst and has carried out method development to validation in the area of anti-coccidials. This work has been disseminated in peer reviewed journals and international conferences. Currently she is working on developing a multi-residue method for pyrethroid pesticides in animal fat. Among other responsibilities Mary is the Radiation Protection Officer at Ashtown and is a member of the Teagasc Laboratory Safety Committee.

A native of Tipperary, Mary is an avid tag rugby player in her spare time. She also enjoys running, cycling and Ultimate Frisbee.



Goal 4

Enhance organisational capability
and deliver value for money



Goal 4 - Enhance organisational capability and deliver value for money

Developing Leadership in the Public Sector

Teagasc has taken steps to ensure its managers and leaders are trained and equipped to cope with the challenges and opportunities that arise. As part of the Teagasc People, Leadership and Change (PLC) strategy, two programmes have been put in place, one in the area of leadership in conjunction with the Irish Management Institute, and another in the area of management practice in partnership with Pathway.

Both of these programmes will help ensure that Teagasc staff will have the tools and ideas to enable them to demonstrate leadership at all levels in the organisation and to manage programmes that deliver value for Teagasc clients.

Teagasc/RDS lecture series kicks off with ‘The Perfect Storm’

Teagasc and the RDS joined forces to organise a public lecture series on the theme ‘Grand Challenges for Global Agriculture and Food’. This important series deals with the growing challenges of sustainably meeting the food security needs of a rapidly increasing global population and are presented by outstanding international scientists and policymakers.

Overleaf:
Regional Advisory Manager Ben Wilkinson,
John Perry TD Minister of State for Small Business, Dr. Noel Cawley, Professor Gerry Boyle and Tony McLoughlin TD for Sligo/Leitrim.

The series will contribute to heightening awareness of the scale of the problem and how all of us - governments, civil society, the private sector and individual consumers – have a role to play in addressing the challenges. Professor Sir John Beddington, Chief Scientific Adviser to the UK Government and Member of High-Level Stakeholder Group responsible for the 2011 UK Foresight Report on The Future of Food and Farming, delivered the inaugural lecture in the Concert Hall, RDS, Dublin on July 12.

Professor Beddington provided an overview of the many challenges facing agriculture and food production to 2050 in a lecture entitled “The Perfect Storm: The International Challenge of Food, Water and Energy Security”.

New Extension to Advisory and Education Centre

The newly extended and renovated Teagasc advisory and education centre in Ballymote, County Sligo, was officially opened by John Perry TD, Minister of State with responsibility for Small Business, at the Department of Enterprise, Jobs and Innovation.

Speaking at the event, Minister Perry said that agriculture is one of the important indigenous sectors of the economy, providing steady jobs, contributing to the economic activity in rural areas and providing the country with much needed valuable export earnings.

He said that farming and the food industry is making a valuable contribution at the current time

and will into the future, as the plans for the development of the sector laid out in the Food Harvest 2020 report are implemented.

REPS Support Work Contracted Out

Given the workload for the advisory service in 2012, supporting over 40,000 fee paying clients, Teagasc sub-contracted part of its REPS related workload.

The number of front line advisers working in Teagasc has reduced by 36% since 2009. The number of administration staff in the advisory service has also reduced significantly. There is now a deficit in all advisory regions between the planned workload and available advisers. Consequently some of the work around REPS records and REPS plan amendments, where required, has been sub-contracted.

Science Week at Teagasc

‘How clean are your hands? Demystifying DNA. Reducing greenhouse gas emissions.’ These are some of the topics which over 1,000 second-level students learned about during Teagasc Science Week events.

Carlow: ‘Potatoes get sick too’, Dr. Stephen Kildea, Teagasc Crops, Environment and Land Use Research Centre, Oak Park, Carlow told primary-level students from Gaelscoil Eoghain Ui Thuairisc before explaining the science of the potato at Carlow library.



Cork: Students visiting Teagasc Moorepark heard how probiotic bacteria work to fight off bad bacteria and how examining their DNA helps. They also saw how cream is separated and butter and buttermilk are made.

Students checked milk samples for mastitis by checking somatic cell counts. Students also learned about ruminant nutrition, methane emissions, automation in milking, the importance of grassland measurement and management, and calf rearing.

Dublin: UV light detectors check just how clean hands are and stress the importance of good hand washing at the Food Safety Department, Teagasc Food Research Centre, Ashtown, Dublin.

‘Fungi: the good, the bad and the weird!’ was presented by the Horticultural Development Unit, at Ashtown and students had a chance to grow their own fungal zoo. Students also performed sensory analysis on foods.

Galway: At Teagasc Athenry students saw how science is being used to address issues related to reproduction and parasitism in sheep - specifically methods for investigating parasite infection and resistance to anthelmintics. Students could view alternative sheep breeds and learn about their attributes and role in Irish farming.

Meath: Students visiting the Teagasc Animal Bioscience Research Centre, Grange saw the latest technologies in molecular biology in the areas of animal breeding, fertility, reproduction and health and welfare.

Student participating in the National Science week.

Wexford: Students visited field experiments at Teagasc Crops Environment and Land Use Research Centre at Johnstown Castle, Wexford. They learned about current Teagasc research in the areas of ecology, carbon cycling, water quality and soils and nutrient efficiency.

Science Week is a Discover Science & Engineering (DSE) project. DSE initiatives are managed by Science Foundation Ireland on behalf of the Office of Science, Technology and Innovation at the Department of Jobs, Enterprise and Innovation.

ICT Investments

In 2012 Teagasc more than doubled its 2011 investment in ICT systems. Investments included the development of the Pasturebase Ireland national grass database, the upgrading of the e-Profit Monitor system to handle substantially increased usage, and the rollout of smartphones to Teagasc’s mobile workforce. Work also started on the inclusion of pigs into the e-Profit Monitor system. Data links to the bulk of Teagasc’s offices were also upgraded

Annual Energy Usage Report

Teagasc operate out of 55 locations nationwide varying in scale from Campus type facilities with 100+ staff (e.g. Research Centres & Colleges) to small local Advisory offices with approximately 10 staff.

The Teagasc built environment is the principal user of energy resources accounting for up to 75% of total consumption.

In 2012, Teagasc consumed 24,822 MWh of energy consisting of: 10,137 MWh of electricity or 41% of total energy 9,084 MWh of fossil fuel for space heating or 36% of total energy 4,620 MWh of vehicle fuel (agricultural, commercial transport and car fleet) or 19% of total energy 981 MWh of renewable fuels or 4% of total energy.

Teagasc has an on-going program to upgrade the building fabric of its facilities to reduce heat loss (double glazing, roof and wall insulation etc.). This program will continue in 2013. Teagasc has a policy to increase the proportion of renewable energy it utilises and intends to construct an anaerobic digester at Grange commencing in 2013 as part of this initiative.

Office and land sales

Teagasc is continuing its rationalisation through the implementation of the Teagasc Change Programme within the organisation.

The offices at Limerick, Donegal (Doonan) and the Principal’s House (Clonakilty) were sold in 2012. Also under the Change Programme the lease on the Swinford office was ceased, as was the lease on Eagles Farm (Athenry).

Technology Updates

A collection of over 100 Technology Updates, highlighting the key findings from research over the last five years were published in 2012. The Teagasc research portfolio comprises some 300 research projects, carried out by 500 scientific, technical and support staff in research centres throughout Ireland.

In order to transfer these discoveries from research projects to end users to ensure that research has an impact Technology Updates are completed for all research projects.

These are designed to ensure a more effective transfer of new research information to the advisory and training services and to the end-user and to provide an easily accessible record of the main research findings.

CLIENT PROFILE

Makhteshim Agan

Makhteshim Agan, established in 1945, is the world’s leader in branded off-patent crop protection solutions. The company has its roots in Israel but is now a multinational group active on all continents, offering a wide range of products that protect against destructive weeds, insects and disease, and increase crop yield by preventing yield losses. Turnover reached \$2.8bn in 2012.

“Makhteshim have recently launched a new multi-site cereal fungicide and we’re keen to see what effect it might have on reducing selection for insensitivity or resistance to other fungicides,” said Paul Fogg, Technical Manager, Makhteshim Agan, UK and Ireland.

Funding. “The company funded a post at Teagasc Oak Park to avail of Teagasc expertise in glasshouse and field screening,” said John Spink, Head of the Teagasc Crops Research Department. “We also do pathogen population phenotyping and genotyping to measure what the benefit of using the multi-site product might be to the industry.” The glasshouse screening confirmed modelling work being carried out in collaboration with ADAS and Rothamsted Research in the UK, and is now being confirmed using natural Septoria populations in the field.



Jeanne Mehenni-Ciz’s post at Teagasc, Oak Park is funded by Makhteshim Agan

Goal 4 - Enhance organisational capability and deliver value for money



Teagasc 2012 Gold Medal Award

The Teagasc Gold Medal in Agriculture and Food Science for 2012 was presented to Dr. Lance O'Brien, Head of the Teagasc Foresight and Strategy Department. The Teagasc Gold Medal is awarded on an annual basis to a serving staff member who has made an outstanding contribution to the organization over a long period.

The Gold Medal was awarded to Dr. O'Brien in recognition of the substantial contribution he has made over a distinguished 33-year career across a broad range of Teagasc functions including corporate and strategic planning, programme and project planning, foresight development and research management.

Dr. O'Brien was Project Manager of the major Teagasc Foresight exercise – Teagasc 2030 –Teagasc's Role in Transforming Ireland's Agri-Food Sector and the Wider Bioeconomy – published in 2008.

Above: Dr. Noel Cawley presenting the Teagasc Gold Medal to Dr. Lance O'Brien with Teagasc Director Prof. Gerry Boyle.

He has contributed to national and international research policy and Foresight initiatives, including Food Harvest 2020. He is a member of the national organising committee for the Dublin 2013 EU conference on 'Bioeconomy in the EU: achievements and directions for the future'.

He was a member of the Third EU Standing Committee on Agricultural Research (SCAR) Foresight Expert Group.

Battle to Feed a Changing Planet

Together with the European joint programming initiative on Agriculture, Food Security and Climate Change" (FACCE – JPI) Teagasc organized an open debate during the Euroscience open forum (ESOF) conference on the questions: "Can agriculture eradicate hunger and reduce climate change at the same time?"

"Do we need to increase food production – or waste less food instead?"
"Who should take the lead in the fight against hunger and climate change?"
The debate brought together five world-renowned scientists – including Professor Rajendra K. Pachauri, Chairman of the Nobel Prize winning Intergovernmental Panel on Climate Change – to debate these hot topics in front of an audience of 2,000 fellow scientists, policy makers, journalists and members of the public.

The Great Debate

Welcoming the speakers to the Great Debate, Teagasc Director, and Professor Gerry Boyle said: "we are proud to host the world's leading authorities to debate the hot issues of our generation. Ireland is a small country with a big agricultural interest. No country can solve the twin challenges of food security and climate change on its own – and every country has to be part of the solution.

"By facilitating this debate on behalf of the EU Joint Programming Initiative on Agriculture, Food Security and Climate Change, we ensure that our own programme on sustainable agricultural intensification is taking a leadership role in helping develop global solutions."



Pictured at the Teagasc stand at ESOF 2012 are (from left) Dr. Stuart Green and Dr. Ewen Mullins, Teagasc; Maire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science; and Eric Donald, Head of Public Relations, Teagasc.



Goal 4 - Enhance organisational capability and deliver value for money

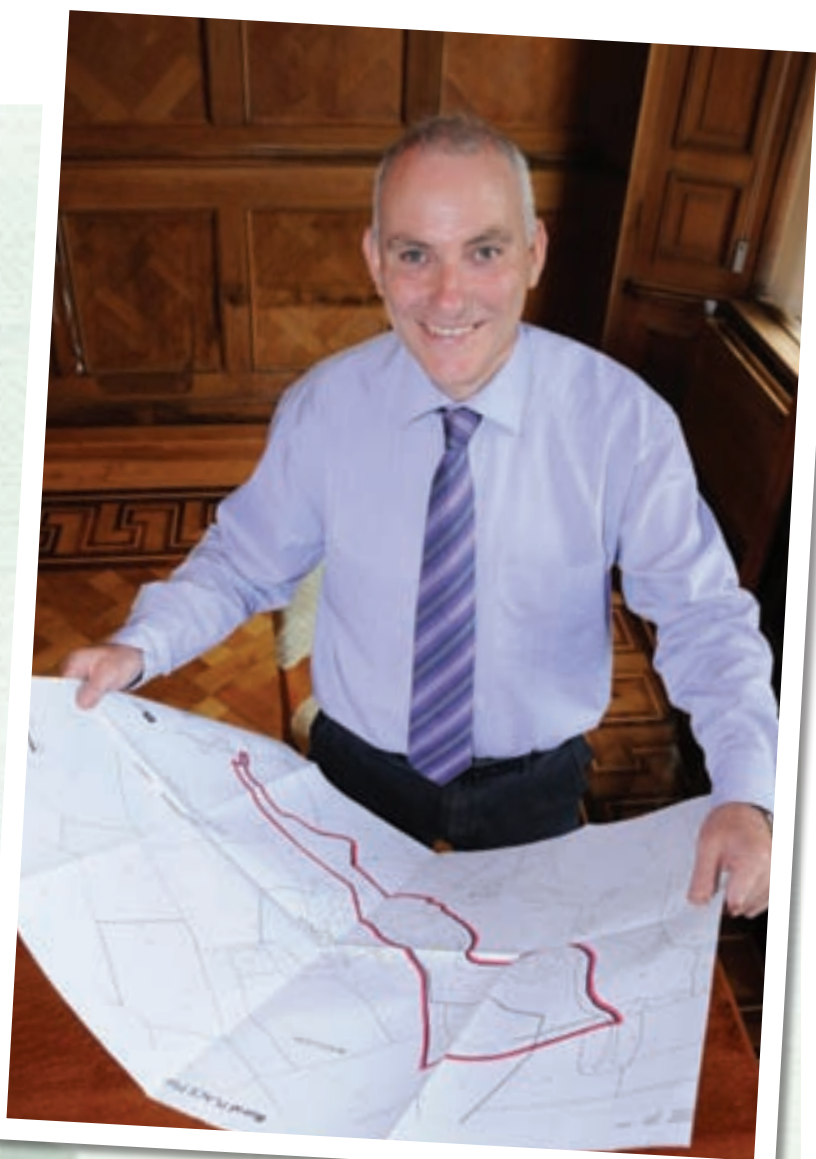
STAFF PROFILE

Tom Cooney is Head of the Corporate Services Department and is based at Teagasc Headquarters at Oak Park in Carlow. Tom Joined Teagasc in 2004 and has completed a Masters Degree in Strategic Procurement.

The Corporate Services Department is responsible for Procurement, Property, Capital Budgets, Energy, Insurance, Irish, some aspects of Corporate Governance and Head Office Facilities. A team of three engineers (Michael O'Kane, JJ Lenehan and Vincent McKiernan), three Corporate Services Officers (Siobhan Culleton, Brid Burns and Della Hunter (temporarily replaced by Sheila Gibbons) and three administrative staff (Vanessa Keane, Deirdre Hagney and Ann Birch) work with Tom to deliver these services.

Teagasc has a property portfolio including offices, laboratories, farms and some fine listed buildings. Contracts, Insurance, Leases, Sales and Purchases along with the related legal issues take up a considerable amount of time.

Engineers are always busy advising on, and implementing, maintenance and construction projects including the flagship Paddy O'Keefe Centre in Moorepark. Energy efficiency, with Teagasc commitments under the Public Sector Energy Efficiency programme, is a major focus. Procurement for a body with such a range of activities is also quite complex. Tom also managed the Advisory Invoicing Business Process Re-engineering project which has centralised client billing in the last year.



Financial Statements

For the Year ended 31 December 2012



Financial Statements
Year ended 31 December 2012

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Report of the Comptroller & Auditor General
for presentation to the Houses of the Oireachtas

Teagasc — The Agriculture and Food Development Authority

I have audited the financial statements of Teagasc for the year ended 31 December 2012 under the Agriculture (Research, Training and Advice) Act 1938. The financial statements, which have been prepared under the accounting policies set out therein, comprise the accounting policies, the income and expenditure account, the statement of total recognised gains and losses, the balance sheet, the cash flow statement and the related notes. The financial statements have been prepared in the form prescribed under Section 12 of the Act, and in accordance with generally accepted accounting practice in Ireland.

Responsibilities of the Authority

The Authority is responsible for the preparation of the financial statements, for ensuring that they give a true and fair view of the state of the Authority's affairs and of its income and expenditure, and for ensuring the regularity of transactions.

Responsibilities of the Comptroller and Auditor General

My responsibility is to audit the financial statements and to report on them in accordance with applicable law. My audit is conducted by reference to the special considerations which attach to State bodies in relation to their management and operation.

My audit is carried out in accordance with the International Standards on Auditing (UK and Ireland) and in compliance with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of Audit of the Financial Statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements, sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of

- whether the accounting policies are appropriate to the Authority's circumstances, and have been consistently applied and adequately disclosed
- the reasonableness of significant accounting estimates made in the preparation of the financial statements, and
- the overall presentation of the financial statements.

I also seek to obtain evidence about the regularity of financial transactions in the course of audit.

In addition, I read the Authority's annual report to identify if there are any material inconsistencies with the audited financial statements. If I become aware of any apparent material misstatements or inconsistencies, I consider the implications for my report.

Opinion on the Financial Statements

In my opinion, the financial statements, which have been properly prepared in accordance with generally accepted accounting practice in Ireland, give a true and fair view of the state of the Authority's affairs at 31 December 2012 and of its income and expenditure for 2012.

In my opinion, proper books of account have been kept by the Authority. The financial statements are in agreement with the books of account.

Report of the Comptroller & Auditor General

Year ended 31 December 2012

Matters on which I Report by Exception I report by exception if

- I have not received all the information and explanations I required for my audit, or
- my audit noted any material instance where money has not been applied for the purposes intended or where the transactions did not conform to the authorities governing them, or
- the information given in the Authority's annual report is not consistent with the related financial statements, or
- the Statement on Internal Financial Control does not reflect the Authority's compliance with the Code of Practice for the Governance of State Bodies, or
- I find there are other material matters relating to the manner in which public business has been conducted.

I have nothing to report in regard to those matters upon which reporting is by exception.

Seamus McCarthy
Comptroller and Auditor General
30th June 2013

Statement on Internal Financial Control

On behalf of the Authority of Teagasc I acknowledge our responsibility for ensuring that an effective system of internal financial control is maintained and operated.

Any system of internal financial control can provide only reasonable and not absolute assurance against material error, misstatement or loss. In considering the effectiveness of internal financial controls, the Authority and its Audit Committee have regard, among other things, to the requirements of the Code of Practice for the Governance of State Bodies.

The Authority has taken steps to ensure that an appropriate control environment is in place by:

- clearly defining management responsibilities, authority and accountability;
- establishing formal procedures for monitoring the activities and safeguarding the assets of Teagasc;
- developing a culture of accountability across all levels of the organisation.

The Authority has established procedures to identify business risks within Teagasc by:

- identifying the nature, extent and financial implication of risks facing Teagasc including the extent and categories which it regards as acceptable;
- assessing the likelihood of identified risks occurring;
- assessing Teagasc's ability to manage and mitigate the risks that do occur;
- assessing the costs of operating particular controls relative to the benefit obtained.

The system of internal financial control is based on a framework of regular management reporting, administration procedures including segregation of duties and a system of delegation and accountability including:

- an annual budgeting and financial reporting system which is reviewed and approved by the Authority;
- regular reviews by the Authority of overall strategy, business and financial plans and variances against operating and capital budgets.

Teagasc has an internal audit function, which operates in accordance with the requirements of the Code of Practice for the Governance of State Bodies and with the effectiveness criteria set out in the Teagasc Statement of Strategy published in 2012. The work of internal audit is informed by analysis of the risks to which Teagasc is exposed and annual internal audit plans are based on this analysis. The internal audit plans are approved by the Audit Committee. In 2012 the Authority retained an external expert to advise the Audit Committee.

The Authority's monitoring and review of the effectiveness of the system of internal financial control is informed by the work of the internal auditor, the Audit Committee which oversees the work of the internal auditor, the executive managers within Teagasc responsible for the development and maintenance of the financial control framework and comments made by the Comptroller and Auditor General in his management letter.

I confirm that the Authority conducted a review of the effectiveness of the systems of internal financial control in 2012.

Dr. Noel Cawley
Chairman
27th June 2013

Statement on Responsibilities of the Authority

Under Section 12(1) of the Agriculture (Research, Training and Advice) Act, 1988, the Authority is required to prepare financial statements in such form as may be approved by the Minister for Agriculture, Food and the Marine with the concurrence of the Minister for Finance. In preparing those financial statements, the Authority is required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that Teagasc will continue in operation;
- disclose and explain any material departures from applicable accounting standards.

The Authority is responsible for keeping proper books of account which disclose with reasonable accuracy at any time the financial position of Teagasc and which enable it to ensure that the financial statements comply with statutory requirements. The books of account are kept at the Authority's headquarters at Oak Park, Carlow. The Authority is also responsible for safeguarding the assets of Teagasc and for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Dr. Noel Cawley
Chairman
27th June 2013

Ms. Marie Christie
Member of the Authority
27th June 2013

Accounting Policies

Year ended 31 December 2012

The significant accounting policies adopted by Teagasc are as follows:

Basis of accounting

The Financial Statements have been prepared in accordance with the historical cost convention, subject to certain assets being included at a valuation (see below), and in a form approved by the Minister for Agriculture, Food and the Marine with the consent of the Minister for Finance under the Agriculture (Research, Training and Advice) Act, 1988. The Financial Statements have been prepared using the accruals method of accounting except as stated below and in accordance with generally accepted accounting practices. Financial Reporting Standards recommended by the recognised accountancy bodies are adopted as they become applicable.

Moorepark Technology Limited

Moorepark Technology Limited is a joint venture between Teagasc and various agriculture co-operatives. Teagasc has a 57% holding in the paid up share capital of the company. Separate audited financial statements have been prepared in respect of Moorepark Technology Limited. Teagasc has decided that it is not appropriate to consolidate the results of Moorepark technology Limited. The reason for the departure from the applicable accounting standard is that the corporate structure of Moorepark Technology Limited and its size are very different from Teagasc. The chosen treatment in the Financial Statements gives the reader more information about Moorepark Technology Limited and its relationship with Teagasc than would be the case if the Financial Reporting Standards were adopted.

State funding

State funding for research in the Food sector, for the Stimulus collaborative research programme and for the Agricultural Catchments Programme is accounted for on an accruals basis. All other State funding is accounted for on a cash receipts basis.

Research and other projects

Grants in respect of research and other projects are included as income in the year in which the related expenditure is incurred.

Tangible fixed assets and depreciation

Assets were taken over from An Chomhairle Oiliúna Talmhaíochta and An Foras Talúntais on 8th September 1988 at the closing values in the Balance Sheets of those bodies. Additions are stated at cost.

Land is not depreciated. The cost or valuation of other owned fixed assets is written off by equal instalments over their expected useful lives as follows:

Farm Buildings	20 years
Other Buildings	50 years
Plant and Vehicles	5 years
Computer Equipment	3 years
Laboratory and Office Equipment	10 years

Assets held under finance leases are depreciated over the lease term, where this is shorter than their expected useful lives.

A half year's depreciation is charged in the years of acquisition and disposal of assets.

Leases

Fixed assets acquired under finance leases are treated in accordance with the policy noted above under fixed assets. The capital element of related rental obligations is included under liabilities, while the interest element is charged to expenditure over the term of the primary lease period.

Rentals on operating leases are charged to expenditure as incurred.

Capital account

The balance on this account represents the unamortised value of funds used to purchase fixed assets.

Stocks

Stocks have been valued by Teagasc officials. Livestock and own farm produce are valued at estimated net realisable value. Net realisable value is determined on the basis that animals are sold on the open market. Gains and losses, which arise from these valuations, are reflected in full in operational income. All other stocks are valued at the lower of cost and net realisable value.

Accounting Policies

Year ended 31 December 2012

Debtors

Known bad debts are written off as they arise and specific provision is made where recovery is considered doubtful.

Pensions

Teagasc operates defined benefit pension schemes which are funded annually on a pay as you go basis from monies available to it, including monies provided by the Department of Agriculture, Food and the Marine, and from contributions deducted from staff salaries.

Pension Scheme liabilities are measured on an actuarial basis using the projected unit method.

Pension costs reflect pension benefits earned by employees in the period and are shown net of staff pension contributions which are retained by Teagasc. An amount corresponding to the pension charge is recognised as income to the extent that it is recoverable, and offset by grants received in the year to discharge pension payments.

Actuarial gains or losses arising from changes in actuarial assumptions and from experience surpluses and deficits are recognised in the Statement of Total Recognised Gains and Losses for the year and a corresponding adjustment is recognised in the amount recoverable from the Department of Agriculture, Food and the Marine.

Pension liabilities represent the present value of future pension payments earned by staff to date. Deferred pension funding represents the corresponding asset to be recovered in future periods from the Department of Agriculture, Food and the Marine.

Foreign currency

Transactions denominated in foreign currencies are translated into Euro and recorded at the rates of exchange ruling at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into Euro at the rates of exchange ruling at the balance sheet date.

Income and Expenditure Accounts

Year ended 31 December 2012

		31 December 2012 €'000	31 December 2011 €'000
	Notes		
Income			
State funding	2	134,046	139,404
EU funding	3	2,433	1,775
Operational income	4	29,295	28,543
Net deferred funding for pensions	9	14,822	15,315
Surplus on disposal of fixed assets	24	1,145	1,066
Other grants, donations and voluntary levies		2,500	2,488
		<u>184,241</u>	<u>188,591</u>
Expenditure	5	<u>184,573</u>	<u>189,545</u>
Excess of expenditure over income		(332)	(954)
Transfer from / (to) Capital Account	11	<u>158</u>	<u>(5)</u>
(Deficit) for the financial year		<u>(174)</u>	<u>(959)</u>
Balance at beginning of year		<u>10,407</u>	<u>11,366</u>
Balance at end of year	12	<u>10,233</u>	<u>10,407</u>

Statement of Total Recognised Gains & Losses

		31 December 2012 €'000	31 December 2011 €'000
	Notes		
(Deficit) for the financial year		(174)	(959)
Experience gains on pension scheme liabilities	9	6,571	1,838
Changes in assumptions underlying the present value of pension liabilities	9	<u>(329,741)</u>	<u>(43,171)</u>
Actuarial (loss) on pension liabilities		(323,170)	(41,333)
Adjustment to deferred pension funding		<u>323,170</u>	<u>41,333</u>
Total Recognised (Loss) for the year		<u>(174)</u>	<u>(959)</u>

The above amounts relate entirely to continuing operations. The Statement of Accounting Policies and notes 1 to 28 form part of these Financial Statements.

Dr. Noel Cawley
Chairman
27th June 2013

Professor Gerry Boyle
Director
27th June 2013

Balance Sheet

Year ended 31 December 2012

	Notes	31 December 2012 €'000	31 December 2011 €'000
Fixed assets			
Tangible assets	13	95,051	95,209
Financial assets	14	<u>2</u>	<u>2</u>
		<u>95,053</u>	<u>95,211</u>
Current assets			
Stocks	16	4,576	4,755
Debtors	17	13,705	10,842
Bank balances		5,208	20,910
Short term deposits		<u>21,636</u>	<u>784</u>
		45,125	37,291
Creditors - Amounts falling due within one year			
Creditors and accruals	18	16,046	14,418
Deferred income	19	<u>18,848</u>	<u>12,468</u>
		34,894	26,886
Net current assets		<u>10,231</u>	<u>10,405</u>
Total assets less current liabilities before pensions		105,284	105,616
Deferred pension funding	9	1,275,288	937,296
Pension liabilities	9	<u>(1,275,288)</u>	<u>(937,296)</u>
		0	0
Net assets		<u>105,284</u>	<u>105,616</u>
Represented by			
Capital account	11	95,051	95,209
Income and Expenditure account		<u>10,233</u>	<u>11,407</u>
		<u>105,284</u>	<u>106,616</u>

The Statement of Accounting Policies and notes 1 to 28 form part of these Financial Statements.

Dr. Noel Cawley
Chairman
27 June 2013

Professor Gerry Boyle
Director
27 June 2013

Cashflow Statement

Year ended 31 December 2012

	Notes	31 December 2012 €'000	31 December 2011 €'000
Reconciliation of operating surplus to net cash inflow from operating activities			
Operating (deficit)		(174)	(959)
Depreciation	13	6,967	7,054
Transfer (from)/ to capital account	11	(158)	5
Interest received		(667)	(565)
Profit on sale of fixed assets		(1,145)	(1,066)
Decrease/(Increase) in stocks		179	(93)
(Increase) in debtors		(2,863)	(245)
Increase/(Decrease) in creditors and long term liabilities		1,628	(654)
Increase in deferred income		<u>6,380</u>	<u>2,542</u>
Net cash inflow from operating activities		<u>10,147</u>	<u>6,019</u>

Cash Flow Statement

Net cash inflow from operating activities		<u>10,147</u>	<u>6,019</u>
Return on investment and servicing of finance			
Interest received		<u>667</u>	<u>565</u>
Net cash inflow from returns on investment and servicing of finance		<u>667</u>	<u>565</u>
Investing activities			
Payments to acquire tangible fixed asset	13	(7,143)	(7,600)
Receipts from disposals of tangible fixed assets		<u>1,479</u>	<u>1,607</u>
Net cash outflow from investing activities		<u>(5,664)</u>	<u>(5,993)</u>
Increase in cash	23	<u>5,150</u>	<u>591</u>
Reconciliation of net cashflow to movement in net funds			
Increase in cash	23	5,150	591
Net funds at 1 January		<u>21,694</u>	<u>21,103</u>
Net funds at 31 December		<u>26,844</u>	<u>21,694</u>

The Statement of Accounting Policies and notes 1 to 28 form part of these Financial Statements.

Dr. Noel Cawley
Chairman
27 June 2013

Professor Gerry Boyle
Director
27 June 2013

Notes to the Financial Statements

Year ended 31 December 2012

1 Teagasc (the Agriculture and Food Development Authority)

Teagasc (the Agriculture and Food Development Authority) was established under the Agriculture (Research, Training and Advice) Act, 1988. Under Section 21 of the Act, the assets and liabilities of An Chomhairle Oiliúna Talmhaíochta and An Foras Talúntais were transferred to Teagasc upon its establishment.

Section 12 of the Act requires that Accounts shall be kept in such form as may be approved by the Minister for Agriculture, Food and the Marine with the concurrence of the Minister for Public Expenditure and Reform. This approval was given on 14 August 1998.

2 State funding	2012 €'000	2011 €'000
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The amount shown under this heading comprises:

Vote 31: Agriculture, Food and the Marine		
Grant-in-aid for general expenses	78,560	82,602
Grant-in-aid for superannuation purposes	38,500	37,554
Grant for human resource purposes	11,400	12,000
Food research and agriculture research	3,839	4,654
Stimulus collaborative research programme	1,094	1,964
Grant for forestry publicity and awareness and training	610	630
Grant for forestry education	43	0
	<u>134,046</u>	<u>139,404</u>

3 EU funding	2012 €'000	2011 €'000
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Farm Survey Income	159	157
INTERREG	303	225
Framework Programme VI	300	275
Framework Programme VII	1,671	1,118
	<u>2,433</u>	<u>1,775</u>

Framework Programmes have been the main financial tools through which the European Union supports research and development activities covering almost all scientific disciplines. Framework Programme VI ran up to the end of 2006. Framework Programme VII started on 1 January 2007 and runs to the end of 2013.

Teagasc carries out EU funded research through the Framework Programmes. Grants in respect of such research are taken into account as income when the corresponding expenditure has been incurred.

Notes to the Financial Statements...continued

Year ended 31 December 2012

4 Operational income

	Operations €'000	Knowledge Transfer €'000	Research €'000	2012 €'000	2011 €'000
Advisory service fees	0	10,470	372	10,842	10,665
Other fees	21	3,025	8,836	11,882	9,905
Livestock trading (Note 7)	0	745	2,142	2,887	3,160
Other farming operations	0	744	1,619	2,363	2,908
Canteen receipts	0	44	82	126	223
Publications and miscellaneous	758	287	150	1,195	1,682
	<u>779</u>	<u>15,315</u>	<u>13,201</u>	<u>29,295</u>	<u>28,543</u>

5 Expenditure

	Operations €'000	Knowledge Transfer €'000	Research €'000	2012 €'000	2011 €'000
Pay (Note 8)	4,541	31,686	35,080	71,307	77,652
Pensions (Note 9)	59,138	0	0	59,138	58,013
Travelling and subsistence *	287	1,742	1,880	3,909	3,944
Staff Training	507	7	14	528	507
General operating expenses (Note 6)	5,853	9,598	19,600	35,051	34,013
Financial charges	41	(25)	0	16	119
Depreciation (Note 14)	168	1,451	5,348	6,967	7,054
Grants to private colleges (Note 16)	0	3,019	0	3,019	3,567
Other grants	63	784	3,791	4,638	4,676
	<u>70,598</u>	<u>48,262</u>	<u>65,713</u>	<u>184,573</u>	<u>189,545</u>

Total pay of €71,307m includes	2012 €'000	2011 '000
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Overtime	1,198	1,286
Allowances	2,443	2,615
Redundancy	124	2,026

In 2012, 170 staff received overtime payments. The highest individual amount totalled €31,391.

* Travelling and subsistence	Domestic €'000	Foreign €'000	2012 €'000	2011 €'000
Subsistence	1,095	278	1,373	1,420
Motor travel	2,247	-	2,247	2,290
Airline and ferries	-	289	289	234
	<u>3,342</u>	<u>567</u>	<u>3,909</u>	<u>3,944</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

6 Analysis of general operating expenses

	Operations	Knowledge Transfer	Research	2012	2011
	€'000	€'000	€'000	€'000	€'000
Farming supplies/services	1	1,111	3,967	5,079	3,705
Maintenance/repairs	427	2,527	3,562	6,516	10,969
Rents/rates/insurances	64	713	1,497	2,274	2,501
Postage/telephones	730	961	358	2,049	1,904
Power/fuel/petrol	173	781	1,702	2,656	2,489
Laboratory supplies	0	2	4,232	4,234	2,662
Printing/stationery/publicity	1,215	819	671	2,705	2,319
Seminar/classroom/library supplies	106	578	937	1,621	1,106
Services of external agencies	0	745	645	1,390	1,093
Student and staff canteen supplies	49	421	355	825	637
Audit Fee	47	0	0	47	47
ICT supplies/services	2,377	166	325	2,868	2,212
Legal/professional fees	658	668	800	2,126	1,696
Miscellaneous programme costs	1	92	513	606	641
Special events and miscellaneous	5	14	36	55	32
	<u>5,853</u>	<u>9,598</u>	<u>19,600</u>	<u>35,051</u>	<u>34,013</u>

7 Livestock trading surplus

	2012	2011
	€'000	€'000
Sales	3,622	3,149
Grants and subsidies	611	621
Total livestock trading revenue	<u>4,233</u>	<u>3,770</u>
Opening stock	3,960	3,910
Purchases	<u>1,306</u>	<u>660</u>
	5,266	4,570
Less: Closing stock	<u>(3,920)</u>	<u>(3,960)</u>
Total cost of livestock sales	<u>1,346</u>	<u>610</u>
Surplus to Income and Expenditure account (Note 4)	<u>2,887</u>	<u>3,160</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

8 Staff

	2012	2011
The average number of staff employed during the year was as follows:		
Professional	631	660
Technical	151	164
Administrative/clerical	211	233
Farm/domestic	167	203
	<u>1,160</u>	<u>1,260</u>

The Director's remuneration was as follows:

	2012	2011
Basic pay	153	153
Benefit in kind (Car)	10	10
	<u>163</u>	<u>163</u>

The Director's pension entitlements do not extend beyond the model public sector defined benefit superannuation scheme.

Pension related levy of €4,457,617 has been deducted from salaries and paid to the Department of Agriculture, Food and the Marine.

9 Superannuation

Section 9 of the Agriculture (Research, Training and Advice) Act, 1988 provides for the establishment of schemes for the granting of superannuation benefits in respect of staff appointed by Teagasc and staff transferred to Teagasc from An Chomhairle Oiliúna Talmhaíochta and from An Foras Talúntais.

Pending the approval of draft superannuation schemes by the Minister for Agriculture, Food and the Marine, the Minister for Finance and the Oireachtas, Teagasc operates superannuation schemes on an administrative basis.

Teagasc also administers two superannuation schemes (the Agricultural Colleges Staff Superannuation Scheme 1985 and the Agricultural Colleges Spouses' and Children's Contributory Pension Scheme 1985) in respect of certain staff employed by privately-owned Colleges of Agriculture and Horticulture, the cost of whose salaries is borne by the Exchequer through the agency of Teagasc.

The above schemes are defined benefit superannuation schemes. No separate fund is maintained, and no assets are held, to finance the payment of pensions and gratuities. The actuarial estimate of future liabilities accruing in regard to future benefits is shown on the Balance Sheet.

The average number of monthly pensions paid during the year was 1,665 (2011 – 1,584).

Notes to the Financial Statements...continued

Year ended 31 December 2012

Superannuation Costs

(i) Analysis of total pension costs charged to income and expenditure account

	2012 €'000	2011 €'000
Current service cost	16,503	15,492
Interest on scheme liabilities	46,513	46,483
Staff contributions	(3,878)	(3,962)
	<u>59,138</u>	<u>58,013</u>

(ii) Movement in net pension liability during the financial year

	2012 €'000	2011 €'000
Net pension liability at 1 January	937,296	880,648
Current service cost	16,503	15,492
Benefits paid	(48,194)	(46,660)
Interest on scheme liabilities	46,513	46,483
Actuarial loss / (gain)	323,170	41,333
	<u>1,275,288</u>	<u>937,296</u>

The main reason for the increase in the liabilities was the reduction in the discount rate used to measure the liabilities.
The underlying discount rate reduced from 5.0% at 31 December 2011 to 3.5% at 31 December 2012.

(iii) Deferred funding asset for pensions

Teagasc recognises as an asset an amount corresponding to the unfunded deferred liability for pensions on the basis of the set of assumptions described below and a number of past events. These events include the statutory basis for the establishment of the superannuation schemes, and the policy and practice currently in place in relation to funding public service pensions including contributions by employees and the annual estimates process. While there is no formal agreement regarding these specific amounts with the Department of Agriculture, Food and the Marine, Teagasc has no evidence that this funding policy will not continue to meet such sums in accordance with current practice.

Net deferred funding for pensions in the year	2012 €'000	2011 €'000
Funding recoverable in respect of current years pensions	63,016	61,975
Resources applied to pay pensions	(48,194)	(46,660)
	<u>14,822</u>	<u>15,315</u>

The deferred funding asset for pensions as at 31 December 2012 was €1,275 million (2011- €937million).

Notes to the Financial Statements...continued

Year ended 31 December 2012

(iv) History of defined benefit obligations

	2012 €'000	2011 €'000	2010 €'000
Experience gain / (loss)	6,571	1,838	71,517
Percentage of present value of scheme liabilities	5%	0.2%	8.1%
Changes in assumptions	(329,741)	(43,171)	(68,898)
Percentage of present value of scheme liabilities	25.3%	4.6%	7.8%
Actuarial (loss)/ gain recognised in the STRGL	(323,170)	(41,333)	2,619

The cumulative actuarial loss recognised in the Statement of Total Recognised Gains and Losses amounts to €211.376m.

(v) General description of the scheme

The pension scheme is a defined benefit final salary pension arrangement with benefits and contributions defined by reference to current "model" public sector scheme regulations. The scheme provides a pension (eightieths per year of service), a gratuity lump sum (three eightieths per year of service) and spouse's and children's pensions. Normal retirement age is a members 65th birthday, and pre 2004 members have an entitlement to retire without actuarial reduction from age 60. Pensions in payment (and deferment) normally increase in line with general public sector salary inflation. The valuation used for FRS17 disclosures has been based on an actuarial valuation by a qualified independent actuary on 24 January 2013 in order to assess the scheme liabilities at 31 December 2012.

The principal actuarial assumptions used to calculate liabilities under FRS17 are as follows:

	2012 % per annum	2011 % per annum
Inflation rate increase	2.00	2.00
Salary rate increase	3.50	3.50
Pension rate increase	3.50	3.50
Scheme liabilities discount rate	3.50	5.00

The mortality basis adopted allows for improvements in life expectancy over time, so that life expectancy at retirement will depend on the year in which a member attains retirement age (age 65). The table below shows the life expectancy for members attaining age 65 in 2012 and 2036.

Year of attaining 65	2012	2036
Life expectancy - males	88.0	90.1
Life expectancy - females	90.3	92.0

On the basis of these and other assumptions and applying the projected unit method prescribed in FRS17, the present value of pension scheme liabilities is as follows:

	2012 €'000	2011 €'000
Accumulated liabilities in respect of active scheme members	377,483	247,091
Liabilities in respect of existing pensioners and deferred pensions	897,805	690,205
	<u>1,275,288</u>	<u>937,296</u>
Total accrued pension liability		

Notes to the Financial Statements...continued

Year ended 31 December 2012

10 Authority members' fees and emoluments	2012 €'000	2011 €'000
Heraghty, Mr. Martin	0	0
Cawley, Dr. Noel, Chairman	21	21
Brett, Mr. James	4	12
Christie, Ms. Marie	14	10
Fitzgerald, Mr. Joe	0	9
Collins, Mr. Tom	12	12
Downey, Mr. Eddie	12	12
Fottrell, Dr. Patrick	9	12
Cooke, Mr. Tommy	12	3
Gibbons, Mr. Pdraig	12	12
O'Mahony, Mr. Frank	12	12
Sweeney, Ms. Margaret	6	12
	<u>114</u>	<u>127</u>

These amounts are included in the total pay expenditure in Note 5
Ms. Marie Christie and Mr. Martin Heraghty were the only
authority members employed separately by public bodies.

10 (B) Total expenses paid to Authority members	38	36
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11 Capital account	2012 €'000	2011 €'000
Balance at 1 January	95,209	95,204
Transfers from income and expenditure account		
Amount capitalised in respect of purchased assets	7,143	7,600
Net amount released on disposals	(334)	(541)
Property loan repayments	0	0
	<u>6,809</u>	<u>7,059</u>
Less: Amortised in line with asset depreciation	(6,967)	(7,054)
	<u>(158)</u>	<u>5</u>
Balance at 31 December	<u>95,051</u>	<u>95,209</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

12 Income and Expenditure account

The Authority's accumulated surplus includes €9.9m in respect of the sale of assets in the years 2007 and 2012. The Authority has received sanction from the Minister for Agriculture Food and the Marine and the Minister for Public Expenditure and Reform to retain these funds for capital investment purposes.

Below is a summary of the sales and capital expenditure figures:

	€'000
Accumulated sales proceeds retained between 2007 and 2012	36,870
Related accumulated capital expenditure between 2007 and 2012	(26,955)
Included in accumulated surplus on Income and Expenditure Account	<u>9,915</u>

Teagasc has secured sanction to invest in the following projects
Invested at which are scheduled, underway or completed:

	Invested 31 Dec 2012 €'000	Budget to Complete €'000
Animal Bioscience Centre, Grange, Co. Meath	3,994	606
Sheep Research Facilities, Athenry	971	150
Student Facilities, Botanic Gardens	287	2,213
Demonstration / Technology farm	36	134
Development of facilities at Ashtown	166	4,584
Research and Innovation Facility, Moorepark	0	3,700
Pig Biotest Facility, Moorepark	0	2,500
Kildalton College	4,090	0
Oak Park House	4,000	0
Neutraceutical Laboratories Ashtown	3,500	0
Functional Foods Laboratories Moorepark	4,974	0
Mellows Building Refurbishment	1,646	0
Oak Park Biofuel Laboratories	1,003	0
Environment Building Johnstown Castle	1,000	0
Other capital projects	1,288	0
	<u>26,955</u>	<u>13,887</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

13 Tangible fixed assets	Land	Buildings	Plant & equipment	Total
	€'000	€'000	€'000	€'000
Cost or valuation				
At beginning of year	5,810	111,945	68,229	185,984
Additions	0	4,163	2,980	7,143
Disposals	0	(654)	(427)	(1,081)
At end of year	5,810	115,454	70,782	192,046
Accumulated depreciation				
At beginning of year	0	40,154	50,621	90,775
Charge for year	0	2,812	4,155	6,967
Disposals	0	(367)	(380)	(747)
At end of year	0	42,599	54,396	96,995
Net book amounts				
At beginning of year	5,810	71,791	17,608	95,209
At end of year	5,810	72,855	16,386	95,051

Included in the opening balances is land totalling 522.8 ha (1,291.3 acres) transferred by the Department of Agriculture, Food and the Marine at nominal values, and certain other assets which were revalued at 31 December 1975 or 1 July 1980. Teagasc has the use of 34.15 ha (84 acres) of land owned by the Department of Agriculture, Food and the Marine, while the Department has the use of 27.1 ha (67 acres) owned by Teagasc. There is no charge to either party arising from these arrangements.

Certain fixed assets entrusted to Teagasc are protected by statute, and may not be sold.

Notes to the Financial Statements...continued

Year ended 31 December 2012

14 Financial assets

Teagasc has three small investments in agricultural co-operatives costing €1,243 in total (2011 - €1,243).

Moorepark Technology Limited

Teagasc has invested €650 in Moorepark Technology Limited and has a 57% holding in the paid up share capital of the Company (5,100 shares at €0.127). The Company, which was incorporated on 18 January 1991, is a joint venture between Teagasc and various agricultural co-operatives.

Separate audited financial statements have been prepared in respect of the Company and its results for the year ended 31 December 2012 were as follows:

	2012 €'000	2011 €'000
Turnover	1,508	1,351
Operating profit before depreciation, interest and tax	170	301
Depreciation (net of grants amortised)	(216)	(213)
Interest receipts	8	5
Tax	(2)	(1)
Profit after taxation	(40)	92
Accumulated profits to 31 December	165	205

The Company's Memorandum of Association provides that shareholders are entitled to avail of the Company's services at preferential rates.

Trading transactions between Teagasc and Moorepark Technology Limited (which consists of consultancy, analyses and use of technical and other facilities) were as follows:

	2012 €'000	2011 €'000
Moorepark Technology Limited sales to Teagasc (included in turnover)	405	403
Other recoupments from Teagasc (deducted from cost of sales)	142	118
Total	547	521
Amounts owed to Moorepark Technology Limited at 31 December	45	65
Teagasc sales to Moorepark Technology Limited	71	67
Amounts owed to Teagasc at 31 December	0	32

Notes to the Financial Statements...continued

Year ended 31 December 2012

Under the terms of the Moorepark Technology Limited Promoters' Agreement, Teagasc has undertaken to provide from its own resources specified staff requirements in Moorepark Technology Limited, as well as underwriting the Company's utility, stores, accounts and effluent overheads. These costs were as follows:

	2012 €'000	2011 €'000
Staff	197	196
Other	30	27

These totals are included in Teagasc expenditure under Research (Notes 5 and 6).

Moorepark Technology Limited utilises assets owned by Teagasc as follows:

	2012 €'000	2011 €'000
Original Costs	1,196	1,196
Net Book Value at 31 December	0	6

These amounts are included under Plant and Equipment (see Note 14 above).

In accordance with the Promoters' Agreement, Teagasc has also leased to Moorepark Technology Limited at a nominal rent of €127 per annum its existing processing hall at Moorepark Dairy Products Centre together with an adjoining site on which the Company has constructed additional facilities.

It was not considered appropriate to consolidate the results of the Company.

16 Private Colleges

Teagasc provides support to three private agricultural colleges as follows:

	2012 €'000	2011 €'000
Grants to private colleges	3,019	3,567
Salary costs of staff seconded to private colleges (included in the total pay expenditure in Note 5 above)	558	369
	<u>3,577</u>	<u>3,936</u>

16 Stocks

	2012 €'000	2011 €'000
Livestock	3,916	3,960
Farm produce, fertilisers and feeding stocks	400	524
General supplies	260	271
	<u>4,576</u>	<u>4,755</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

17 Debtors and prepayments

	2012 €'000	2011 €'000
Trade debtors	6,241	5,066
Other debtors, prepayments and accrued income	7,464	5,776
	<u>13,705</u>	<u>10,842</u>

All amounts included above fall due within one year.

18 Creditors - Amounts falling due within one year

	2012 €'000	2011 €'000
Creditors Accruals*	9,247	7,683
Trade creditors	887	1,738
Income tax deducted under PAYE	1,342	1,463
Pay related social insurance	1,061	1,109
Value added tax	458	280
Withholding tax	114	242
Research advances	1,894	721
Other payroll deductions	957	937
Refundable deposits	86	245
	<u>16,046</u>	<u>14,418</u>
Creditors for taxation and social welfare included above	<u>2,975</u>	<u>3,094</u>

*Included in the creditor accruals of €9.24m are: Equipment and capital items €2.34m, repairs and maintenance €2.20m, wages and salaries and other employee costs €1.00m, other accrual €0.86m, student grants €0.73m, general operating costs including utilities €0.72m, professional fees including legal and analytical services €0.51m, farm running costs €0.37m, public relations and advertising €0.32m and ICT costs €0.22m.

19 Deferred income

Teagasc carries out public funded research in accordance with contracts with other State Institutions, principally the Department of Agriculture, Food and the Marine. Grants in respect of such research are taken into account as income when the corresponding expenditure has been incurred under each contract.

At 31 December the source and amount of deferred income in respect of research and other projects was as follows:

	2012 €'000	2011 €'000
Department of Agriculture, Food and the Marine – advance for FIRM projects	3,872	2,782
Department of Agriculture, Food and the Marine – advance for Stimulus projects	4,575	2,254
European Science Foundation – Food Safety Promotion	190	166
Other research related deferrals	9,097	6,152
Amounts received in advance for work associated with the completion of sale of land at Athenry	1,114	1,114
	<u>18,848</u>	<u>12,468</u>

Notes to the Financial Statements...continued

Year ended 31 December 2012

20 Finance leases

At 31 December 2012 Teagasc had no obligations under finance leases (2011 - Nil).

There were no finance charges incurred during the year under finance leases (2011- Nil).

21 Capital commitments

Teagasc had capital commitments outstanding at 31 December 2012 amounting to €2.8m which relate to construction of buildings and facilities at the Animal Bioscience Centre, Grange, Co. Meath €0.6m and at Botanic Gardens, Dublin 9 €2.2m (2011 - Nil).

22 Operating leases

At 31 December 2012 Teagasc had annual commitments under non-cancellable operating leases as follows:

	Land and buildings €'000	Plant and machinery €'000	Total €'000
Leases which expire:			
Within one year	27	48	75
Between two and five years	205	26	231
After five years	0	0	0
	<u>232</u>	<u>74</u>	<u>306</u>

23 Analysis of changes in net funds during the year

	1 January 2012 €'000	Cashflows €'000	31 December 2012 €'000
Cash at bank and on hand	20,910	(15,702)	5,208
Bank overdraft	0	0	0
Short-term deposits	784	20,852	21,636
	<u>21,694</u>	<u>5,150</u>	<u>26,844</u>

24 Disposal of fixed assets

	Proceeds Costs €'000	Proceeds Costs €'000
Proceeds from sale of property		
Property sales during year	1,468	
Cost of sales	<u>(31)</u>	1,437
Proceeds from sale of other assets		42
Net book value of fixed assets disposed		<u>1,479</u>
Property assets	(287)	
Other assets	<u>(47)</u>	<u>(334)</u>
		<u>1,145</u>

There was no transfer to the Exchequer of asset sales proceeds in 2012.

Notes to the Financial Statements...continued

Year ended 31 December 2012

25 Teagasc premises

Teagasc has a total of 56 offices/ centres throughout the country, of which 51 are owned by Teagasc and the remaining 5 are under rental agreements with an annual total cost of €0.133m. Four of the rental agreements are short term and expire within five years and the remaining agreement expires in 2021.

26 Authority members – disclosure of transactions

The Authority has adopted procedures in accordance with the guidelines issued by the Department of Finance in relation to the disclosure of interest by Authority members and the Authority has adhered to these procedures. There were no transactions in the year in relation to the Authority's activities in which board members had an interest.

27 Contingent liabilities

The Authority has been notified of a number of claims from (a) clients resulting from the provision of services and (b) in respect of certain industrial relations matters.

The Authority has made provision in the financial statements reflecting its best estimate of the liability arising. The Authority believes that disclosure of information on its provisions would prejudice the outcome of litigation arising from the claims.

28 Approval of the financial statements

The Authority approved the financial statements on 27 June 2013.

Contact Details:

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