

2013
2014

ANNUAL
REPORT
& STATEMENT
OF ACCOUNTS



Agri-Food and Biosciences Institute
Annual Report and Accounts
For the year ended 31 March 2014

Laid before the Northern Ireland Assembly
Under the Agriculture (Northern Ireland) Order 2004
By the Department of Agriculture and Rural Development
On the 27th November 2014.



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Agri-Food and Biosciences Institute

AFBI Headquarters,

18a Newforge Lane,

Malone Upper,

Belfast BT9 5PX

Northern Ireland

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FOREWORD FROM THE CHAIR

It is with great pleasure that I introduce the Annual Report and Statement of Accounts for the Agri-Food and Biosciences Institute (AFBI) for the year 2013/14.

I was delighted to have been appointed as Chair of the Board of AFBI from 14 April 2014 by Michelle O'Neill, Minister of Agriculture and Rural Development. Since my appointment, I have concentrated on getting to know the Institute by visiting all AFBI sites and its marine research vessel, the RV *Corystes*, and I have witnessed at first hand the wide range of work carried out by the staff of the Institute. I have been impressed by the high standard of the scientific work and its potential to drive greater growth in the local agri-food economy.

Since my appointment, I have also met with a wide variety of stakeholders in the local agri-food sector to discuss the many ways in which AFBI can support and protect the industry. I believe that AFBI must play a major role in implementation of the Agri-Food Strategy Board's *Going for Growth* strategic action plan, as sustainable expansion of the industry can best be achieved through increased research and innovation. To this end, I wish to work with a broad range of stakeholder organisations to ensure that the value of the Institute's skills base and facilities is maximised in support of the industry as it implements the *Going for Growth* targets.

We are all aware of the growing global population. There is also a significant growth in the affluence of populations in many developing countries. It will be those food producing regions who are able to differentiate their products based on innovation and quality that will be successful in the future and gain a meaningful share of this new opportunity. We need to be one of those regions! I wish to ensure that AFBI, through excellent research and innovation, supports the industry as far as possible in increasing efficiency, competitiveness and profitability while protecting our rich environment.



AFBI acknowledges the current and anticipated future pressures on Northern Ireland public finances. However, it also recognises the major opportunities that exist to increase the drawdown of competitive research funding from a variety of sources. This not only adds to the research revenues but also allows our scientists to partner on a global scale, sharing in the outcomes of world class research and innovation.

The Board and I will support the Executive as it seeks to maximise the value of such research funding to the local industry, and in adding significant value to the Department of Agriculture and Rural Development's core funding of AFBI.

In developing AFBI's strategy for the next 5 years, I wish to match AFBI's global reputation of scientific excellence with Northern Ireland's global reputation for quality food production. In this way we can take advantage of the rapidly expanding international market opportunities for quality food for the benefit of our economy and community.

A handwritten signature in black ink, appearing to read 'Colm McKenna', with a long horizontal flourish extending to the right.

COLM McKENNA
Chair



Visiting the Plant Testing Station at AFBI Crossnacreevy



Viewing the potato breeding programme at AFBI Loughgall



Going for Growth strategic action plan



Chemical Surveillance Branch at AFBI Stormont



AFBI's Science Strategy 2014-2020

CHIEF EXECUTIVE'S REVIEW



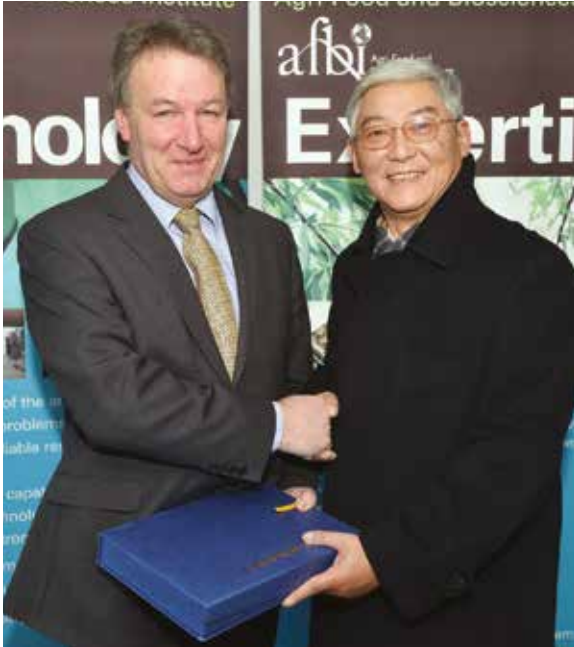
Quality science is at the core of AFBI's mission. With strong support from the Board's Science Strategy Subcommittee, we developed AFBI's first Science Strategy during the year under review. This document sets out AFBI's ambition to have in place leading edge skills and technologies to underpin the delivery of quality science to our diverse range of local, national and international customers. The strategy covers the period up to 2020 but will be revised frequently in response to changing customer requirements.

Peer-reviewed publications are an important measure of the quality of scientific research and I am pleased to report that AFBI maintained a high output of papers in internationally respected scientific journals during the year; a small selection is included elsewhere in this report. Not only is the publication of high quality peer-reviewed papers critical to the Institute's participation in international research consortia and future funding opportunities, but it is a valuable form of quality assurance of AFBI's scientific work. Together with ISO 17025 accreditation for a wide range of analytical testing and ISO 9001 certification of AFBI's research delivery, such validation provides assurance to our many customers on the high standards of scientific work in AFBI.

AFBI has continued to diversify its customer base which has allowed the Institute to progressively reduce its dependence on core DARD funding. A continuation of this strategy will become even more important in the coming years as pressures increase on public finances in Northern Ireland. In 2013/14, the Institute's income outside grant-in-aid amounted to £18.542m (2012/13 £18.847m). This income has allowed AFBI to further develop its skills and technology base for the benefit of the local agri-food industry, and I commend all AFBI staff on this magnificent achievement.

AFBI's scientific work continues to have a major local and international impact. For example, the Institute is involved, as part of the Northern Ireland team, in negotiation of the third Nitrates Action Programme which is due to commence in January 2015. AFBI has provided economics input to DARD as it develops the next Rural Development Programme, and to the Agri-Food Strategy Board as it oversees the implementation of its *Going for Growth* strategic action plan. We have also produced a report on the potential impact of greenhouse gas mitigation policy on the agri-food industry in Northern Ireland, and hosted a very successful conference on "Dairy Sector Growth Through Innovation" which attracted a wide range of stakeholders. Our marine fisheries staff continued to provide important scientific data on fish stocks in the Irish Sea to support the Minister of Agriculture and Rural Development in the annual EU negotiations on total allowable catches. AFBI scientists accepted many invitations to speak at events ranging from local farmer meetings to top-level international scientific conferences throughout the world. AFBI's international networking has ensured that it can continue to deliver world-class scientific support to the local agri-food industry as it continues to expand in a sustainable manner.

AFBI contributed to the achievement of DARD's strategic goals by successfully delivering the department's assigned programme of statutory and diagnostic/surveillance testing, research and development (R&D), and emergency response and specialist advice provision. The conduct of DARD-funded R&D continued to be essential to the maintenance of the Institute's emergency response capability which was tested by way of several contingency exercises.



Prof Seamus Kennedy of AFBI and Prof Wang Liang of the Economic Committee of Chinese People's Political Consultation Conferences (CPPCC) visiting AFBI Hillsborough in December.



Chairs and speakers at the AFBI Dairy conference: "Dairy Sector Growth Through Innovation" in March



Minister Michelle O'Neill and Dr James Strong at the conclusion of the EU-funded INIS Hydro project



AFBI and Teagasc delegates at the scientific forum at the United States Department of Agriculture, Beltsville, Maryland.



Estonian Ambassador to the UK, Aino Lepik von Wirén and UK ambassador to Estonia, Chris Holtby, visit AFBI Headquarters in March 2014

A restructuring of the organisation to form two scientific and one corporate division was successfully implemented during the year. Together with the formation of a single Food Science Branch and incorporation of the renewable energy work at AFBI Hillsborough into Crops, Grassland and Ecology Branch, the restructuring has enhanced the continuum of scientific expertise within our Sustainable Agri-Food Sciences Division.

In September 2013 the Northern Ireland Audit Office (NIAO) issued a Value for Money report on AFBI which covered the period up to March 2012. A subsequent Public Accounts Committee (PAC) hearing was held on 27 November 2013 and report published on 19 March 2014. AFBI and DARD have agreed a timetable for implementation of the NIAO and PAC recommendations and a considerable amount of work has or is taking place, particularly in relation to unit costs and corporate overheads.

As acknowledged by the NIAO and PAC, much of AFBI's built estate, currently leased from DARD, is in need of modernisation. As part of DARD's overall estate strategy, a considerable amount of work was undertaken during the year in relation to planning for the replacement of the Main Building at AFBI's Veterinary Sciences Division site at Stormont, and relocation of the headquarters site at Newforge Lane. Business cases for these projects, together with the redevelopment of AFBI Loughgall as a Centre of Excellence in Plant Science, and replacement of beef and dairy cattle research facilities at AFBI Hillsborough, will be completed during the current year and bids for capital funding made thereafter.

While AFBI acknowledges the pressures on Northern Ireland public finances, it also recognises the major opportunities that exist to increase the drawdown of competitive research funding from a range of sources, including the EU's Horizon 2020 programme and the UK Strategy for Agricultural Strategies. I was delighted that Michelle O'Neill, DARD Minister, accompanied a group of AFBI scientists on a visit to the EU Commission in September 2013. The event, kindly facilitated by Martina Anderson MEP, culminated in a meeting with Máire Geoghegan-Quinn, Commissioner for Research, Innovation and Science, and was extremely valuable in raising AFBI's profile in Brussels and learning about the EU's Horizon 2020 Framework for Research and Innovation.

The appointment to AFBI in September 2013 of a DARD-funded Northern Ireland Contact Person for agri-food will greatly assist AFBI, and other local research providers and industrial organisations to maximise the drawdown of EU research, knowledge transfer and innovation funding which has lagged behind that of many other regions.

In support of its international business development, AFBI's representative, based in the Northern Ireland Bureau in Washington DC, has developed valuable relationships with a wide range of government, university and private sector organisations in North America. These links resulted in a scientific workshop, kindly hosted by the United States Department of Agriculture's Agricultural Research Service at its Beltsville headquarters in November 2013. A number of potential collaborative research projects were identified, and AFBI is organising a second event to be held in Belfast in 2014.

I was delighted to have accompanied Minister O'Neill when she made an invited address to the 4th Sino-European Agricultural Seminar which was held in the Ningxia Autonomous Region of China in September 2013. In presenting evidence of the high standard of food safety in Northern Ireland, I had the opportunity of utilising AFBI's developing scientific links with China in support of the Minister's strategy to increase food exports.

Finally, on behalf of the Executive Management Team, I would like to thank all AFBI staff members for their continued commitment and dedication to the Institute. While I acknowledge the major budget pressures that lie ahead, AFBI must continue to support the agri-food industry in achieving the ambitious targets set out in the Going for Growth report, through the continued provision of high quality applied research and innovation.



Professor Seamus Kennedy
MVB PhD MRCVS FRCPATH

Chief Executive and Accounting Officer

Date: 6 November 2014



STRATEGIC REPORT



Scope

The Agri-Food & Biosciences Institute presents its accounts for the financial year ended 31 March 2014. The Institute was formed on 1 April 2006 with the amalgamation of the Department of Agriculture and Rural Development (DARD) Science Service and the Agricultural Research Institute of Northern Ireland, which was a separate Non-Departmental Public Body (NDPB) funded by DARD. AFBI is established under the Agriculture (Northern Ireland) Order, 2004, as a DARD NDPB.

Accounts Direction

The accounts have been prepared under the Accounts Direction given by the Department of Agriculture and Rural Development, with the approval of the Department of Finance & Personnel, in accordance with the Agriculture (Northern Ireland) Order 2004.

Vision

“Scientific excellence in Northern Ireland....
....Serving the World”

Our Mission

Supporting Government policy and industry innovation across the agri-food and rural sector through the provision of high quality scientific services, advice and expertise.

Corporate Goals

Successfully deliver the assigned work programme to DARD and in doing so support DARD in achieving its goals

- Provision of scientific support to DARD and other Government departments and agencies in managing the impact of animal and plant health, food and environmental emergencies
- Actively manage and grow AFBI's commercial portfolio and in doing so build our reputation as a customer-first organisation
- Sustain and develop AFBI's knowledge base and position AFBI as a leader in the delivery of innovation and scientific support to the agri-food sector
- Invest in our people and ensure that the best systems and processes are in place to manage our organisation efficiently and effectively
- Ensure the long-term financial sustainability of AFBI

AFBI has an important role in assisting DARD to achieve its goals which are:

Goal 1:

To help the agri-food industry prepare for future market opportunities and economic challenges.

Goal 2:

To improve the lives of rural dwellers.

Goal 3:

To enhance animal, fish and plant health and welfare.

Goal 4:

To help deliver improved sustainable environmental outcomes.

Goal 5:

To manage our business and deliver our services to our customers in a cost effective way.

AFBI supports DARD's objectives by delivering:

- statutory, analytical and diagnostic work;
- research and development;
- specialist scientific advice;
- an emergency response capability in the context of animal and plant disease outbreaks and other emergencies in the food and environment areas.

Funding

AFBI is an NDPB sponsored by DARD and is mainly funded through Grant-in-Aid. The Grant-in-Aid is voted in DARD's Estimate and is subject to Assembly control. AFBI's current and capital expenditure form part of DARD's Resource DEL and Capital DEL respectively. AFBI also raises funds through receipts generated in the course of its operating activities. In 2013/2014 the grant-in-aid amounted to £40.034m (2012/2013: £40.030m).

Relationship with DARD

AFBI's main point of contact is the Sponsor Branch (ASB) in the department. Regular meetings are held with the Sponsor Branch where matters relating to corporate governance, performance measurement, budgets, financing and accountability matters are discussed. A wider customer-contractor relationship also exists between AFBI's science delivery branches and the policy branches in DARD who specify DARD's required work programme.

AFBI's responses to the quarterly monitoring rounds and Comprehensive Spending Reviews are all routed through ASB.

Relationships with other Government Departments and Agencies

AFBI has Service Level Agreements to provide services to the Department of Culture, Arts and Leisure (DCAL), the Northern Ireland Environment Agency (NIEA) Water Management Unit, the Department of Environment (DOE) Marine Division and the Food Standards Agency (FSA NI). It also does a significant body of work for the Centre for Environment, Fisheries & Aquaculture Science (CEFAS), Department of Agriculture, Food and the Marine, Republic of Ireland (DAFM) and the Department for Environment, Food and Rural Affairs (DEFRA) and its agencies and NDPBs.

Relationships with Educational Establishments

AFBI continues to co-operate on projects with both local universities and has also developed close working relationships with universities and institutions in the United Kingdom, Ireland, Republic of India, People's Republic of China, Canada and the United States of America.

Marketing

AFBI's primary goal is to support the Northern Ireland agri-food sector through specialist scientific services and cutting edge research and development. During 2013/14 AFBI worked with a wide range of local companies, delivering innovative product and process development with the support of DARD and Invest NI, as well as national and international funding bodies.

AFBI continued to build its international scientific collaborations, working with the very best global agri-food research groups to ensure that through AFBI, the Northern Ireland industry has access to the best cutting edge research and innovation that is available anywhere in the world. In Europe, AFBI continued to be an active participant in the European Union's Framework 7 Programme (FP7) and during 2013/14, made a strong first showing in response to the first round of research funding calls under FP7's successor Programme, Horizon 2020.

AFBI continued to build collaborations in the USA and Canada, developing strong relationships with government and private sector bodies that led to the first AFBI-led Transatlantic Scientific Forum on Agri-food Research in November 2013. This forum is now working to prioritise a shared transatlantic agri-food research programme for the medium to longer term. The outputs will be important in providing Northern Ireland access to leading research programmes in the US and Canada.

Performance

The table below summarises performance against AFBI's 2013/2014 business plan targets with the outturn position having been validated by Internal Audit.

BUSINESS PLAN TARGET	OUTCOME 31 MARCH 2014
1: At least 95% of the volume of DARD diagnostic and analytical tests stipulated in the Assigned Work Programme delivered to agreed time and quality standards	Achieved
2: At least 95% of DARD Evidence & Innovation R&D projects reported to DARD in-line with agreed reporting requirements	Achieved
3: At least 90% of DARD customers satisfied with delivery of the Assigned Work Programme	Achieved
4: To progress the badger sett surveys and produce an interim report by mid July 2013 and the final report by the end of March 2014	Achieved
5: To agree with DARD the Full Format Proposal (FFP) for the ecological and badger behavioural studies and progress in accordance with the timescales specified in the FFP	Achieved
6: Emergency response requirements reviewed and agreed 2013/14 actions implemented to timescale with DARD and other public sector customers with which AFBI has an SLA	Achieved
7: All emergency response contingency plans reviewed and updated in-year	Achieved
8: Each contingency plan tested by a minimum of one desktop exercise per annum	Achieved
9: At least 2 contingency plans tested by real or simulated events	Achieved
10: Overall commercial customer satisfaction achieved at satisfactory or higher for 90% of completed contracts	Achieved
11: Generate non-GiA revenue of £18.62m as an organisation (including the profit on sale of livestock)	Achieved
12: Develop a 3-year action plan to maximise the drawdown of competitive R&D funding from Horizon 2020, submit to DARD for approval by 30 November 2013 and progress in accordance with a timeframe to be agreed with DARD	Partially Achieved Action plan submitted to DARD by 30 November 2013 with a total of 13 actions. At 31 March 2014, 10 had been achieved and 2 partially achieved. By November 2014, 12 actions have been achieved.
13: Science Strategy and action plan developed and agreed by AFBI Board by 31 March 2014 ready for implementation from 2014/15	Achieved

BUSINESS PLAN TARGET	OUTCOME 31 MARCH 2014
14: Maintain AFBI's international standing by having a minimum of 80 peer-reviewed scientific papers accepted for publication	Achieved
15: Publish 40 articles transferring knowledge, innovation and best practice to the agri-food sector	Achieved
16: Participate in 100 or more events to transfer knowledge, innovation and best practice to the agri-food sector	Achieved
17: Develop a corporate balanced scorecard as a performance management tool for implementation in 2014/15	Achieved
18: Deliver against AFBI's Equality Scheme Action Plan, as endorsed by the Equality Commission	Achieved
19: Deliver leadership training for senior staff and the staff development programme for 2013/14	Achieved
20: Reduce combined industrial and non-industrial absenteeism to below 9 working days per Whole Time Equivalent (WTE)	Achieved
21: Develop and implement an action plan to address the findings from a Stress in the Workplace Survey	<p>Partially Achieved</p> <p>The Board Sub-committee requested that the Stress in the Workplace and Morale and Motivation Surveys be combined. While significant progress has been made in these areas a few of the actions will extend into 2014/15.</p>
22: Develop and implement an action plan to address the findings from the Morale and Motivation Survey	<p>Partially Achieved</p> <p>As above.</p>
23: Complete a value-for-money review of AFBI's people management system and, if necessary, consider options for alternative platforms by 31 March 2014	<p>Target on Hold</p> <p>Action deferred by the AFBI Board as per Organisational Development & Human Resources Sub-Committee recommendation.</p>
24: Develop and submit to DARD a plan which identifies succession planning issues / challenges and how these will be addressed.	<p>Not Achieved</p> <p>Capability Succession Plan is being developed and final draft was submitted to the OD & HR Subcommittee of the Board in September 2014.</p>

BUSINESS PLAN TARGET	OUTCOME 31 MARCH 2014
25: Achieve a 'satisfactory' level of assurance in the Annual Internal Audit Assurance Report and an unqualified opinion in the NIAO Report to Those Charged with Governance	Achieved
26: Resource and capital outturn to be between 98.5% and 100% of agreed budget allocation	<p style="text-align: center;">Partially Achieved</p> Provisional resource outturn was 98.7% of agreed budget allocation Provisional capital outturn was 96.8% of agreed budget allocation.
27: Further improve the 30-day prompt payment target to a minimum of 94% and progress the 10-day prompt payment target to 70% monthly performance by the year end	<p style="text-align: center;">Partially Achieved</p> Outturn for the 30 day prompt payment target was 80% rather than the 94% target. Outturn for the 10 day prompt payment was 83% at the year end and has therefore been met.
28: Strategic Cost Model methodology to be submitted to DARD by 31 August 2013 for approval and the approved methodology used to cost the Assigned Work Programme for 2014/15	Achieved after deadline
29: Engage with and submit to DARD a financial plan which mitigates against the potential reduction or cessation of AFBI's royalty income stream	Achieved

AFBI Board

AFBI is managed by a Board which has responsibility for providing strategic leadership for the organisation, ensuring that it fulfils the delivery objectives set by the Department of Agriculture and Rural Development (DARD) and for promoting the efficient and effective use of staff and other resources by AFBI.

The main responsibilities of the Board are:

- to ensure that AFBI meets its agreed objectives and targets as set by the DARD Minister, and set down in the Management Statement and Financial Memorandum;
- to provide strategic leadership in the formulation of AFBI's strategy for the discharge of its responsibilities, taking account of the Minister's and DARD's priorities, as outlined in the science and technology strategies and in Service Level Agreements (SLAs) set by DARD and other AFBI customers;
- to ensure that effective arrangements are in place to provide assurance to DARD and the Minister on risk management, governance and internal control;
- to communicate AFBI's strategy and services to stakeholders in NI and beyond;
- to understand and articulate science and research and development needs and advise the Chief Executive on drawing these requirements into the formulation of a strategic plan for AFBI;
- to oversee AFBI's functions, including encouragement of the highest standards in the disbursement of finance, and the efficient and effective use of staff and other resources throughout AFBI;
- to represent AFBI to its key audiences, for example industry, academic institutions and other research providers, locally, nationally and internationally;
- to engage with the Minister and DARD on matters pertaining to the work of AFBI and its strategic direction and input to the overall DARD strategic objectives;
- to identify and assess current and future developments in the agri-food and rural economy sector, and to recommend opportunities to expand into new markets and innovations to meet customers' needs.

Role of the Chairperson of AFBI

The Chairperson is responsible to the Minister. The Chairperson ensures that AFBI's policies and actions support the wider strategic policies of DARD and that AFBI's affairs are conducted with probity. The Chairperson shares with other AFBI Board members the corporate responsibilities set out in the Management Statement and Financial Memorandum (MSFM), and in particular for ensuring that AFBI fulfils the aims and objectives set by DARD and approved by the Minister. The Chairperson shall also set performance measures for the board, corporate and individual board members.

Board Members

Members are appointed in accordance with the Office of the Commissioner for Public Appointments (OCPA) NI Code of Practice. The terms of appointment of members are for either three or four year periods, with the Chair appointed for four years. The Chair receives an annual remuneration of £24,970 and is expected to commit approximately 40 days per annum to the post. The Deputy Chair receives £10,405 and has a commitment in the region of 20 days per annum. Members are expected to commit in the region of 15 days per year and receive £3,745. Further remuneration was received for committee work carried out.

[Chairperson Mr Seán Hogan](#) is also the current Chairman of Northern Ireland Water Ltd, and former Chairman (Designate) of the Education & Skills Authority, Chairman of Newry & Mourne Health & Social Services Trust, and Chairman of the DHSSPSNI's Independent Review Panel for Complaints. He is also a former Non Executive Director of the Northern Ireland Transport Holding Company, Warrenpoint Harbour Authority and the Southern Health & Social Services Board.

He is also currently a member of the Advisory Board of the Chartered Institute of Public Finance & Accounting, and a Board Member of Sentinus.

His term of office finished on 31 March 2014 and he was succeeded by Colm McKenna who was appointed on 14 April 2014.



Mr Seán Hogan



Mr Colm McKenna



Professor Bill McKelvey



Mrs Hilary McCartan



Mr Bob McCann



Mr Trevor Hinds



Mr Seamus McCaffrey

Incoming Chairperson Mr Colm McKenna is also the current Chairman of South Eastern HSC Trust and Chairman of the NI Assembly Secretariat Audit and Risk Committee and a Non Executive Director of ILEX URC Ltd.

He was previously employed as Head of Marketing Services-UK at the Bank of Ireland.

Deputy Chairperson Professor Bill McKelvey is an Ulsterman, born and raised on a dairy farm in County Down, who has spent most of his professional career to date working in Scotland. He currently lives near Peebles in the Scottish Borders.

He was Chief Executive and Principal of the Scottish Agricultural College for ten years until early 2012. He is currently a member the Court (Governing Body) of the University of the Highlands and Islands and is a Non-Executive Director of Scotland's largest farming business, Glenrath Farms. He holds two other Ministerial appointments: he is a member of the Board of the Scottish Environmental Protection Agency, and a member of the Scottish Food Advisory Committee.

He holds a first class honours degree in veterinary science from the University of Glasgow, a postgraduate diploma from the University of Guelph, Canada, and a PhD from the University of Aberdeen. He is a Fellow of the Royal Agricultural Societies, serves as Chair of the Veterinary Policy Group of the British Veterinary Association and is a member of the Advisory Committee for Rural Development of Scottish Land and Estates.

In May 2011, he was elected as a Fellow of the Royal Society of Edinburgh, in recognition of his contribution to science, and was awarded an OBE in the Queen's Birthday Honours (June 2011), for services to agriculture. In June 2012 he was awarded an Honorary Doctor of Science Degree from the University of Edinburgh.

Mrs Hilary McCartan is a Chartered Accountant by profession and lives in Belfast. Mrs McCartan has over 20 years post qualifying experience in executive and non-executive roles in the private and public sectors.

Mrs McCartan has two other public appointments. She is a Commissioner on the Northern Ireland Legal Services Commission and a Non-Executive Director of the Business Services Organisation (DHSSPS).

Mr Bob McCann lives in Newtownabbey. He is a Chartered Certified Accountant and has a broad management background having held a number of senior management posts in both the private and public sectors, including Group Financial Controller and General Manager (Finance) in NIE, and Director of Finance in the IT company Sx3. He is currently a Non-Executive Director in the Northern Health and Social Care Trust and Warrenpoint Harbour Authority, Independent Member of the NI Housing Executive Audit Committee, member of the Solicitors Disciplinary Tribunal, and a member of the NI Valuation Tribunal.

Mr Trevor Hinds lives in Holywood, Co Down, and is currently a self-employed management consultant with over twenty years' experience in human resources. He is a Member of the Chartered Institute of Personnel and Development, a member of the Institute of Directors



Mr Alan
McKeown



Mrs Hilda
Stewart



Professor Patrick
Murphy



Dr Cecil
McMurray



Mrs Sarah
Havlin



Mr David
Lindsay



Mr Ken
Millar

and a past President of the Rotary Club of Belfast. Trevor has considerable senior executive experience in each of the Public, Private and Voluntary sectors in Northern Ireland, having formerly been General Manager and Company Secretary of a wholly owned subsidiary of Bank of Ireland, and laterally Director of Executive Resourcing in PwC, Northern Ireland. He has been reappointed as a member of the Drainage Council of the Rivers Agency for NI, is a Board member of Bryson Future Skills, a wholly owned subsidiary of the Bryson Group, is a Board member and Trustee of Mindwise, the Northern Ireland Mental Health charity and a Board Member of the Ulster Supported Employment Ltd.

Mr Seamus McCaffrey lives in Irvinestown. He is a practising accountant and a livestock farmer at Irvinestown. He is a member of the Ulster Farmers Union. He is Chair of Business in the Community's Western Team and a past member of the Western 'Investing for Health Partnership', representing the interests of the private sector along with other members from the statutory and voluntary sectors. Mr McCaffrey is a Past Chair of the Ireland-Poland Business Association, an all-island trade association.

Mr Alan McKeown is Group Business Development Director at Dunbia, one of the UK and Ireland's largest meat processing businesses headquartered in Dungannon. Mr McKeown holds a first class honours degree in Biochemistry and has previously worked as a management consultant for PricewaterhouseCoopers and Accenture. He lives in Cookstown, and has a keen interest in all aspects of agriculture and rural affairs.

Mrs Hilda Stewart lives in Randalstown and is actively involved in the family farm partnership. She has an MSc in Sustainable Rural Development from Queen's University Belfast. Mrs Stewart is currently Chair of the CAFRE College Advisory Group (CAG). She has previously held a number of public appointments and voluntary positions including World President of the Associated Countrywomen of the World and Chairman of the Federation of Women Institutes of Northern Ireland. Mrs Stewart who is a Fellow of the Royal Agricultural Societies was awarded the MBE in 1996 and the OBE in 2007 for services to rural women and agriculture.

Professor Patrick Murphy lives in Rostrevor, Co Down. Professor Murphy has been involved in management, governance and teaching at every stage of education from nursery to university level, including seven years as Director and Chief Executive of Belfast Institute of Further and Higher Education. He currently represents the education sector on the CAFRE College Advisory Group and holds a Ministerial public appointment in the Southern Education Library Board, where he chairs the Audit and Finance Committees. He is also a member of the Northern Ireland Medical Research Ethics Committee.

Dr Cecil McMurray lives in Helens Bay, Co. Down. Dr McMurray has held a number of senior positions with DANI and DARD and QUB. He is an independent consultant, operating through Sci-Tec Consultancy, who has worked for the World Bank, the European Commission and Ministries of Agriculture in several countries world-wide. Dr McMurray is currently chairing a DEFRA's Diagnostics Advisory Group on Bovine Tuberculosis. Dr McMurray holds no other Ministerial Public appointments. He was awarded a CBE for Public Service in 2002.

[Mrs Sarah Havlin](#) is the Certification Officer of Northern Ireland; a quasi-judicial and regulatory public office in the field of Trade Union Law. A solicitor by profession, she has a background in agricultural law, including the Chairmanship of the Independent Agricultural Appeals Panel for Farming Grants and Subsidies and Animal Valuation, and she currently serves as the Chair of the Agricultural Wages Board. She is a visiting tutor at the Institute of Professional Legal Studies at Queen's University and an Associate Lecturer in Law with the Open University. Mrs Havlin also holds a Ministerial public appointment in the Exceptional Circumstances Tribunal and the Regulation and Quality Improvement Authority.

[Mr David Lindsay](#) lives in Killinchy, Co Down. Mr Lindsay has a First Class Honours degree in Food Technology. He is a fully chartered member of the Chartered Quality Institute and has a certificate of competence in project sponsorship that is awarded by the National School of Government and College of Estate Management to the OGC approved syllabus. Mr Lindsay is the Project Sponsor for the Northern Ireland Fishery Harbour Authority (NIFHA), and also holds a Ministerial public appointment with The Northern Ireland Food Advisory Committee.

[Mr Ken Millar](#) lives in Comber, Co Down. Mr Millar was CEO and Accounting Officer of a DFP Agency between 1996 and 2002. He also acted as CEO and interim Accounting Officer for a short period for the Northern Ireland Law Commission. Mr Millar was involved in preparatory work in relation to the formation of AFBI and in its organisational development between 2006 and 2010. Mr Millar also holds a Ministerial public appointment with the Northern Ireland Housing Executive Board.

Board Sub-Committees

There are four sub-committees of the Board.

Organisational Development and Human Resources Sub-Committee

The primary role of this Committee will be the overview of Organisational Development and Human Resources within AFBI and to support the Board's programme of Change Management.

Non-executive chair

Professor Bill McKelvey

Non-executive director

Professor Patrick Murphy

Non-executive director

Mr Ken Millar

Audit Committee

The Audit Committee advises the Board and Accounting Officer on issues of risk, internal control, governance and any material items affecting the accounts.

Audit Committee

Non-executive chair

Mr Bob McCann

Non-executive director

Mr Trevor Hinds

Non-executive director

Mrs Sarah Havlin

Other Attendees include:

Head of Internal Audit

DARD Internal Audit

Northern Ireland Audit Office

AFBI Sponsor Branch

Chief Executive Officer, AFBI

Head of Finance and Corporate Affairs, AFBI

Head of Finance Branch, AFBI

Science Strategy Committee

The role of the Science Strategy Committee is to assist the Executive in developing a Science Strategy for AFBI. In particular, to:

- Identify and prioritise areas of existing scientific work which are of strategic importance to AFBI
- Identify and prioritise areas of existing scientific work which are of lower strategic importance to AFBI and which could therefore be reduced or ceased in order to transfer resources to work of higher priority.

Science Strategy Committee

Non-executive chair

Mr David Lindsay

Non-executive director

Dr Cecil McMurray

AFBI Board Finance Sub-Committee

The role of the AFBI Board Finance Sub-Committee is to support the Board in its responsibilities for the oversight of financial management including, in particular, the review of financial plans and budgets as well as financial monitoring.

AFBI Board Finance Sub-Committee

Non-executive chair

Mrs Hilary McCartan

Non-executive director

Mrs Hilda Stewart

Non-executive director

Mr Seamus McCaffrey

Management Board

The executive board of the Institute were as follows:

Chief Executive Officer
Deputy Chief Executive Officer
Deputy Chief Executive Officer
Deputy Chief Executive Officer

Professor Seamus Kennedy
Dr Sinclair Mayne
Dr Stanley McDowell
Mrs Lesley Hogg

The Management Board meets at least monthly with a standing agenda covering finance, resources, operational management, health and safety and business development. The minutes of these monthly meetings are available on AFBI's intranet.

Details of significant interests held by the Management Board members

The Management Board Members do not hold any other directorships or any other significant interests which may conflict with their management responsibilities.

Role of the Accounting Officer

AFBI's Chief Executive is designated Accounting Officer for the NDPB by the Departmental Accounting Officer and as such is accountable to Northern Ireland Assembly for AFBI's use of resources as set out in the Management Statement/Financial Memorandum (MSFM).

In particular, the Accounting Officer shall ensure that:

- AFBI's strategic aims and objectives support DARD's wider strategic aims and current PSA objectives and targets;
- the financial and other management controls applied by DARD to AFBI are appropriate and sufficient to safeguard public funds and for ensuring that AFBI's compliance with those controls is effectively monitored ('public funds' include not only any funds granted to AFBI by the Assembly but also any other funds falling within the stewardship of AFBI);
- the internal controls applied by AFBI conform to the requirements of regularity, propriety and good financial management; and
- any grant-in-aid to AFBI is within the ambit and the amount of the Request for Resources and that NI Assembly authority has been sought and given.

Financial Matters

Financial Results for the Year

AFBI's Statement of Comprehensive Net Expenditure shows a net operating cost of £40,225k (2012/13: £44,955k). The main decrease is due to the reduction in the Corporation Tax charge to AFBI in this year. Within this net position AFBI raised income of £18,542k (2012/13: £18,847k). There is no significant change in the income raised during this year.

Service level agreements are agreed with Food Science Agency Northern Ireland (FSANI) and Department of Culture Arts and Leisure (DCAL), securing funding in important areas of work. AFBI presented monthly financial reports to the AFBI Board and reviewed expenditure against budget at the Executive Management Team Meetings to ensure that AFBI's expenditure did not exceed its budgeted resources.

At the year end the net assets of AFBI is £15,090k (at 31 March 2013: £14,531k).

Treatment of Pension Costs

The treatment of pension costs is described in the accounting policy Note 1 under the heading of Pensions.

Events since the End of the Financial Year

There have been no significant events since the end of the financial year which would affect the results for the year or the assets and liabilities at the year end.

Future Funding

The outcome of each Comprehensive Spending Review determines the amount of funding available to AFBI in the future.

In view of the current economic climate and the coalition government's determination to reduce the deficit, further cuts in funding are anticipated. AFBI continues to face price increases and is actively seeking to improve its overall procurement to mitigate against these cost pressures and reduce its cost base. The impact of these factors requires AFBI to realise increased income from other commercial sources and to increase the efficiency of its operations.

AFBI is committed to widening its funding base and increasing the level of non-Grant in Aid revenue generated year on year. Particular focus is being placed on increasing collaborations with the local agri-food sector and on winning funding through international collaborations, particularly in the EU, where the Horizon 2020 Programme will fund European research and innovation between 2014 and 2020.

AFBI continues to develop international business with the support of Invest NI, UK Trade and Investment and the Northern Ireland Bureau in Washington DC.

Other Matters

Career Development

AFBI continues to promote opportunities for career development internally and during the course of this year a total of 22 staff have achieved promotion in a wide range of disciplines and grades.

One of AFBI's strategic goals is to sustain and develop our knowledge base through attracting and investing in talented people.

In support of this objective, AFBI's Learning and Development Unit provide expert advice on learning and development opportunities covering the diverse range of skills required across the organisation.

This Unit also administers AFBI's Assistance to Study programme which has provided support for 33 staff this year in their pursuit of professional qualifications specific to AFBI's business.

Recruitment

AFBI continues to develop its workforce in line with its business aims and has made a total of 59 new appointments this year, covering grades across the scientific, administrative and industrial disciplines. This number reflects both permanent and temporary appointments.

Staff in AFBI

As at 31 March 2014 the number of the staff employed by AFBI was as follows:

	Males	Females	Total
Board	9	3	12
Management Board	3	1	4
Other staff	484	324	808
	496	328	824

Work Experience

AFBI is committed to providing work experience opportunities for students at all levels to assist them in developing the key skills required to be successful in today's working environment.

Fourteen students in higher education were given the opportunity to develop key work-related skills through a relevant, supervised work placement programme. Work experience was also given to 120 students covering a range of areas within AFBI.

Sickness Absence

AFBI had an operational objective of an average of 9 working days lost per staff member. Northern Ireland Statistics Research Agency (NISRA) have provided an outturn figure of 8.5 days for 2013-14. (11.5 days in 2012-13.)

Sustainability

The Executive's Programme for Government 2008-11 identified sustainability as a cross cutting theme and stated that building a sustainable future was a key

requirement of our economic, social and environmental policies and programmes.

DARD was the lead department within the NI Sustainable Development Implementation Plan for strategic objective– Promote Sustainable Land Management. Sustainability continues to be an underpinning principle of the Executive's Programme for Government 2011-15. AFBI assists DARD in the achievement of this objective through the conduct of underpinning R&D on production of biomass and renewable energy, nutrient management bioremediation of farm and municipal effluents and greenhouse gas production by livestock and soils.

Other key actions in 2013/2014 included:

AFBI Estate

In all its land-based operations, AFBI ensures it maintains land in good agricultural and environmental condition. It is however recognised that a significant proportion of the buildings on the AFBI occupied estate are energy and carbon inefficient; prime examples being at the AFBI Newforge and Stormont sites constructed in the late 1960s/1970s. A carbon management energy efficiency survey of the Newforge site undertaken in 2009 by the Carbon Trust concluded the existing buildings at the site present challenges and barriers in terms of upgrading them to meet the inevitable drive to drastically reduce carbon emissions. The current construction of the buildings would make any refurbishment and enhancement costly with lengthy pay back periods. It is therefore recognised under the DARD Estate Framework 2013 that modernisation and reorganisation of the AFBI estate is required to allow AFBI to make use of property assets more effectively and efficiently. Thereby an AFBI estate strategy is currently being developed and taken forward by the DARD – AFBI Estate Programme Board.

A draft Outline Business Case for the AFBI-Stormont Main Building has been drafted with other business cases to be developed in 2014/15 for other parts of the estate including the Newforge and Hillsborough sites. New sustainable technologies will be considered as part of any new developments on the estate in order to achieve energy efficient facilities capable of delivering reduced whole life costs.

Energy Usage and Carbon Reduction

AFBI has taken the appropriate measures to ensure it is compliant with the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES). The Institute has established baseline information of energy usage across all its sites against which consumption is measured on an annual basis. Efforts will continue to be made to reduce energy consumption both from the viewpoint of efficiency savings and reducing the carbon footprint.

Environment and Renewable Energy Centre (EREC), AFBI Hillsborough

With the need to reduce greenhouse gas emissions, reduce dependence on fossil fuels and increase our energy security, activities at the AFBI Hillsborough Environment and Renewable Energy Centre (EREC), have been on-going with a strong focus on sustainability.

The EREC delivers heat and electricity to the Hillsborough site from biomass and solar sources. The main sources of biomass are animal manures, short rotation coppice willow, forest residues and a small amount of miscanthus grass. An anaerobic digester, supplied with animal manures and silage, produces biogas which generates about 100kW of electricity and heat through a combined heat and power (chp) generator. This chp will substitute even more of the electricity usage at the AFBI Hillsborough site as well as taking advantage of the four renewable obligation certificates/MWh for the electricity produced. About 12kW of electricity is also supplied by an array of photovoltaic cells.

Heat, generated from a 320kW biomass boiler, a 120kW experimental biomass boiler, the AD CHP and a dedicated AD gas boiler is delivered around the site through a heavily insulated 1.1km district heating system. The majority of the biomass is derived from plantations of short rotation coppice (SRC) willow grown at AFBI's Hillsborough and other AFBI research sites, Forestry timber, other biomass sourced locally from agricultural SRC plantations and private forestry and an amount of forest brush in the past. Avenues are also being progressed to incorporate the licensed usage of *Phytophthora ramorum* infected larch which would help secure a reliable and less costly locally accessible biomass source for fossil fuel substitution.

The SRC willow is fertilised by farmyard waste water. The irrigation protocol is environmentally controlled taking account of ambient conditions through a programmable logic controller (environmentally sound and sustainable solution for waste water recycling). This not only negates the requirements for fertiliser imports improving the sustainability of such an intensive biomass energy crop but also helps with the cost and carbon associated with machinery and resources which would otherwise be employed for the agricultural spreading of the dirty water. This research is also beginning to be investigated at an early stage by the private and utility sectors and is currently facilitating the uptake of sustainable solutions within the sector coupling the growing of SRC willow with sustainable fertilisation regimes. Hot water is also supplied to the dairy parlour by solar panels.

Waste

Clinical waste: Under existing legislation, AFBI is obliged to incinerate all clinical waste. AFBI is reviewing its current autoclaving facilities with a view to reducing the volume of clinical waste that has to be transported off-site for incineration.

Other Waste: Recycling measures are in place for the major proportion of AFBI's waste in relation to paper, cardboard, plastics, metal and wood, toner cartridges, batteries and waste engine oils.

Social

AFBI does not have a policy covering corporate and social responsibility.

Internal Audit

An independent firm of auditors continue to provide Internal Audit services to the AFBI Accounting Officer and provides senior management and the AFBI Audit Committee with assurances of the adequacy of AFBI's systems of internal control and risk management.

The DARD Internal Audit unit also carried out a follow up audit of previous recommendations to provide assurances to the DARD Accounting Officer, DARD Sponsor Branch and the DARD Audit and Risk Committee that AFBI complies with the terms of the Management Statement and Financial Memorandum and other relevant legislative requirements.

Risk Management

AFBI has a risk management strategy and maintains a Corporate Risk Register (CRR) which is subject to scrutiny by the Institute's Internal Auditors. The CRR is also reviewed by the Risk Management and Business Planning Group (RMBPG) and the Audit Committee on a quarterly basis.

Significant risks are escalated from Branch level, through Divisions, for consideration by the RMBPG in the context of the Corporate Risk Register.

Performance Assessment of the AFBI Board

Arrangements are in place for an annual self assessment exercise by the AFBI Board to review and refine the objectives of the Board. The Chair of the AFBI Board also sets targets for the AFBI Board and assesses the performance of the individual Board members on behalf of DARD Sponsor Branch. The performance of the AFBI Chair is assessed by DARD's Accounting Officer and Permanent Secretary.

Compliance with HM Treasury Code of Good Practice on Corporate Governance

AFBI complies with the HM Treasury "Corporate governance in central government: Code of good practice" published in 2013 (the 2013 Corporate Governance Code). All the directors of the AFBI Board are non-executives and the Audit and Risk Committee and the Remuneration Committee chairs and members are all non-executives.

Supplier Payment Policy

AFBI is committed to the Better Payments Practice Code as set out in Annex 4.6 of Managing Public Money and is subject to the Late Payment of Commercial Debt Regulations 2002. AFBI shall comply with the British Standard for Achieving Good Payment Performance in Commercial Transactions (BS 7890). DAO (DFP) 12/08 refers.

Payment is regarded as late if it is made outside the agreed terms, or 30 days after the receipt of a valid invoice where no terms are agreed. In response to the current economic position, the Department for Business Enterprise and Regulatory Reform (BERR) announced in October 2008 that the Central Government was committed to paying businesses in 10 days.

AFBI managed to pay 80% (2012/2013 93%) of the invoices on AFBI's behalf in accordance with the agreed terms or within 30 days. The Business Plan target for 2013/14 was for 94% to be paid within 30 days. AFBI had a target in the 2013/14 Business Plan progress the 10-day prompt payment target to 70% monthly performance by the year end. At the year end the outturn for the 10 day prompt payment was 83%. The performance for the year on this 10 day target was 45%.

Security of Personal Data

AFBI is committed to the safeguarding of personal data and has set in place appropriate measures to ensure its security. Detailed information has been made available to staff on the intranet site on the type of information which is considered to be private data and how it should be handled.

All members of staff have been advised that it is their personal responsibility to ensure that any document with sensitive information, including personal data, is appropriately secured and to ensure that, and in the case of data held electronically, appropriate access controls are put in place to prevent unauthorised access, whether accidental or deliberate, by others. There were no incidents of loss of personal data during the year.

Disabled Employees

It is the Institute's policy to give equality of opportunity when considering applications from disabled persons. The Institute complies with all existing legislation in respect to its disabled employees and has recently completed a Disability Action Plan.

Equality of Opportunity

The Institute's policy is to give all eligible persons an equal opportunity for employment and advancement on the basis of their ability, qualifications and aptitude for the work.

Employee Involvement

AFBI maintains regular communications and contact with staff and managers through meetings, team briefings, seminars, bulletins and postings on the intranet. It also has well established arrangements for formal consultation with recognised Trade Union representatives on all significant developments affecting staff.

Health and Safety

AFBI complies with all relevant Health and Safety legislation and where practicable with all Health and Safety best practice. AFBI has a team of dedicated Health and Safety advisers and a system of health and safety committees throughout the Institute.

Audit of Accounts

The financial statements are audited by the Comptroller and Auditor General for Northern Ireland. As Head of the Northern Ireland Audit Office, he and his staff are wholly independent of the Institute and findings are reported to Northern Ireland Assembly. The annual fee for the audit of financial statements for 2013/2014 was £33,400 (2012/2013: £34,000).

The external auditors have not been instructed to undertake any non-audit work.

Disclosure of Information to the Auditor

All information deemed by the auditor to be relevant to their investigations is made available. The Chief Executive, as AFBI's Accounting Officer, has taken all steps to make himself aware of any relevant audit information and to establish that the auditors are aware of that information and have access to it.



Professor Seamus Kennedy MVB PhD MRCVS FRCPath
Chief Executive and Accounting Officer

Date: 6 November 2014



DIRECTORS' DIVISIONAL REPORTS



Sustainable Agri-Food Sciences Division (SAFSD)



Dairy cattle at AFBI Hillsborough

The Sustainable Agri-Food Sciences Division (SAFSD) has approximately 450 staff across 7 Branches - Agri-Environment, Crops, Grassland and Ecology, Plant Health and Environmental Protection, Agriculture, Fisheries and Aquatic Ecosystems, Food Science and Agricultural and Food Economics. These Branches together provide a continuum of scientific expertise across the agri-food chain, from the growing environment, through to plant and animal production systems, aquatic ecosystems, food safety and quality and finally profitability of the agri-food sector. This integrated approach ensures that the Division is well placed to address the important challenges of sustainable intensification of food production.

The work of SAFSD is driven by the ongoing needs of our wide range of customers. Whilst the Department of Agriculture and Rural Development (DARD) is the major customer, the Division also carries out work for other government departments and agencies such as the Department of Culture, Arts and Leisure (DCAL), the Northern Ireland Environment Agency (NIEA), the Food Standards Agency (FSA), Department of Agriculture, Food and the Marine (DAFM) in Ireland, DEFRA in the UK, as well as for bodies such as AgriSearch, the European Union, and a wide range of private customers from the agri-food industry. In 2013-14 the Division generated external income of £8.9M from these sources. This funding, along with Grant-in-Aid from DARD supported a broad programme of research and development work, and statutory testing in addition to

the provision of specialist advice and technical services to government and industry.

The key functions of SAFSD are to:

- Undertake basic, strategic and applied multi-disciplinary research for DARD and other government departments and agencies, industry and commercial organisations, and bodies representing the agri-food industry.
- Provide evidence-based scientific advice, to government policy makers, to regulators and to industry, on agriculture, food, fishing and environmental issues.
- Provide a wide range of statutory, regulatory and commercial analytical services such as chemical and microbiological analyses of food and animal feed and certification and monitoring of pasture, horticultural and agricultural crops and the wider environment. This also includes maintaining specific scientific preparedness for emergency responses in these areas.

SAFSD staff produced over 60 scientific publications in refereed journals during the year. These included a paper published in the American 'Journal of Dairy Science' which was identified as one of the 100 most highly cited papers published in the journal since the beginning of 2010.



Sampling on Lough Eske

The paper (Mitigation of enteric methane emissions through improving efficiency of energy utilization and productivity in lactating dairy cows' by T. Yan, C. S. Mayne, F. G. Gordon, M. G. Porter, R. E. Agnew, D. C. Patterson and C. P. Ferris) found that the enteric methane emissions from lactating dairy cows could be reduced by increasing their production efficiency. The selection of dairy cows with high energy utilization efficiencies and milk productivity offers an effective approach to reducing enteric methane emission rates.

Other SAFSD staff recognised during the year included Professor Jim McAdam, Head of Crops Grassland and Ecology Branch who was awarded an OBE in the 2014 New Years Honours list for his services to research and agriculture in the Falkland Islands and Professor Margaret Patterson who was listed in the 2014 UK's top 100 practising scientists, issued by the UK Science Council.

The Division has established a reputation for the high quality of the work it delivers locally, nationally and



(L-R) Dr McMurray of the AFBI Board and Prof Patterson of SAFSD were included in the list of the UK's top 100 practising scientists in 2014.



An example of infrared imagery used to assess the conformance of 2 LPIS reference parcels

internationally and examples are given below of key Branch achievements and highlights in the past year.

Agri-Environment Branch

Research conducted by Agri-Environment Branch (AEB) focussed on four key areas during the year, namely sustainable nutrient management, water quality, greenhouse gas emissions and soil quality. Outputs have included 42 publications in refereed high-impact scientific journals, 26 articles in conference proceedings and 25 technology transfer articles. The Branch has provided vital evidence enabling the DARD/DOE/AFBI negotiating team to defend and revise specific measures in the Northern Ireland (NI) Nitrates Action Programme (NAP) during the

recent review process with the European Commission. In particular, evidence was provided to demonstrate that farmers are not over applying slurry onto land at the start of the 'open period', but are being responsible, and applying the majority (90%) of slurry nutrients during peak growing periods. Evidence was also provided to show that current NAP regulations concerning the annual relocation and covering of manure heaps are effective at mitigating nutrient losses from field heaps of farm yard manure. Finally, research findings have been used to revise phosphorus (P) recommendations for grassland in the NI Phosphorus Regulations and to reduce P availability coefficients for organic manures in the NAP Regulations to ensure that sufficient amounts of plant-available P are permitted to match crop requirements on low P soils.

The Branch continues to make a significant contribution to the scientific evidence base necessary to balance the water quality objectives of the EU Nitrates Directive, Phosphorus Regulations and EU Water Framework Directive against the targets established for Northern Ireland agriculture in the '*Going for Growth*' Strategy. In the past year the Branch has conducted research on *inter alia*; the identification of mitigation measures to minimise nutrient loss post-slurry application; development of ecological lake management tools (EU INTERREG IVa funded DOLMANT project); the risks posed to water quality from legacy soil phosphorus; and changes in water quality in response to the implementation of the Nitrates Directive in the Colebrook and Upper Bann catchment. In addition, the Branch is leading a research review on the impact of agriculture on water quality in Ireland with the aim of identifying future research requirements in this area. The branch has established key national and international collaborative links through the North Western European Science-Policy working group on mitigating nutrient emissions from agriculture and is also involved with the US-based Phosphorus Research Coordination Committee.

The Branch is continuing to improve the UK inventory of nitrous oxide emissions from fertilisers, manures and excretal returns, in association with UK collaborators (funded by DEFRA and the Devolved Administrations) and is contributing to the Agricultural Greenhouse Gas Research Initiative for Ireland (funded by the Department of Agriculture, Food and the Marine), which includes investigating mitigation strategies for N₂O emissions and enhancing carbon sequestration in grassland soils.

In addition, long-term monitoring and experimental investigation of soil quality is helping to manage our soil resources in a sustainable manner into the future. The Branch successfully completed the technical review of the 2013 LPIS QA (Land Parcel Identification System, Quality Assessment), which is a mandatory EU annual requirement to assess the validity of the LPIS maintained by DARD.

Crops, Grassland and Ecology Branch

Crops, Grassland and Ecology (CGE) Branch investigates the diversity and range of crop plants which can be successfully grown and could have a potential future in agricultural and renewable energy systems seeking to cope with predicted climate change. A more sustainable agricultural industry in Northern Ireland must be based on more efficient grass production and utilisation, along with increasing the area of crop and horticultural production to reduce greenhouse gas emissions, and increase food and energy security.

Breeding new varieties of grass and potatoes for the future will be a fundamental component of any climate change mitigation strategy. The Branch's grass breeding programme has had a highly successful year. Two new varieties, bred by AFBI in association with our commercial partner Barenbrug Holland BV, have been added to the 2014 Recommended Grass and Clover List for England and Wales. "Fintona" now becomes the highest yielding ryegrass variety ever under silage management. Advances have been made in breeding potatoes for resistance to blight and stress tolerance, in tracking the movement of mushroom diseases through compost and in growing and storing apple crops.

Winter wheat and spring barley are the two most important cereal crops grown in Northern Ireland with very high potential yields. However, full yield potential and quality products have not been delivered to sustain intensification. AFBI's DAFM-funded *Cereal Improvement through Variety Choice and Understanding Yield Limitations* project aims to couple the large data source on varietal characteristics already available with new information from field experimentation at AFBI Crossnacreevy to model crop growth, development and yield formation across Ireland. These data will be used to spatially model crop growth and development, to identify agronomic and morphological characteristics suitable for local growing conditions and to quantify the economic



Cereal plots at AFBI Crossnacreevy providing data on crop growth, development and yield as part of the all-island CIVYL project



Dr David Johnston of Loughgall presenting a new AFBI-bred grass variety, Drumbo, marketed by AFBI's commercial partner, Barenbrug.



Prof Shekhar Sharma (AFBI) and Steve Orr (NISP Connect) presenting a new material derived from grass: i Grass 2.0



Willow baling at AFBI Hillsborough



Pine Marten

value of the key agronomic traits of a variety relative to yield. The project will result in the creation of an Economic Evaluation Index (EEI) for winter wheat and spring barley varieties.

AFBI is part of multi-site willow genotype evaluation trials which to date have resulted in three varieties being successfully registered for plant breeders rights and a further two breeding lines selected for registration in 2014. Evaluation of willow under the higher disease pressures experienced in Ireland's maritime climate is a very important factor in deciding which varieties will be

recommended for future climate scenarios across Europe. The ANSWER (Agricultural Need for Sustainable Willow Effluent Recycling) project, funded through the EU INTERREG programme, has enabled 'proof of concept' schemes to be established using Short Rotation Coppice Willow to treat primary and secondary sewage effluents. These data are essential to give the users of these technologies and environmental regulators the confidence to proceed with a technology with which they had little or no experience previously. Four commercial irrigation systems, (40 ha), have been implemented solving real water compliance issues.



Members of the Agriculture & Rural Development Committee with post-graduate students in Plant Health & Environmental Protection Branch in February

Plant Health and Environmental Protection Branch

This Branch has an important role in identifying and monitoring plant disease and provides information and advice on plant disease management and control to DARD and commercial customers. Most prominent has been the Branch's involvement in the emergency response to *Chalara fraxinea* (ash dieback disease) supporting the All Ireland *Chalara* Control Strategy. During 2013-14, the Branch's plant health team provided diagnostic and advisory support to both DARD and DAFM, with over 2000 diagnostic tests carried out on suspect ash samples.

The Entomology Section continued to provide specialist support to government on a wide range of threats to agriculture and forestry. Research continues on vectors of animal diseases and a novel technique for comparing attack rates on cattle and sheep was developed, which also demonstrated colour and orientation preferences of biting midges.

Statutory surveillance of local forests for non-indigenous pests has been revised to include the emerald ash borer, longhorn beetles and oak processionary moth. Horse chestnut leaf miner was detected in Ireland for the first time. Although likely to cause unsightly mines on leaves, the prognosis is that the trees recover from the initial defoliation.

Declining bee numbers continue to be a cause for concern. AFBI monitors overwintering survival of colonies and works with DARD to provide advice on contentious issues such as the impact of neonicotinoid insecticides and disease.

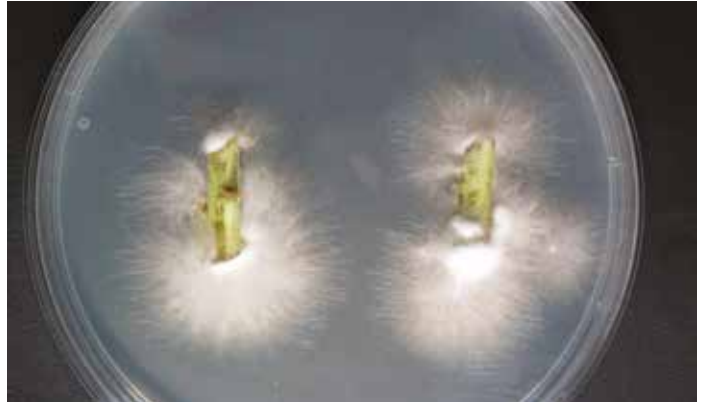
The Branch was involved in organising the international 'The State of Insect Conservation in Ireland' conference in Dublin 24-25th October, attracting over 90 delegates from across Europe. Much of the discussion related to land-use management in Ireland, and in particular the role of agriculture, fisheries and forestry in habitat maintenance,



Sticky traps on their back to catch biting midges (vectors of bluetongue and Schmallenberg viruses)



Chlora apotheciae spore forming on infected ash wood



Development of "green" formulations to control soil-borne *Fusarium* spp.

concluding that agriculture is an integral part of insect conservation and in maintaining the Irish fauna. This is crucial if Ireland is to meet European targets for preserving biodiversity. AFBI's expertise in sustainable agriculture will have a key role in conserving Irish insects, for the next generation.

The management of abiotic and biotic stresses in crop and horticultural plants is a high priority research area for the Branch with a number of projects investigating these issues. The EU-FP7 BIOFECTOR project is evaluating seaweed extracts and phosphorus solubilising, cold adapted- microorganisms for enhancing the yield of low input winter wheat. Research Challenge Fund (DARD- funded) projects are investigating the use of biostimulants in cereal and grass production, as well as novel methods for controlling *Fusarium* and other fungal pathogens in floriculture. A proof of concept project is assessing the potential use of bacteriophages in the control of potato blackleg while another is addressing the problems associated with climate change impact on crops.

A DAFM Stimulus programme project entitled "Monitoring Pathogen Evolution for Sustainable Cropping (MonPESC)" is developing a monitoring strategy for key pathogens of potatoes and cereals. This will deliver durable control strategies to the arable sector and provide appropriate recommendations to preserve the integrity of existing (and future) varietal resistances and/or fungicide chemistries.

Finally, following a rigorous assessment process, the Branch's Pesticide Usage Monitoring Group attained National Statistics accreditation during the year.

Agriculture Branch

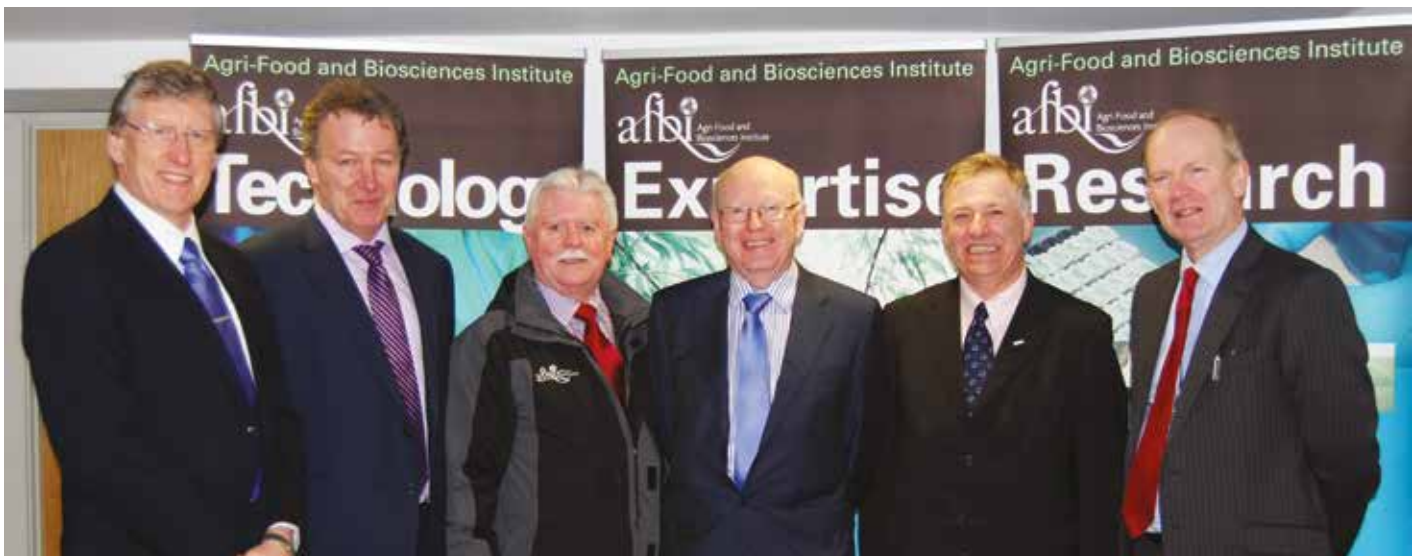
Research and development to underpin sustainable livestock and land-based renewable energy systems is undertaken by Agriculture Branch at AFBI's 310-hectare farm at Hillsborough, County Down. This resource, with its specialised experimental facilities, is used in multi-disciplinary research programmes with the analytical services laboratory providing a commercial forage analysis service for the dairy, beef and sheep sectors. Further research is conducted at a monogastric research facility and endocrinology laboratory at AFBI Newforge. The Branch has developed an innovative research model that integrates applied on-farm studies with the strategic and more basic research undertaken at AFBI.



Agriculture and Food Science Branches are determining the most important contributors to the odour from pig houses and how they may be abated



The International Beef Workers Group met in Northern Ireland to discuss “The Appliance of Science”. The group’s visit was jointly hosted by AFBI and CAFRE. The biannual meeting is for beef researchers to discuss the most recent research findings and involved 30 delegates from Northern Ireland, Republic of Ireland, Scotland, Wales, France and England.



Visit by Senior Teagasc staff to AFBI Hillsborough.

L-R- Dr Trevor Gilliland (Acting Head of Branch), Professor Seamus Kennedy, (AFBI CEO), Mr Seán Hogan, (AFBI Board Chairman), Dr Noel Crawley (Chairman of Teagasc Authority), Professor Gerry Boyle (Teagasc, Director) and Dr Sinclair Mayne, Head of Sustainable Agri-Food Sciences Division.



Agricultural Technology students from CAFRE visit AFBI Hillsborough

Branch resources are focused on the development of research programmes on climate change, sustainable livestock systems (dairy, beef, sheep and pigs & poultry) and knowledge exchange.

The Branch is currently leading work on 16 DARD Evidence and Innovation research projects and 6 DARD Research Challenge Fund programmes; each of these projects are in areas of policy priority for DARD and of strategic relevance to the industry. In particular, Agriculture Branch research projects play a major role in the implementation of the Agri-Food Strategy Board "Going for Growth" report.

The other main customers of the branch include the EU, DEFRA, farmer research levy boards (AgriSearch and PigRegen Ltd) and a range of commercial companies.

During the year, five post graduate students commenced their PhD studies within the Branch with projects in the areas of nutrient utilisation efficiency and animal health and welfare. Key performance indicators for 2013/14 show a high level of scientific output from the Branch (20 peer reviewed papers submitted or published; 50 scientific conference papers) combined with over 50 presentations to industry groups.

Future research priorities will be shaped by the need for applied and fundamental research for the agri-food sector within a policy environment which has an increasing emphasis on promoting competitiveness in the marketplace, on food security, and on delivering an improved environment and addressing animal welfare concerns.

Agriculture Branch hosted or co-organised several high profile technology transfer events during the year including AFBI's Dairy Conference (March 2014) and the International Beef Workers Group and International conference 'Greenhouse Gases and Animal Agriculture' in June 2013. The Branch's scientists featured prominently at both the British Society of Animal Science and the Irish Grassland and Animal Production Association scientific conferences with 22 abstracts accepted for publication. AFBI's reputation as a leading provider of science was further highlighted by a number of presentations at the European Federation of Animal Science conference held in Copenhagen in 2014.



Over the year approximately 2000 visitors attended knowledge transfer events organised by Agriculture Branch. Visitors included Martina Anderson (MEP), Ian Paisley (MP), a delegation from the Chinese People's Political Consultative Conference Shanghai Committee and senior National Farmers' Union officials. The Branch also hosted the Sheep Veterinary Society of Northern Ireland conference, a Biomass Renewable Energy Open Day and a Practical on-farm Renewable Energy Event. On-farm knowledge transfer events were organised in partnership with AgriSearch and CAFRE for the dairy, beef and sheep sectors with over 600 attendees.

Fisheries and Aquatic Ecosystems Branch

One of the important resources within this Branch is the research vessel *Corystes*, which carries out research and monitoring in the Irish Sea, underpinning much of AFBI's marine science for government, EU research programmes and contracts for commercial customers. Marine fish stock assessment work continued to provide



scientific support to policy customers during a challenging year towards delivering a reformed Common Fisheries Policy. AFBI scientific evidence was used by the DARD Minister in 2013 to achieve a reduction from 24% to 9% in a cut proposed by the European Commission in the total allowable catches (TAC) of the *Nephrops* (prawn) fishery in the Irish Sea. AFBI gear selectivity work with the fishing industry resulted in a number of gear designs being successfully evaluated to provide options for the Northern Ireland *Nephrops* fleet to be exempted from EU effort control measures.

The branch maintains a unique long-term time-series of key environmental variables in the Irish Sea and continues to lead the development of an integrated plankton monitoring programme to meet UK commitments under the EU Marine Strategy Framework Directive. Under contract to the Food Standards Agency, AFBI also acts as the official UK control laboratory for toxin-producing species of marine phytoplankton.

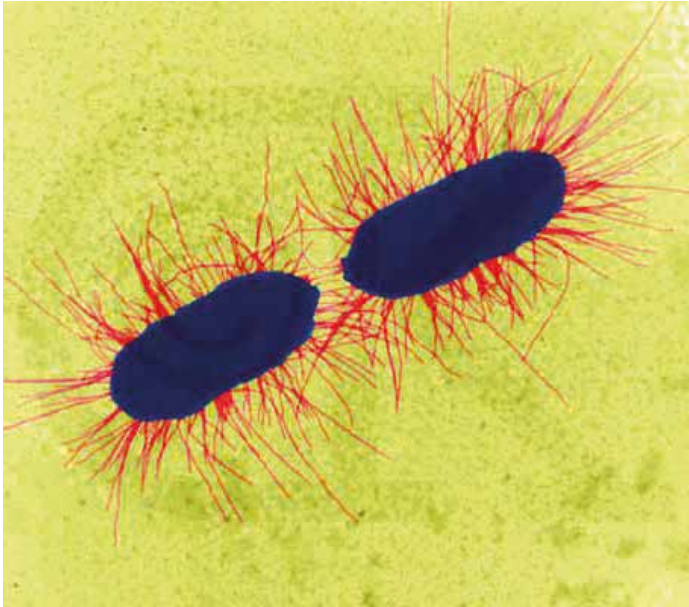


A tagged wild lobster about to be released as part of an AFBI experiment to study lobster movements along the coast



Dr Robert Rosell re-introducing eels to the Lagan river basin at Hillsborough Lake.

The past year has seen further development of science underpinning inshore fishery management, including seabed habitat mapping, shellfish management and ecosystem carrying capacity. New EU funding was secured to expand lobster tagging programmes aimed at determining wild lobster population movements, while new technology has been used to fit remotely operated digital cameras to lobster pots, as part of a DARD-funded project on the impact of pot fishing. During 2013, significant new work commenced to assess the impact of marine renewable energy development, with funding



Escherichia coli

secured for a two-year scientific baseline survey project at the Fair Head Tidal Energy Site. This project is also underpinning the development of new areas of work, particularly in the field of marine bio-acoustics. This involves deployment of towed and seabed-mounted hydrophones to help assess cetacean populations liable to be impacted by offshore developments.

The Branch conducts assessments of the status of key freshwater fish stocks, providing DCAL with scientific support for management of these resources. The latest triennial survey of Lough Erne fish stocks in 2013 revealed a significant recovery in Lower Lough Erne pollan, recorded as almost extinct in 1991, and a continuing trend toward domination of the lake by perch rather than roach. This indicates improvement in ecological status of the lake, albeit paradoxically linked to the introduction some years ago of the non-native zebra mussel. AFBI surveys of Lough Neagh have shown that this invasive mussel has expanded its population there, indicating a critical need to closely monitor ecological changes in Lough Neagh over the next decade. Commissioned work on fish stock management plans for Loughs Neagh and Erne has begun, with the aims of integrating assessments of all species and setting out biologically based reference points for sustainable harvest. Sustainable commercial exploitation of Lough Neagh eels continues to be supported by AFBI evidence of compliance with EU standards for protection of spawning numbers of this single European stock.



International students in Food Science Branch- Jefry Salutan (Ireland), Clare Wijngaarden (Netherlands) and Anais Paillard (France)

AFBI evidence on continuing low survival of wild salmon stocks has prompted DCAL to introduce mandatory catch and release for salmon recreational angling throughout its jurisdiction until stocks recover.

Food Science Branch

Food Science Branch continues to offer specialist food-related expertise in research, analytical services and training to DARD and industry.

Several DARD-funded research projects have enhanced the understanding of factors affecting the quality of Northern Ireland produce, including the impact of rearing cattle outdoors on grass on the health benefits of beef and milk, the potential for creation of dairy products with enhanced omega-3 fatty acids and the reasons why dairy beef has good eating quality. Some of this work involved collaboration with the University of Ulster and DARD's College of Agriculture, Food and Rural Enterprise. In a joint study with Agriculture Branch, the application of food flavour methodologies to data on pig-house odours has yielded new insights into the compounds responsible. Branch researchers have also conducted or contributed to DARD projects on such diverse topics as microbiological threats, analysis of septic tank discharges, willow combustion emissions and broiler gut microflora.

Highlights of 2013-14 have included the considerable expansion of the work of the Meat Hygiene and



Visit to AFBI of Professor Tim Brocklehurst and Ken I'Anson of the Institute of Food Research at Norwich

Authenticity Group. This team conducts molecular analyses for *Clostridium estertheticum* in beef and lamb, and *Campylobacter* in broiler houses, with demand from industry for this testing having increased markedly.

New research contracts on foodborne pathogens have included a survey of extended spectrum β -lactamase *Escherichia coli* in retail meats on the island of Ireland (funded by safefood) and the enumeration of *Campylobacter* on whole retail chickens from Scotland and Northern Ireland for the Food Standards Agency (FSA).



AFBI's food sensory evaluation suite

During the year, the Branch re-appointed by the FSA as the UK National Reference Laboratory for Milk and Milk Products for a further 5 years.

Research also included a study of the importance of flavour volatiles for the quality of beef, conducted for Meat and Livestock Australia in collaboration with Texas Tech University. A new project on factors affecting "ram lamb" odour and flavour has commenced, funded by DAFM, in collaboration with University College Dublin and Teagasc. A joint project with local industry has secured research funding from the Technology Strategy Board to study aspects of meat quality. The FSA-funded research project on processing factors for pesticide residues in fruit and vegetables continues to progress well as it comes into its final year. The Branch's food sensory expertise was an essential component of a successful bid to DAFM to fund an all-Ireland Sensory Network providing sensory expertise to industry and others.

Short-term contract work has seen the high pressure processing facility continue to offer a valued service to small companies. Likewise, several short-term studies have been successfully conducted throughout the year, with advice provided to DARD and industry on a regular basis.

The Branch has continued to deliver essential statutory analyses for both chemical residues and microbiological

contamination in foods, feeds and the environment and has maintained and extended the ISO 17025 accreditation needed to deliver this service. PhD and undergraduate students have visited to use our facilities and receive training, whilst also contributing to the work of the Branch. The analytical capability of the Branch has also contributed to studies conducted by other AFBI Branches, and continues to offer an emergency response capability to DARD and others. This capability is underpinned by both the research and analytical capability of the Branch, providing quick responses to new situations, the development of new methods and solving problems.

Agricultural and Food Economics Branch

Agricultural and Food Economics Branch is one of the leading socio-economic research centres in the UK with a strong reputation for providing decision support to the policy, NGO and private sectors. Its work programme encompasses the economics of farm businesses, rural households, agri-food systems and the rural environment, along with an extensive programme of policy impact analysis. Research outputs are presented in accessible formats for stakeholders via policy and practice briefs, reports, research papers, seminars and tailored knowledge transfer events. In 2013-14 its main customers were: DARD; DEFRA; SEERAD, Scotland; the Environment & Countryside Department, Wales and ADAS.

Demand for a rigorous socio-economic evidence base to support decision making has grown very significantly in recent years and during 2013-14 the Branch was engaged in 15 active research projects funded by DARD in addition to the Food and Agricultural Policy Research Institute (FAPRI-UK) policy analysis project funded by the four UK administrations. In order to support the growth in demand, four new members of staff were appointed during the year, enhancing the international staff profile of the Branch.

Staff members continued their active engagement with policy makers and industry in addition to presenting their research findings at national and international research conferences. Of particular note during the year was a major economic systems study undertaken to assess the potential impact of proposed local greenhouse gas mitigation legislation on the agri-food sectors in Northern Ireland. The results of this study were presented to a wide range of stakeholders at a conference in AFBI Headquarters in September 2013. The potentially negative impacts of the proposed legislation on dairy and beef production, and agri-food exports from Northern Ireland, were highlighted. Modelling undertaken by the Branch played a crucial role in informing the deliberations of the Agri-Food Strategy Board as it prepared its *“Going for Growth”* report.

Over 20 policy briefings and research reports were completed with specialist presentations being made for example to DARD’s Policy Division and to DAFM in Ireland. Stakeholder events were attended by a wide range of public and private sector stakeholders including DARD, CAFRE, Northern Ireland Agricultural Producers Association, Northern Ireland Grain Trader Association, the Ulster Farmers’ Union and political representatives. A seminar on the *“Impact of CAP Post-2013 Reforms on Agriculture in Northern Ireland”* was attended by over 40 delegates.

Branch staff represented AFBI on the scientific committees of the British Agricultural Economics Society; the European Association of Agricultural Economists; the UK Network of Environmental Economists; the European Association of Environmental and Resource Economists; and *EuroChoices*, the international outreach and knowledge exchange journal on agri-food and rural economics.



Veterinary Sciences Division (VSD)



Veterinary Sciences Division (VSD) has approximately 280 veterinary, scientific, technical and support staff across its five scientific branches i.e. Bacteriology, Chemical Surveillance, Disease Surveillance and Investigation, Immunodiagnostic and Virology branches. The five branches provide an integrated programme of statutory testing, emergency response and contingency planning, animal disease surveillance, research and development, and commercial services in the areas of animal health and food safety.

DARD remains our primary customer with the work of the division assisting the department in achieving its strategic goals of enhancing animal, fish and plant health and animal welfare, and helping the agri-food industry prepare for future market opportunities and economic challenges. During the year the division successfully delivered the DARD assigned work programme of analytical testing to the required turnaround and quality standards. This work included testing across the major animal health control programmes including brucellosis, transmissible spongiform encephalopathies, bovine tuberculosis, post-import and epizootic disease, as well as a range of other animal disease surveillance work. The Division also provided support to DARD in relation to the department's proposed "Test-Vaccinate-Release" project to control bovine TB infection in badgers. Work undertaken by AFBI in 2013/14 included completing extensive badger sett surveys of two areas in Co. Down and providing logistical and planning input to the design of field study. An important part of VSD's work is to maintain an

emergency response capability and carry out contingency planning on behalf of DARD for the major epizootic diseases of farmed animals. This work is undertaken by the Immunodiagnostic, Disease Surveillance and Investigation and Virology Branches, and provides an emergency response capability for diseases such as avian influenza, Newcastle disease, bluetongue, foot-and-mouth disease, equine infectious anaemia, classical swine fever and African swine fever. An EU Food and Veterinary Office (FVO) audit of UK Contingency Planning for Epizootic Diseases took place in November 2013 and included examination of DARD and AFBI contingency plans. Testing and scientific advice was also provided on a number of emerging disease issues, including outbreaks of infectious laryngotracheitis in poultry and increased testing requirements for porcine reproductive and respiratory syndrome.

Although DARD remains the major customer of the work of the Division, VSD also undertakes work for a number of other customers including the Food Standards Agency, Department of Agriculture, Food and the Marine in Ireland, the European Union, and a range of commercial customers. In 2013-14 the Division generated external income of over £2.9M from external customers. The Chemical Surveillance Branch was successful in a competitive tender to supply National Reference Laboratory (NRL) services for marine biotoxins to the UK central competent authority, the Food Standards Agency. While the major part of VSD's work relates to statutory testing, disease surveillance and emergency response,



Chemical Surveillance Branch's "Residues in Sheep and Cattle" now focuses on antibiotics, antiparasitics and anticoccidials

internationally competitive R&D is essential to ensure that the Division can employ technological advances to improve animal disease control, ensure the safety of food of animal origin and has the capability to respond to new and emerging disease threats. Increasingly such R&D is undertaken in collaboration with external institutes. During the year, two applications were submitted to EU Horizon 2020 programme by Virology Branch, each involving large multinational consortia of research partners.

The Division is very pleased that Dr Danny Todd, a recently retired member of staff, was awarded the OBE in the 2014 New Year's Honours list in recognition of his contribution to biological sciences and veterinary work.

Bacteriology Branch

The Bacteriology Branch undertakes an integrated programme of statutory, diagnostic and R&D work on the major bacterial pathogens of animal and public health significance. The work includes laboratory testing and confirmation of bovine TB, brucellosis, and *Salmonella* species under the DARD Assigned Work Programme. The work involves the application of a range of bacterial culture and molecular assays. Tests were fully delivered to the department to the agreed time and quality standards.

During the year, *Salmonella* Gallinarum infection was confirmed in two free range egg layer flocks which were suffering high mortality. These outbreaks follow two



Badger Setts in County Down were surveyed as part of preparatory work for DARD's Test-Vaccinate -Remove (TVR) project

previous incidents in 2012, which were the first identified in Northern Ireland since 1984. VSD provided specialist advice to industry and DARD on these outbreaks.

Work to survey two areas in County Down for badger setts, as part of preparatory work for DARD's Test-Vaccinate-Remove (TVR) project, was completed during the year. Bacteriology staff also provided logistical and planning input to the design of the field element of the proposed TVR project. Final reports for a DARD-funded TB Biosecurity Study and a literature review of the TB risks associated with slurry were completed and submitted to DARD.

The results of a BBSRC-funded Roslin Institute-AFBI collaboration, investigating the impact of host genetic variation on bovine TB susceptibility, were published in February 2014 in the journal *Heredity*, and were accompanied by a podcast and other media uptake. The study involved a genome-wide association study, based on a case-control study of Holstein-Friesian cattle in Northern Ireland and identified genome regions associated with TB susceptibility. The results indicate that TB resistance could be increased by genetic selection and include the possibility of using marker-based genomic selection. Other research work on bovine TB published during the year included work examining the association between genotype ('strain' type), TB detectability and outbreak size. A further R&D project, funded through the EU EMIDA-ERA NET started during the year and will measure the specificity of new diagnostic reagents and vaccine



An AFBI and Roslin Institute collaboration indicated that TB resistance in Holstein-Friesian cattle could be increased through genetic selection

candidates to control *Mycobacterium avium* subspecies *paratuberculosis* infection in cattle.

Ensuring that the laboratory fully adheres to the strict biocontainment requirements for animal pathogens is an important aspect of the work undertaken. During the year the *Brucella* culture work of the branch underwent a successful audit by the Northern Ireland Health and Safety Executive with respect to compliance with the Specified Animal Pathogens Order.

The ISO17025-accredited DNA identity and parentage testing work of the branch supports DARD's initiatives to detect and deter animal identity fraud. During the year the branch was also successful in being included in the British Cattle Movement Service list of laboratories approved for the provision of DNA parentage testing.

Chemical Surveillance Branch

This Branch, which is the UK National Reference Laboratory (NRL) for residues of most of the illegal veterinary drugs, met all its key performance indicators for DARD for testing in 2013-2014. Following a DARD review of its residues surveillance programmes, the Bovine Quality Assurance Scheme (which had been focussed mainly on illegal substances) was replaced with a risk-based "Residues in Sheep and Cattle" which focuses on antibiotics, antiparasitics, anticoccidials, etc in both sheep and cattle. This scheme identified a number of samples containing residues of the flukicide closantel in sheep. The branch also introduced a new test to monitor compliance of the feed industry with EU legislation on



Confirmatory testing for veterinary drug residues in Chemical Surveillance Branch

carry-over of coccidiostats into non-target feeds. The test detects and quantifies a wide range of pharmacologically-active substances that may be administered to animals in feed, in anticipation of new EU legislation intended to control the inadvertent carry-over of these medicines into ostensibly unmedicated feedingstuffs.

CSB maintained ISO 17025 accreditation, for all of its tests, at its annual UKAS audit. It was also successfully audited for compliance with the applicable EU legislation by the UK central competent authority – the Veterinary Medicines Directorate. Branch staff continued to act as scientific advisers/assessors to the UK Veterinary Residues Committee and the Advisory Committee on Animal Feedingstuffs and attended two UK NRL meetings in London and EU-Reference Laboratory meetings in Wageningen and Berlin.

The branch is also the UK NRL for marine biotoxins on behalf of the Food Standards Agency. During the year, Branch staff assisted the agency in completing a risk analysis that will allow for adjustments in the sampling plan to meet the findings of a recent EU Food and Veterinary Office audit of marine biotoxin testing across the UK. Branch staff attended two UK-NRL meetings and participated in a Working Group on alternative methods for the determination of paralytic shellfish poisoning toxins in Berlin.

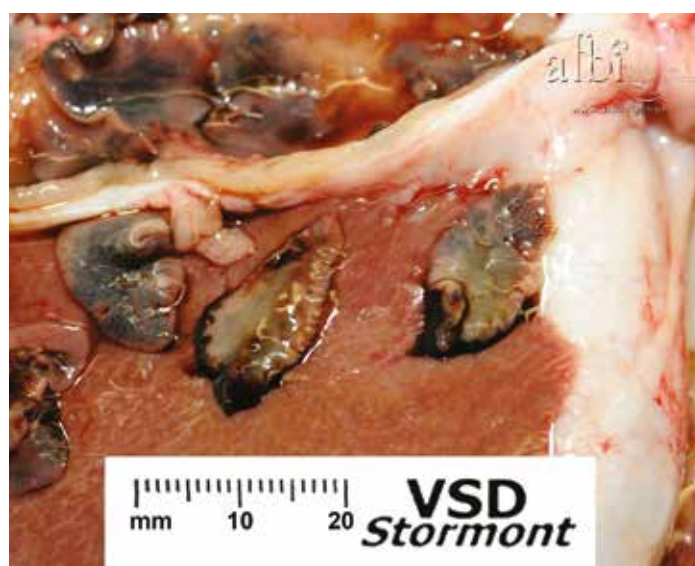
Branch staff provided commercial and consultancy services for a wide range of customers in Northern

Ireland, nationally and globally. This work included consultancy services provided to the Kurdistan Regional Government in Iraq, and to government and industry in Chile and Mexico. Customers in Ireland, Britain and further afield came to the branch for ISO 17025-accredited analyses of a wide range of products for veterinary drug residues and for marine biotoxins.

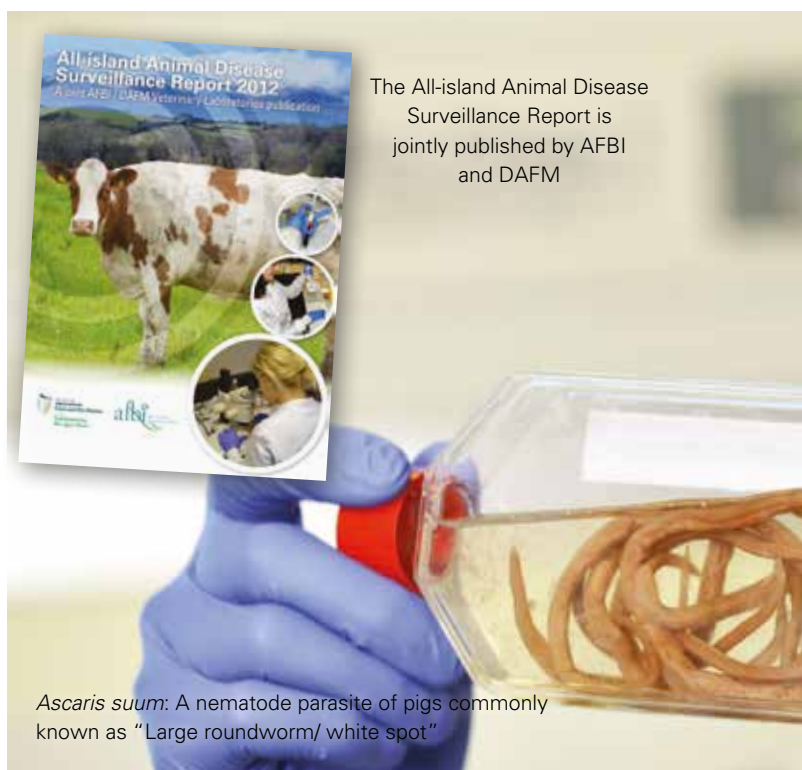
Staff were authors on 10 refereed scientific publications during the year, covering areas as diverse as the natural occurrence of semicarbazide in the shells of Bangladeshi shrimp, and biosensor screening analysis for florfenicol residues and its metabolites. These high quality publications help maintain the international reputation of the branch as a centre of excellence in veterinary drug residue analysis. Branch staff were also invited to speak at seminars and conferences as far afield as India and Mexico.

Disease Surveillance and Investigation Branch

The animal disease diagnostic service, operated by AFBI's Stormont and Omagh laboratories, helps to safeguard animal and public health and promote the competitiveness of the agri-food industry by identifying the causes of disease in submitted material. Surveillance for notifiable, zoonotic (transmissible to humans) and emerging diseases forms an important part of this work. The work undertaken includes post-mortem examinations of food producing species and an extensive range of clinical pathology tests.



Liver fluke in sheep was a continuing problem in the year.



The branch, along with colleagues in the Immunodiagnostic and Virology branches were involved in the investigation of a number of cases of infectious laryngotracheitis in poultry flocks. This virus can cause severe outbreaks of respiratory disease in previously uninfected flocks. Rapid identification of the virus by molecular testing and histological examination means that the disease can be differentiated from avian influenza and Newcastle disease, the presenting signs of which can be similar. Such identification is important for effective disease control.

Laboratory submissions during the year also highlighted continuing problems with liver fluke infection in sheep and the emerging problem of rumen fluke in cattle and sheep.

The third All-Island Animal Disease Surveillance Report (for the year 2012), prepared by VSD and the veterinary diagnostic laboratories operated by the Department of Agriculture Food and the Marine (DAFM) in Ireland, was published in September 2013. This is one of the actions agreed by DARD and DAFM under the All-island Animal Health and Welfare Strategy. Quarterly animal disease surveillance reports were also compiled and published in the *Veterinary Record* journal during the year.



Statutory work undertaken by the branch includes histological confirmation of bovine tuberculosis and transmissible spongiform encephalopathies and a surveillance scheme for *Echinococcus multilocularis* in foxes. *Echinococcus multilocularis* is a tapeworm parasite of foxes and dogs which can be transmitted to man, causing severe and potentially fatal disease. Although the UK and Ireland are currently considered free from this parasite, levels of infection in foxes in mainland Europe are increasing and there is expansion of the geographical range in which infected foxes have been found. This local surveillance is required by the EU to demonstrate the absence of this parasite from these islands, thus maintaining the requirements of the Pet Travel Scheme.

AFBI continues to offer a range of tests on a commercial basis to support industry animal disease control initiatives. These services include AFBI's Cattle Health Scheme, which is a voluntary scheme for the control of four of the most economically important endemic diseases of cattle i.e. bovine viral diarrhoea (BVD), infectious bovine rhinotracheitis (IBR), Johne's disease and leptospirosis. AFBI is also a designated laboratory for the testing of samples under the industry-led BVD eradication programme operated by Animal Health and

Welfare Northern Ireland and carried out a large volume of tests during the period.

Immunodiagnostic Branch

The work of the Immunodiagnostic Branch underpins several DARD animal disease statutory testing programmes including *Brucella abortus* eradication, surveillance for transmissible spongiform encephalopathies (TSE) and a range of other serology testing programmes that demonstrate ongoing disease freedom and support animal trade guarantees. In addition, the branch provides industry with serology testing across a range of agricultural species. Testing programmes are undertaken to international quality standards with the branch successful in a United Kingdom Accreditation Service audit of ISO 17025 accredited test methods in September 2013.

A major part of the work of the branch is in relation to brucellosis eradication. The high volume of serology testing undertaken by AFBI has been a significant factor in the progress made in recent years towards eradication, with the last culture-confirmed case of brucellosis occurring in March 2012. In April 2013 a computerised laboratory information management system was rolled out within the brucella serology unit enabling the laboratory to log, record and trace samples through the testing processes as well as report results electronically directly to DARD's Animal and Public Health Information System.



High volume serology testing in Immunodiagnostic Branch



Lambs at AFBI Hillsborough

In 2013/14 a single case of scrapie sheep was detected. It was subsequently confirmed as atypical scrapie.

The branch also responded to a number of emerging disease issues with increased serology testing in response to an outbreak of porcine respiratory and reproductive syndrome associated with infected semen. Testing was conducted with a rapid turnaround time for both NI and ROI customers in response to the disease threat.

Schmallenberg virus (SBV) is a vector-transmitted virus first described in Germany during 2011 and a cause of congenital abnormalities in cattle and sheep. The virus has rapidly spread across Europe with the first clinical cases were detected in Northern Ireland in October 2012. In July 2013, the branch undertook a serological survey on over 600 farms, on behalf of a commercial customer. Seropositive results were obtained for 11% of the farms tested with the highest prevalence of positive farms located in the south-east region. This finding is consistent with westerly spread from continental Europe via the biting midge insect vector.

The branch co-ordinates VSD's emergency response capability for diseases, such as avian influenza, Newcastle disease, bluetongue, foot-and-mouth disease, equine infectious anaemia, classical swine fever and African

swine fever. This work includes co-ordinating the development and review of contingency plans and the on-going development and maintenance of capability. As part of this work, it took part in an EU Food and Veterinary Office audit of UK Contingency Planning for Epizootic Diseases in November 2013.

Virology Branch

The work of Virology Branch aims to improve the diagnosis and control of viral diseases in farm animals and fish, in support of DARD policy objectives aimed at improving the health and welfare of Northern Ireland livestock. The Branch undertakes a range of statutory and analytical work in direct support of Northern Ireland animal and fish disease control programmes, and as required by European legislation. This work includes emergency response molecular diagnostic testing for major epizootic disease threats and post-import testing in support of DARD and the Northern Ireland agri-food sector. Its research programme includes work to develop or improve diagnostics for viral infections; to provide or improve vaccines for the control of viral diseases; and to investigate new disease syndromes of potential viral aetiology.

During the year the branch tested a large number of submissions for epizootic or emerging pathogens such as avian influenza, Newcastle disease virus, infectious



Salmon Station at Bushmills

laryngotracheitis, bluetongue virus, Schmallenberg virus and swine influenza virus on behalf of DARD as part of disease freedom, trade guarantees and scanning disease surveillance. The branch also conducted a large volume of testing on fish sources as part of DARD's programme of statutory testing of fish and shellfish, which is undertaken to monitor disease freedom status or detect notifiable pathogens.

Two research grant applications were submitted to the EU Horizon 2020 programme. One of these projects is on vaccines to control key production diseases of pigs and poultry while the second is on the control of parasite and associated diseases in farmed aquaculture species. Virology Branch staff were co-supervisors of three PhD studentships which were awarded during the year and which involved research into avian enteric diseases, porcine pleurisy and nano-particle vaccines for bovine respiratory disease. Presentations were made by Virology staff at a Northern Ireland Science Park (NISP) Frontiers in Science and Technology seminar, the Shanghai International Veterinary Public Health Symposium, EPIZONE conference in Brussels, the World Veterinary Poultry Association (WVPA) Congress, British Veterinary Poultry Association Spring Meeting in Harrogate and the Salmon Pancreas Disease (PD) Tri-Nations Meeting in Trondheim, Norway.



Nano-particle and virus analyser

In addition to its statutory and R&D commitments, the Virology Branch also provides a range of commercial testing and advice in support of both local industry and clients in other countries. During the year this work included specialised virology testing in relation to growth production problems in poultry flocks, outbreaks of infectious laryngotracheitis and molecular diagnostic testing for porcine reproductive and respiratory syndrome viruses.

Finance and Corporate Affairs Division (FCAD)



AFBI Hillsborough hosted the international 'Greenhouse Gases and Animal Agriculture' (GGAA) meeting in June 2013

Introduction

AFBI's Finance and Corporate Affairs Division (FCAD) is responsible for the management of AFBI's corporate functions. FCAD consists of AFBI Innovations, Biometrics and Information Systems Branch, Emergency Planning, Health & Safety and Estates Branch, Finance Branch, Human Resources Branch and the Secretariat and Coordination Unit.

FCAD takes the lead in supporting the Chief Executive and Accounting Officer in ensuring that good governance arrangements are in place. This includes coordinating the Institute's contact with the Board, its sub-committees and internal and external auditors.

AFBI has a Management Statement and Financial Memorandum with DARD that describes the governance arrangements under which it operates. These take account of The Agriculture (Northern Ireland) Order 2004 as well as Managing Public Money Northern Ireland. During the year DARD and AFBI completed a review of the current Management Statement and Financial Memorandum and an updated version was signed in November 2013.

A Memorandum of Understanding, which sets out the governance arrangements for the delivery of DARD's work programme, was finalised and signed in July 2012 and DARD and AFBI continued with the implementation of this during the year. DARD and AFBI also commenced

implementation of the improvement actions identified following an Arm's Length Body Risk Assessment by DARD's AFBI Sponsor Branch (see page 73).

The Secretariat and Coordination Unit provides support to the AFBI Board, its committees and the Executive Management Team. The Unit also provides support to a number of other corporate committees such as the Health and Safety Committee and the Risk Management and Business Planning Group.

More detailed information on the functions and achievements of FCAD is set out below.



Potato Event at AFBI Loughgall



Chairs and speakers at the AFBI Dairy conference: “Dairy Sector Growth Through Innovation” in March 2014

AFBI Innovations

AFBI Innovations supports AFBI staff in taking new discoveries from AFBI’s science base through the commercialisation process and to find markets for the Institute’s new services and inventions. The scope of AFBI Innovations also includes broader marketing, events and customer engagement, the management of the DARD-Assigned Work Programme and DARD Research Programme, the provision of legal support for licensing and contract management and the provision of support to AFBI staff in sourcing and securing research funding.

Key Services and Expertise

Business Development and Intellectual Property Exploitation

Supporting scientists to commercialise novel technologies and services through the development of Branch Business Development Plans and support for the commercialisation of specific inventions. AFBI Innovations seeks strategic partners and funding to bring new technologies to market. The unit works with staff to secure new business locally and internationally, with a focus on the North American market.

Corporate Marketing and Communications

Marketing and brand, event and media management. This includes the production of corporate promotional and scientific material and displays to promote AFBI’s activities and projects.

DARD and Key Public Sector Customer Management

DARD is managed as a priority customer through the DARD Business Manager. The DARD Business Manager coordinates the annual specification of services to be delivered to DARD under the Assigned Work Programme and monitors the delivery of services. The DARD Business Manager also works closely with DARD in managing the commissioning and oversight of the DARD Research Programme. The delivery of services to other key public sector customers is also supported.

Licensing and Contract Management

AFBI Innovations supports scientists by identifying commercialisation partners and negotiating and agreeing commercial agreements and contracts. The unit also provides support in managing and protecting Intellectual Property.

AFBI’s Research Support Office

The Research Support Office assists staff in seeking research funding from external sources. A key priority for 2013/14 was the EU’s Seventh Framework Programme for Research and Development and preparations for the first calls under Horizon 2020. The latter programme will run for six years with an estimated budget of €70 billion for research and innovation across Europe. The Northern Ireland Contact Point (NICP) for agri-food under Horizon 2020 is funded by DARD and based within AFBI, but works across Northern Ireland with both the private sector and researchers.



The DARD-funded Northern Ireland Contact Point for the European Union's Horizon 2020 programme is based at AFBI Headquarters

Key Customers / Sectors

AFBI Innovations is the "portal" for communication internally and externally, providing staff with a contact point for accessing commercialisation support and providing potential clients with an initial gateway into AFBI.

Key Achievements in 2013-2014 Year

- AFBI established a Four-Nation, Transatlantic Scientific Forum for Agri-food Research that will define priority areas for agri-food research between the USA, Canada, Northern Ireland and Ireland.
- Delivery of AFBI's first Dairy Conference
- Supported non-Grant in Aid income of £18.542 million for the year.
- Published 113 press articles and facilitated 26 media interviews

Biometrics & Information Systems Branch (BIS)

BIS became part of Finance and Corporate Affairs Division (FCAD) on 1 April 2013. BIS provides an integrated statistical and IT service in support of AFBI business areas and external customers, co-ordination of AFBI quality assurance and information management.

Key Services and Expertise

The BIS Statistics Unit provides statistical services including the design of experiments and surveys in relation to DARD research projects and external research contracts; the analysis, interpretation and reporting of scientific data; the co-ordination and maintenance of the

AFBI ISO9001 quality management system and internal training for Microsoft Office and data analysis.

The BIS Information Systems Unit develops interactive scientific applications for DARD and the agri-food industry; develops solutions for the efficient and secure management of AFBI scientific and business data; manages AFBI's intranet and internet sites; co-ordinates AFBI information management requirements including Freedom of Information (FOI) requests; maintains compliance with public sector data security and access requirements, accreditation of the AFBI IT infrastructure to NICS standards and backup and resilience for AFBI line-of-business IT systems.

During the year BIS developed a pollution monitoring web service for an EU funded aquatics project on pollution modelling in Belfast Lough; supported and enhanced the online database underpinning the industry-led program for eradication of bovine virus diarrhoea (BVD) virus from the cattle population and updated the PiGIS and BovIS online benchmarking tools developed for DARD and used by the pig, beef and dairy sectors.

BIS also provided direct support to DARD by completing a verification check on the Department's Land Parcel Identification System (LPIS) in order to insure compliance with the EC's regulatory requirements; launched the DARD CIA (carcase investigation analysis) online system for the pig industry; began work on a facility to channel archived DARD farm business survey data through online greenhouse gas (GHG) calculators to view trends of carbon footprint within the dairy and beef sectors; completed the integration of Food Standards Agency (FSA) surveillance software with AFBI's laboratory IT systems for DARD Agri-food Inspection Branch; supported DARD's farm business survey, pesticide usage surveys and timber production forecasting system; and provided statistics consultancy to DARD's Veterinary Service.

In addition BIS provided a wide range of support to AFBI corporate functions including renewal of AFBI IT Infrastructure accreditation and ISO 9001 certification; developed a dynamic staff organisational chart application with HR administration interface; launched a new AFBI staff outputs system with user-training sessions across AFBI; implemented Skype kiosks for researchers to aid collaboration; assisted with the development of online

questionnaires and surveys and with analysis of results; and enhanced the AFBI Bids & Income System budgeting tool to integrate with AFBI's new Strategic Cost Model.

BIS successfully co-ordinated AFBI's response to meeting the EU INSPIRE deadline for making national-level spatial datasets available for download and continued to create and update various aquatics databases aligned with the EU Data Collection Framework.

Emergency Planning, Safety & Estate Branch

The remit of the AFBI Emergency Planning, Safety & Estate Branch, a business unit of the Finance & Corporate Services Division is to deliver:

- an emergency planning capability for the Institute including Business Continuity Management and Incident Management with an input to delivery of the Emergency Response Capability (ERC) required of AFBI by DARD and other government departments/bodies;
- estate and property management services for the AFBI Estate across six sites; and
- Health and Safety advice.

The key customers of the Branch are the AFBI business units and associated administrative and scientific staff. In taking forward current responsibilities, the Branch works in close association with a range of stakeholders including Department of Agriculture and Rural Development, Department of Finance and Personnel, Northern Ireland Environment Agency, Health and Safety Executive for Northern Ireland, and the Northern Ireland Fire & Rescue Service.

Key Achievements in 2013-14

Estate Management: During 2013/14 a wide range of maintenance works were carried out across the AFBI occupied estate through the annual planned preventative maintenance programme, associated remedial works, reactive maintenance, and minor works projects. Examples of minor works projects included a major gas maintenance project across the AFBI estate; commencement of new asbestos survey programme for the estate; replacement of heating boilers at AFBI-Crossnacreevy; improvements to site security at AFBI-Hillsborough, Loughgall and Omagh; and refurbishment of the AFBI-Loughgall main entrance gates/pillars under the Historic Estate protocol.



Aerial shot of AFBI Hillsborough

The overall expenditure by DARD Estate Branch on the AFBI occupied estate for 2013/14 was £2,547k with further maintenance expenditure by the AFBI Estate Unit of £543k.

Emergency Planning: AFBI's emergency response capability (ERC) plans were reviewed and updated by the respective scientific business and additional plans were put in place. The 20 ERC plans detail how AFBI will respond to external emergencies on serious pests & plant health diseases, exotic pests and diseases on honey bees, epizootic diseases, fish diseases, shellfish contamination incidents, fish kills in freshwater, marine pollution incidents and food and animal feed incidents for customers including DARD, the Food Standards Agency, Department of Culture, Arts and Leisure and Northern Ireland Environment Agency.

During 2013/14 AFBI scientific staff provided significant input to the 2013 DARD ERC Review. The primary objective of the review was to determine DARD's emergency response capability needs and whether AFBI, as DARD's main service provider, could respond to meet these needs. AFBI scientific staff also responded to the action points recommended by the DARD ERC Working Group from the 2012 ERC Review.

In relation to incident management/business continuity AFBI has continued to work with the NI Fire & Rescue Service with site familiarisation visits being undertaken and scenario based exercises undertaken on the AFBI ship (RV *Corystes*) and at AFBI-Crossnacreevy.

Such exercises enable AFBI to determine the effectiveness of incident management arrangements in place and communication with NIFRS.

Health & Safety: The AFBI Health & Safety Unit provided the Institute with advice and guidance on relevant issues throughout the year. Adverse event statistics for the Institute continue to remain low with no significant increase in accidents from 2012/13.

The annual audit programme of laboratory and office accommodation takes a proactive approach to Health and Safety and aims to prevent foreseeable accidents and ill health conditions. During 2013/14 audits undertaken included AFBI-Stormont Chemical Surveillance Branch facilities and Disease Surveillance & Investigation Branch post-mortem, the AFBI-Hillsborough Agriculture Branch laboratory, AFBI-Newforge Plant Pathology building, and AFBI-Loughgall Deerpark farm.

Health & Safety training was provided largely via the AFBI e-learning Health & Safety training package.

Finance Branch

Finance Branch provides supports to AFBI's Executive Management Team and the wider organisation on financial management, governance and control issues. This includes financial planning, budgeting and accounting, strategic and business planning and financial systems.

AFBI continues to operate in an economic environment where budgets are under significant pressure and the requirement to grow sources of non Grant-in-Aid and improve efficiency increases year on year in order to enable AFBI to balance its budget and maintain the same levels of service delivery to DARD. This is increasingly difficult with the pressures on public sector finances.

Key Achievements in 2013-14

The maintenance of the high standards of financial management and corporate governance is of critical importance to the Finance and Corporate Affairs Division and its programme of continued improvement was maintained throughout the year.

During the year AFBI further developed its Strategic Cost Model which is a bespoke activity based cost model which enables AFBI to cost all of its individual activities.



AFBI also developed a Medium Term Financial Plan, a Desirable Asset Register, a Business Case / Post Project Evaluation database and a procurement contract database. Finance Branch also continued the development of its asset replacement plan

Human Resources

The Human Resource (HR) Branch provides strategic and operational support for the delivery of all personnel related functions to AFBI's Executive Management Team and its staff. AFBI's Terms and Conditions of employment follow those of the Northern Ireland Civil Service and AFBI's HR service has been structured in conjunction with the role of HRConnect.

“Exercise Shipshape”, Incident management exercise on the RV Corystes in conjunction with the Northern Ireland Fire and Rescue Service



HR Branch is made of four discrete business function sections:

- Employee Relations and Management of Attendance
- Workforce Planning and Pay Remits
- Learning & Development and Performance Management
- Equality and Equal Opportunities

In support of these services the Branch works with a range of stakeholders including AFBI Sponsor Branch in DARD, other core departments, Principal Civil Service Pensions Scheme, HRConnect, Occupational Health Service, Health & Safety Executive NI and the Equality Commission.

Key Achievements in 2013 – 14

Career Development: AFBI continues to promote opportunities for career development internally and during the course of this year 22 staff achieved promotion in a wide range of disciplines and grades.

One of AFBI’s strategic goals is to sustain and develop its knowledge base through attracting and investing in talented people. In support of this objective, AFBI’s Learning and Development Unit provide expert advice on learning and development opportunities covering the diverse range of skills required across the organisation. This Unit also administers AFBI’s Assistance to Study programme which has provided support for 33 staff this year in their pursuit of professional qualifications specific to AFBI’s business.

Recruitment: AFBI continues to develop its workforce in line with business aims. This has resulted in a total of 59 new appointments this year, covering various grades across the scientific, administrative and industrial disciplines.

Work Experience: AFBI continues to promote work experience opportunities for students at all levels to assist them in developing the key skills required to be successful in today’s working environment. 14 students in higher education were given the opportunity to develop key work-related skills through a relevant, supervised work placement programme. Work experience was also given to 120 students covering a range of areas within AFBI.

Sickness absence: AFBI was successful in reducing its sickness absence from 11.5 working days lost per full time equivalent in 2012/13 to 8.5 days in 2013/14.

Equality : AFBI’s revised Equality Scheme was approved by the Chief Commissioner of the Equality Commission for NI on 27th February 2013. The Scheme has been actively promoted on AFBI’s website and internally through the AFBI Intranet and its status is monitored quarterly by the AFBI Board.

Selected Scientific Publications

A selection of scientific publications by AFBI employees during 2013-14 are highlighted below:

Braceland, M., Bickerdike, R., Tinsley, J., Cockerill, D., McLoughlin, M., Graham, D., Burchmore, R., Weir, W., Wallace, C. The serum proteome of Atlantic salmon, *Salmo salar*, during pancreas disease (PD) following infection with salmonid alphavirus subtype 3 (SAV3). *Journal of Proteomics*, 2013, vol 94, p 423-436.

Gao B., Ju X., Su F, Meng Q., Oenema O., Christie P., Chen X., Zhang F. Nitrous oxide and methane emissions from optimized and alternative cereal cropping systems on the North China Plain: a two-year field study. *Science of the Total Environment*, 2014, vol 472, p112-124.

Birmingham, M.L., Bishop, S.C., Woolliams, J.A., Pong-Wong, R., Allen, A., McBride, S.H., Ryder, J.J., Wright, D.M., Skuce, R.A., McDowell, S.W.J., Glass, E.J. Genome-wide association study identifies novel loci associated with resistance to bovine tuberculosis. *Heredity*, 2013, vol 112, pp 543-551.

Wright, D.M., Allen, A. R, Mallon, T.R., McDowell, S.W., Bishop, S.C., Glass, E. J., Birmingham, M.L., Woolliams, J.A., Skuce, R.A. Field-isolated genotypes of *Mycobacterium bovis* vary in virulence and influence case pathology but do not affect outbreak size. *PLOS ONE*, 2013, vol 8, e74503. doi: 10.1371/journal.pone.0074503. eCollection 2013.

Lyons, G.A., McRoberts, W.C., Sharma, H.S.S., McCormack, R.A., Carmichael, E., McCall, R.D. Rapid analysis of purified cellulose extracted from perennial ryegrass (*Lolium perenne*) by instrumental analysis. *Bioresource Technology*, 2013, vol 146, p 184-191.

Kominoski, J.S., Follstad Shah, J.J., Canhoto, C., Fischer, D.G., Gilling, D., Gonzalez, E., Larranaga, A., Leroy, C.J., McElarney, Y., Shirley, S.M., Swan, C.M. Global patterns of change in plant communities at the riparian-aquatic interface. *Frontiers in Ecology and the Environment*, 2013, vol 11, pp 423-432.

Davis, J., Caskie, P., Wallace, M. How effective are new entrant schemes for farmers? Wie wirksam sind Programme für neue Marktteilnehmer bei Landwirten? *EuroChoices*, 2013, vol 12, pp 32-37.

Burns G.A., Gilliland, T. J., Grogan, D., Watson, S., O'Kiely, P. Assessment of herbage yield and quality traits of perennial ryegrasses from a national variety evaluation scheme. *Journal of Agricultural Science*, 2013, vol 151, pp 331-346.

Terence L. Fodey, T.L., George, S. E., Traynor, I.M., Delahaut, P., Kennedy, D., G., Elliott, C.T., Crooks, S.R.H. Approaches for the simultaneous detection of thiamphenicol, florfenicol and florfenicol amine using immunochemical techniques. *Journal of Immunological Methods*, 2013, vol 393, pp 30-37.

Jiao, H., Yan, T, Wills D.A., Carson, A. F., McDowell, D. A. Development of prediction models for quantification of total methane emission from enteric fermentation of young Holstein cattle at various ages. *Agriculture, Ecosystems and Environment*, 2014, vol 183, pp 160-166.

Campbell, K., Barnes, P., Haughey, S.A., Higgins, C., Kawatsu, K., Vasconcelos, V., Elliott, C. T. Development and single laboratory validation of an optical biosensor assay for tetrodotoxin detection as a tool to combat emerging risks in European seafood. *Analytical and Bioanalytical Chemistry*, 2013, vol 405, pp 7753-7763.

Thompson, J., Cassidy, R., Doody, D.G., Flynn, R. Predicting critical source areas of sediment in headwater catchments. *Agriculture, Ecosystems and Environment*, 2013, vol 179, pp 41-52.

Aliani, M., Farmer, L.J., Kennedy, J.T., Moss, B.W., Gordon, A. Post-slaughter changes in ATP metabolites, reducing and phosphorylated sugars in chicken meat. *Meat Science*, 2013, Vol 94, pp 55-62.

- Thompson, G.M., Jess, S., Murchie, A.K. Differential emergence of *Culicoides* (Diptera: Ceratopogonidae) from on-farm breeding substrates in Northern Ireland. *Parasitology*, 2013, vol 140, pp 699-708.
- Quinn, L., O'Neill, P.A., Harrison, J., Paskiewicz, K.H., McCracken, A.R., Cooke, L.R., Grant, M.R., Studholme, D.J. Genome-wide sequencing of *Phytophthora lateralis* reveals genetic variation among isolates from Lawson cypress (*Chamaecyparis lawsoniana*) in Northern Ireland. *FEMS Microbiology Letters*, 2013, vol 344, pp 179–185.
- McConnell, D. A, Doody, D.G, Elliott, C.T., Matthews, D.I., Ferris, C.P. The impact of herbage re-growth interval on phosphorus losses in runoff post slurry application. *Agriculture, Ecosystems and Environment*, 2013, vol 178, pp 100-108.
- Kavanagh, O.V., Adair, B.M, Welsh, M.D., Earley, B. Local and systemic immune responses in mice to intranasal delivery of peptides representing bovine respiratory syncytial virus epitopes encapsulated in poly (dl-lactide-co-glycolide) microparticles. *Research in Veterinary Science*, 2013, vol 94, pp 809-812.
- Qiu, S.-J., Ju, X.-T., Ingwersen, J., Guo, Z.-D., Stange, C.,F., Bisharat, R., Streck, T., Christie, P., Zhang, F.,S. Role of carbon substrates added in the transformation of surplus nitrate to organic nitrogen in a calcareous soil. *Pedosphere*, 2013, vol 23, pp 205-212.
- Zhou, W., Hu, C.-S., Li, J., Christie, P., He, X.-H., Ju, X.-T. Natural ^{15}N abundance in winter wheat amended with urea and compost: A long-term experiment . *Pedosphere* 2013. vol 23, pp 835-843.
- Palmer, M.A., Donnelly, R.F., Garland, M.J., Majithija, R., O'Connell, N.E. The effect of slurry on skin permeability to methylene blue dye in dairy cows with and without a history of digital dermatitis. *Animal*, 2013, vol 7, pp 1731-1737.
- Keenan, K., McGinnity, P., Cross, T.F., Crozier, W.W., Prodöhl, P.A. diveRsity: An R package for the estimation and exploration of population genetics parameters and their associated errors. *Methods in Ecology and Evolution*, 2013, vol, pp 782–788.
- Keenan, K., Bradley, C.R., Magee, J.J., Hynes, R.A., Kennedy, R.J., Crozier, W.W., Poole, R., Cross, T.F., McGinnity, P., Prodöhl, P.A. Beaufort trout MicroPlex: a high-throughput multiplex platform comprising 38 informative microsatellite loci for use in resident and anadromous (sea trout) brown trout *Salmo trutta* genetic studies. *Journal of fish Biology*, 2013, vol 82, pp 1789–1804.
- Ensing, D., Crozier, W.W., Boylan, P. An analysis of genetic stock identification on a small geographical scale using microsatellite markers, and its application in the management of a mixed-stock fishery. *Journal of Fish Biology*, 2013, vol 82, pp 2080–2094.



REMUNERATION REPORT



Chairman and Board Members

The Chairman is appointed for a fixed period of four years, the Deputy Chair for three years and the Board members are appointed for a fixed period of three or four years. Thereafter they are re-appointed in accordance with the Code of Practice.

The remuneration of the Board is set by DARD. Increases are calculated in line with the recommendations of the Senior Salaries Review Body. There are no arrangements in place for the payment of a bonus. Neither the Chairman nor any Board Member receives pension contribution from AFBI or DARD.

AFBI reimburses the Chairman and Board members for any incidental expenses incurred for carrying out their duties relevant to the organisation.

Details of remuneration of the Chairman and Board Members (Audited)

In 2013/2014, the remuneration for members of the Board was –

	2013/2014*				2012/2013*			
	Salary (to nearest £'000)	Benefits in kind (to nearest £100)	Pension Benefits (to nearest £1,000)	Total (to nearest £1,000)	Salary (to nearest £'000)	Benefits in kind (to the nearest £100)	Pension Benefits (to nearest £1,000)	Total (to nearest £1,000)
Mr Seán Hogan, Chairman CEO	20-25	-	-	20-25	20-25	-	-	20-25
Prof William McKelvey	10-15	-	-	10-15	10-15	-	-	10-15
Mr Trevor Hinds	0-5	-	-	0-5	0-5	-	-	0-5
Mr Seamus McCaffrey	0-5	-	-	0-5	5-10	-	-	5-10
Mr Alan McKeown	0-5	-	-	0-5	0-5	-	-	0-5
Mrs Hilda Stewart	0-5	-	-	0-5	5-10	-	-	5-10
Mr Bob McCann	5-10	-	-	5-10	0-5	-	-	0-5
Mrs Hilary McCartan	0-5	-	-	0-5	5-10	-	-	5-10
Prof Patrick Murphy	0-5	-	-	0-5	0-5	-	-	0-5

	2013/2014*				2012/2013*			
Dr Cecil McMurray	0-5	-	-	0-5	0-5	-	-	0-5
Mrs Sarah Havlin	5-10	-	-	5-10	0-5	-	-	0-5
Mr David Lindsay	0-5	-	-	0-5	0-5	-	-	0-5
Mr Ken Millar	0-5	-	-	0-5	0-5	-	-	0-5

* The figures quoted above relate to payments made for 2012-13 and 2013-14. A business case was submitted to DARD in relation to additional payments of £14,868 (2012-13) and £939 (2013-14). The business case was approved on 17 May 2014.

Mr Alan McKeown resigned from his term of office on 28 August 2013. His position on the Board was not replaced.

Mr Seán Hogan completed his term of office on 31 March 2014. Colm McKenna was appointed as Chairman on 14 April 2014.

Sub-committees of the Board

The following sub-committees continued to operate during the year and members received the noted remuneration for sitting on these committees (included within total remuneration disclosed in the table above):

Audit Committee

Mr Bob McCann, Chair	£1,690
Mr Trevor Hinds	£1,064
Mrs Sarah Havlin	£1,690

The Audit Committee advises the Board on the issues of risk, control and governance. The Accounting Officer, Head of Finance & Corporate Affairs, Head of Finance, representatives from internal and external audit and DARD's AFBI Sponsor Branch were generally in attendance at Audit Committee meetings.

Organisational Development & HR Committee

Prof. William McKelvey, Chair*	-
Prof. Patrick Murphy	£939
Mr Ken Millar	£939

* Prof William McKelvey, Deputy Chair of AFBI Board does not receive any remuneration for chairing the meetings of the Organisational Development & HR Committee.

The Organisational Development & HR Committee advises the Board on the remuneration of Executive Management Team (EMT) and provides recommendations to the Board on the implementation of AFBI's Rewards to Staff scheme. Whilst the terms and conditions of employment and remuneration of all AFBI employees are in accordance with the overall terms and conditions of the NICS, any proposed changes to the overall framework are also subject to review and scrutiny by this Committee. The Accounting Officer and the Head of Finance & Corporate Affairs generally attended the Organisational Development & HR Committee meetings.

Science Strategy Committee

Mr David Lindsay, Chair	£1,252
Dr Cecil McMurray	£1,252
Mr Alan McKeown	£0

The Science Strategy Committee guides the Executive in developing a Science Strategy for AFBI. This includes assisting EMT to prioritise existing areas of scientific work and identify strategic scientific areas or technologies in which AFBI should potentially become engaged.

Finance Committee

Mrs Hilary McCartan, Chair	£1,252
Mrs Hilda Stewart	£1,252
Mr Seamus McCaffrey	£1,252

The Finance Committee supports the Board in discharging its responsibilities for the oversight of financial management including, in particular, the review of financial plans and budget monitoring. The Accounting Officer, Head of Finance & Corporate Affairs and Head of Finance were generally in attendance.

Chief Executive and Executive Management Team

Remuneration Policy

The remuneration of senior civil servants is set by the Minister for Finance and Personnel. The Minister approved a restructured SCS pay settlement broadly in line with the Senior Salaries Review Board report which he commissioned in 2010. The commitment to a Pay and Grading Review for SCS was the second phase of the equal pay settlement approved by the Executive.

Service contracts

Appointments in AFBI are made in accordance with the Civil Service Commissioners' Recruitment code which requires appointments to be made on merit on the basis of fair and open competition but also includes the circumstances when appointments may otherwise be made.

Unless otherwise stated below, the officials covered by this report hold appointments which are open-ended. Early termination, other than for misconduct, would result in the individual receiving compensation as set out in the Civil Service Compensation Scheme.

Further information about the work of the Civil Service Commissioners can be found at www.nicscommissioners.org

Salary and Pension Entitlements

The following sections provide details of the remuneration and pension interests of the Executive Management Team of AFBI.

Remuneration (including salary) and pension entitlements (Audited)

	2013/2014				2012/2013			
	Salary £'000	Benefits in kind (to nearest £100)	Pension Benefits** (to nearest £1,000)	Total (to nearest £1,000)	Salary £'000	Benefits in kind (to the nearest £100)	Pension Benefits** (to nearest £1,000)	Total (to nearest £1,000)
Prof S Kennedy, CEO	80 - 85	-	31,000	110 - 115	80 - 85	-	4,000	80 - 85
Dr M Camlin, DCEO ¹	-	-	-	-	35 - 40 (70-75 full year equivalent)	-	-	35 - 40 (70-75 full year equivalent)
Dr D Bryson DCEO ² (Acting)	-	-	-	-	10 - 15 (70-75 full year equivalent)	-	-	10 - 15 (70-75 full year equivalent)
Mr J Ferguson ³ Head of Corporate Services (Acting)	-	-	-	-	50 - 55 (60-65 full year equivalent)	-	-	50 - 55 (60-65 full year equivalent)
Dr J Davis DCEO ⁴ (Acting)	-	-	-	-	15 - 20 (65-70 full year equivalent)	-	-	15 - 20 (65-70 full year equivalent)

	2013/2014				2012/2013			
Dr W Crozier ⁴ DCEO (Acting)	-	-	-	-	25 – 30 (65-70 full year equivalent)	-	-	25 – 30 (65-70 full year equivalent)
Dr A Carson ⁴ DCEO (Acting)	-	-	-	-	5 – 10 (60-65 full year equivalent)	-	-	5 – 10 (60-65 full year equivalent)
Dr D G Kennedy ⁵ DCEO (Acting)	-	-	-	-	55 – 60 (65-70 full year equivalent)	-	-	55 – 60 (65-70 full year equivalent)
Dr S Mayne ⁶ DCEO	65 - 70	-	0	65 - 70	5 – 10 (65-70 full year equivalent)	-	0	5 – 10 (65-70 full year equivalent)
Dr S McDowell ⁷ DCEO	60 - 65	-	22,000	85 - 90	5 – 10 (60-65 full year equivalent)	-	2,000	5 – 10 (60-65 full year equivalent)
Mrs L Hogg ⁸ DCEO	60 - 65	-	24,000	85 - 90	10 – 15 (60-65 full year equivalent)	-	5,000	10 – 15 (60-65 full year equivalent)
Band of Highest Paid Director's Total Remuneration	80-85				80-85			
Median Total Remuneration	26,147				26,158			
Ratio***	3.16				3.15			

¹Dr Camlin partially retired with effect from September 2010, then went on full retirement from September 2013. During 2013-14 Dr Camlin did not hold a position within the Executive Management Team.

²Dr David Bryson retired on 12 May 2012.

³Mr Joel Ferguson was Acting DCEO from 12 December 2009 to 31 January 2013.

⁴Dr John Davis, Dr Walter Crozier and Dr Alistair Carson shared the duties of DCEO from 10 October 2011 until 28 February 2013.

⁵Dr D Glenn Kennedy was Acting DCEO from 6 April 2012 to 31 January 2013.

⁶Dr Sinclair Mayne was appointed Sustainable Agri-Food Sciences Division DCEO on 4 March 2013.

⁷Dr Stanley McDowell was appointed Veterinary Sciences Division DCEO on 25 February 2013.

⁸Mrs Lesley Hogg was appointed Finance and Corporate Affairs Division DCEO on 21 January 2013.

***The value of pension benefits accrued during the year is calculated as (the real increase in pension multiplied by 20) plus (the real increase in any lump sum) less (the contributions made by the individual). The real increases exclude increases due to inflation or any increase or decreases due to a transfer of pension rights.

***The banded remuneration of the highest paid director in AFBI in the financial year 2013-14 was £80-85k (2012-13, £80-85k). This was 3.16 times (2012-13, 3.15) the median remuneration of the workforce, which was £26,147 (2012-13, £26,158). In 2013-14, 3 (2012-13, 0) employees received remuneration in excess of the highest-paid director. Remuneration ranged from £1k to £99k (2012-13, £4k to £72k). Total remuneration includes salary, non-consolidated performance-related pay and benefits-in-kind. It does not include severance payments, Rewards to Staff payments, employer pension contributions and the cash equivalent transfer value of pensions.

Off-Payroll Payments

During the 2013-14 year there was one off-payroll engagement in place which cost over £58,200 per annum. This engagement was in place on 1 April 2013 and remained in place at 31 March 2014.

Salary:

Salary includes gross salary, overtime and any other allowance to the extent that it is subject to UK taxation and any gratia payments.

Benefits in kind:

The monetary value of benefits in kind covers any benefits provided by the employer and treated by HM Revenue and Customs as a taxable emolument.

Pension Entitlements (Audited):

Name	Accrued pension at pension age as at 31/3/14 and related lump sum	Real increase in pension and related lump sum at pension age	CETV at 31/3/14	CETV at 31/3/13	Real increase in CETV	Employer contribution to partnership pension account
	£'000	£'000	£'000	£'000	£'000	£'000
Prof S Kennedy	35-40 plus lump sum 105-110	0-2.5 plus lump sum 2.5-5	797	698	30	-
Dr S Mayne	30-35 plus lump sum 90-95	0-2.5 plus lump sum 0-2.5	636	595	(1)	-
Dr S McDowell	20-25 plus lump sum 30-35	0-2.5 plus lump sum 0-2.5	375	336	15	-
Mrs L Hogg	0-5	0-2.5	17	3	9	-

Notes: Figures in brackets are negative.

Northern Ireland Civil Service (NICS) Pension arrangements

Pension benefits are provided through the Northern Ireland Civil Service pension arrangements which are administered by Civil Service Pensions (CSP). Staff in post prior to 30 July 2007 may be in one of three statutory based 'final salary' defined benefit arrangements (classic, premium, and classic plus). These arrangements are unfunded with the cost of benefits met by monies voted by Parliament each year. From April 2011 pensions payable under classic, premium, and classic plus are increased annually in line with changes in the Consumer Prices Index (CPI). Prior to 2011, pensions were increased in line with changes in the Retail Prices Index (RPI). New entrants joining on or after 1 October 2002 and before 30 July 2007 could choose between membership of premium or joining a good quality 'money purchase' stakeholder arrangement with a significant employer contribution (partnership pension account). New entrants joining on or after 30 July 2007 are eligible for membership of the nuvos arrangement or they can opt for a partnership pension account. Nuvos is a 'Career Average Revalued Earnings' (CARE) arrangement in which members accrue pension benefits at a percentage rate of annual pensionable earnings throughout the period of scheme membership. The current rate is 2.3%. CARE pension benefits are increased annually in line with increases in the CPI. For 2014, public service pensions will be increased by 2.7% for pensions which began before 8 April 2013. Pensions which began after 8 April 2013 will be increased proportionately.

Employee contributions are determined by the level of pensionable earnings. The employee contribution rates for the 2014/15 year are as follows:

Members of classic:

Annual pensionable earnings (full-time equivalent basis)	2014 contribution rate before tax relief
Up to £15,000	1.50%
£15,001-£21,000	3.00%
£21,001-£30,000	4.48%
£30,001-£50,000	5.27%
£50,001-£60,000	6.06%
Over £60,000	6.85%

Members of premium, nuvos and classic plus:

Annual pensionable earnings (full-time equivalent basis)	2014 contribution rate before tax relief
Up to £15,000	3.50%
£15,001-£21,000	5.00%
£21,001-£30,000	6.48%
£30,001-£50,000	7.27%
£50,001-£60,000	8.06%
Over £60,000	8.85%

Benefits in classic accrue at the rate of 1/80th of pensionable salary for each year of service. In addition, a lump sum equivalent to three years' pension is payable on retirement. For premium, benefits accrue at the rate of 1/60th of final pensionable earnings for each year of service. Unlike classic, there is no automatic lump sum (but members may give up (commute) some of their pension to provide a lump sum). Classic plus is essentially a variation of premium, but with benefits in respect of service before 1 October 2002 calculated broadly as per classic.

The partnership pension account is a stakeholder pension arrangement. The employer makes a basic contribution of between 3% and 12.5% (depending on the age of the member) into a stakeholder pension product chosen by the employee. The employee does not have to contribute but where they do make contributions, the employer will match these up to a limit of 3% of pensionable salary (in addition to the employer's basic contribution). Employers also contribute a further 0.8% of pensionable salary to cover the cost of centrally-provided risk benefit cover (death in service and ill health retirement).

The accrued pension quoted is the pension the member is entitled to receive when they reach pension age, or immediately on ceasing to be an active member of the scheme if they are at or over pension age. Pension age is 60 for members of classic, premium, and classic plus and 65 for members of nuvos. Further details about the CSP arrangements can be found at the website www.dfpni.gov.uk/civilservicepensions-ni.

Cash Equivalent Transfer Values

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a particular point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme. A CETV is a payment made by a pension scheme or arrangement to secure pension benefits in another pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in their former scheme. The pension figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The CETV figures, and from 2003-04 the other pension details, include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the CSP arrangements. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost. CETVs are calculated in accordance with The Occupational Pension Schemes (Transfer Values) (Amendment) Regulations and do not take account of any actual or potential benefits resulting from Lifetime Allowance Tax which may be due when pension benefits are taken.

Real increase in CETV

This reflects the increase in CETV effectively funded by the employer. It does not include the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement) and uses common market valuation factors for the start and end of the period.

Compensation for loss of office

No compensation has been paid to senior officers by AFBI during the year for loss of office.

AFBI's accounting policy in respect of pensions is at Note 1 to the accounts.



Professor Seamus Kennedy MVB PhD MRCVS FRCPath
Chief Executive and Accounting Officer

Date: 6 November 2014

Governance Statement

1. Scope and Responsibility

I am pleased to introduce the Governance Statement for the year ended 31 March 2014.

AFBI was established on 1 April 2006 under the Agriculture (Northern Ireland) Order 2004 as a Non-Departmental Public Body (NDPB) of the Department of Agriculture and Rural Development (DARD). As Accounting Officer I am responsible for managing and controlling the resources used in the Institute, in accordance with the responsibilities assigned to me in *Managing Public Money Northern Ireland*. The Governance Statement sets out the governance, risk management and internal control arrangements that operated in AFBI during the financial year to assist me in discharging this stewardship role.

The governance structures and processes, risk management and internal controls during the year were effective. During the year there was a continued focus on strengthening governance arrangements and internal controls through the implementation of recommendations resulting from an independent strategic business review of AFBI which concluded in March 2012, internal and external audit recommendations and improvement actions identified following an Arm's Length Body Risk Assessment carried out by DARD.

DARD and AFBI also completed a review of the Management Statement and Financial Memorandum which sets out the broad framework under which AFBI operates and signed a revised version in November 2013.

The Northern Ireland Audit Office published 'The Agri-Food and Biosciences Institute (AFBI)' report on 12 September 2013 and the Public Accounts Committee published a 'Report on The Agri-Food and Biosciences Institute (AFBI)' on 19 March 2014. These included recommendations in the areas of efficiency, unit costs, benchmarking, costing and charging and Research & Development project management.

A Memorandum of Reply to the Public Accounts Committee report, 'Department of Finance and Personnel Memorandum on the Nineteenth and Twentieth Reports from the Public Accounts Committee Mandate 2011-2015 – The Agri-Food and Biosciences Institute (AFBI) and PSNI: Use of Agency Staff' was presented to the Northern Ireland Assembly by the Minister of Finance and Personnel on 23 May 2014. Implementation of the recommendations has commenced and these will be a significant area of focus for 2014/15.

2. Governance Arrangements

Governance Framework

AFBI's governance framework sets out the roles, responsibilities and procedures for the effective and efficient conduct of the organisation's business. AFBI is committed to governance excellence and to be accountable and transparent for its decisions and activities.

Governance Structure

The DARD Minister is responsible and answerable to the Northern Ireland Assembly (the Assembly) for the exercise of the powers on which the administration of the Department depends. The DARD Minister has a duty to the Assembly to account, and be held to account, for the policies, decisions and actions of the Department including AFBI as one of its NDPBs.

While in practice NDPBs operate with some independence and are not under day-to-day ministerial control, ministers are nevertheless ultimately accountable to the Assembly for NDPBs' activities and performance. This is because they are responsible for NDPBs' founding legislation; have influence over NDPBs' strategic direction; appoint their boards; and have the ultimate sanction of abolition or reform subject to the Executive's approval where this requires a change in statute.

DARD's Permanent Secretary is appointed as DARD's Departmental Accounting Officer by the Department of Finance and Personnel. AFBI Sponsor Branch is a part of the DARD's Policy and Economics Division and is responsible for managing the overall relationship between DARD and AFBI. AFBI Sponsor Branch holds monthly Finance and Governance meetings and quarterly Accountability Meetings with AFBI as part of its governance oversight.

DARD's Departmental Accounting Officer in turn has designated me as the Accounting Officer for AFBI. As Accounting Officer I am personally responsible for safeguarding the public funds for which I have charge; for ensuring propriety and regularity in the handling of those public funds; and for the day-to-day operations and management of AFBI.

In fulfilling my duties as AFBI's Accounting Officer I was supported by my Executive Management Team (EMT) and a Board. EMT consists of the Directors of the Finance and Corporate Affairs Division, the Sustainable Agri-Food Food Sciences Division and the Veterinary Sciences Division.

The Board

During the year AFBI's Board consisted of 13 Non Executive Members appointed by the DARD Minister. Appointments are made in line with the Code of Practice issued by the Commissioner for Public Appointments Northern Ireland. The Board fulfils its responsibilities by establishing the overall strategic direction of AFBI and by challenging the EMT in business planning, target setting and the delivery of performance against agreed targets.

The main responsibilities of the Board are to ensure that AFBI fulfils the aims and objectives set by DARD and approved by the DARD Minister; monitoring AFBI's compliance with applicable law and policy; and for promoting the efficient, economic and effective use of staff and other resources by AFBI. The attendance of members at Board meetings during the year was as follows:

AFBI Board	Number of meetings the member could have attended	Number of meetings attended
Mr Seán Hogan (Chair)	11	9
Prof. Bill McKelvey (Deputy Chair)	11	9
Mrs Sarah Havlin	11	7
Mr Trevor Hinds	11	10
Mr David Lindsay	11	11
Mr Seamus McCaffrey	11	9
Mr Bob McCann	11	10
Mrs Hilary McCartan	11	11
Mr Alan McKeown*	5*	0*
Dr Cecil McMurray	11	10
Mr Ken Millar	11	9
Prof. Patrick Murphy	11	11
Mrs Hilda Stewart	11	8

*Mr Alan McKeown resigned on 28 August 2013
Members of EMT were present at all meetings.

Board Sub-Committees

All decision-making powers are reserved to the Board, although four sub-committees and a working group operated in an advisory capacity. Details of these are set out below.

The **Audit Committee** advises the Board on issues of risk, control and governance. Membership and attendance was as follows:

Audit Committee	Number of meetings the member could have attended	Number of meetings attended
Mr Bob McCann (Chair)	6	6
Mrs Sarah Havlin	6	6
Mr Trevor Hinds	6	4

The Director of Finance and Corporate Affairs Division, Head of Finance, representatives from internal and external audit, DARD's AFBI Sponsor Branch and I were generally in attendance at Audit Committee meetings

The **Finance Committee** supports the Board in discharging its responsibilities for oversight of financial management including the review of financial plans and budget monitoring. The Finance Committee reviewed the interim and final accounts, prior to submission to the Audit Committee, to provide the Board with the assurance that it could authorise me to sign the accounts on their behalf. Membership and attendance was as follows:

Finance Committee	Number of meetings the member could have attended	Number of meetings attended
Mrs Hilary McCartan (Chair)	5	5
Mr Seamus McCaffrey	5	5
Mrs Hilda Stewart	5	5

The Director of Finance and Corporate Affairs, the Head of Finance and I were generally in attendance.

The **Organisational Development & Human Resources Sub-Committee** (formerly known as the Appointments and Remuneration Committee) advises the Board on organisational development and human resources matters within AFBI, and supports the Board's programme of Change Management. Membership and attendance were as follows:

Organisational Development and Human Resources Sub -Committee	Number of meetings the member could have attended	Number of meetings attended
Prof. Bill McKelvey (Chair)	3	3
Mr Ken Millar	3	3
Prof. Patrick Murphy	3	3

The Director of Finance and Corporate Affairs, Head of Human Resources and I generally attended the Appointments and Remuneration Committee meetings.

The [Science Strategy Committee](#) assisted the Executive in developing a Science Strategy for AFBI. This included the identification of a range of key scientific skills and technologies which AFBI should maintain and develop strength. Membership and attendance were as follows:

Science Strategy Committee	Number of meetings the member could have attended	Number of meetings attended
Mr Alan McKeown (Chair)*	2*	0*
Mr David Lindsay (Chair)**	4	4
Dr Cecil McMurray	4	4

* Mr Alan McKeown resigned on 28 August 2013.

** Mr David Lindsay was appointed Chair following the resignation of Mr Alan McKeown.

The Director of Sustainable Agri-Food Food Sciences Division, the Director of Veterinary Sciences Division and I generally attended the Science Strategy Committee meetings.

The [AFBI Operating Model Working Group](#) was tasked with developing and commissioning analysis and advice to support the implementation of the commercialisation and financial flexibility recommendations contained in an independent Strategic Business Review of AFBI report received in March 2012. Membership and attendance were as follows:

Operating Model Working Group	Number of meetings the member could have attended	Number of meetings attended
Prof. Bill McKelvey (Chair)	2	2

The working group also consisted of AFBI's CEO, Director of Finance and Corporate Affairs and Head of Innovations, DARD's Senior Sponsor and Finance Director, and a representative from the Strategic Investment Board.

Board Performance

AFBI's Board reviewed its performance and commenced a self assessment effectiveness review in February 2014 under the direction of its Chair, Mr Seán Hogan. The review was concluded in May 2014 under the direction of Mr Colm McKenna, who was appointed Chair in April 2014, following the cessation of the tenure of Mr Seán Hogan in March 2014.

The review focussed on purpose and outcomes, roles and responsibilities, values and governance, decision making and risk management, Board capacity and structure, stakeholder accountability and communication. The Board considered that its performance was effective but is constantly striving to improve.

The Board reaffirmed that its role was to set the strategic direction of the organisation, provide constructive challenge, ensure robust governance, hold the EMT to account, set the tone of the organisation, ensure that relations with stakeholders are managed effectively and that it was answerable to the DARD Minister. The review indicated that the Board clearly understood its role and strategic priorities and that it promoted high standards of governance, risk and financial management and a culture of performance and delivery.

The Board identified a number of areas of focus to further improve the effectiveness of Board including stakeholder engagement, Board appraisal and Board development and these will be progressed during 2014/15.

All of the actions from the 2012/13 Board effectiveness review have now been completed.

Quality of Information used by the Board

The quality of information provided to the Board is highly relevant and of a high standard and Executive, financial, Whistleblowing and Risk Register reports are provided on a regular basis. The Board is satisfied with the format, content and quality of the information it has received.

Compliance with 'Corporate Governance Code'

As the Accounting Officer of a Non-Departmental Public Body of a Northern Ireland department, DAO (DFP) 06/13 requires that I am required to report compliance with the HM Treasury's "Corporate governance in central government departments: Code of good practice" published in 2013 (the 2013 Corporate Governance Code). I confirm that AFBI is compliant with the 2013 Corporate Governance Code.

Conflicts of Interest

On appointment, Board Members are required to provide a list of all interests which might give rise to a conflict of interest. At every Board and sub-committee meeting a standing agenda item on declarations of interest is included and brought to the attention of the members by the Chair. Board papers are not circulated to members who have declared or are deemed to have a specific conflict of interest. Where a conflict of interest is declared, it is recorded and the relevant member(s) leave the Board meetings for the specific agenda item.

There is one ongoing conflict of interest which was managed in line with this agreed procedure and relates to a legal claim of which I am a potential beneficiary. One of the Board Members is also conflicted in this matter.

3. Risk Management

Risk Management Framework & Structure

AFBI has a well embedded and robust risk management and internal control framework in place with direct involvement of EMT. In June 2013 AFBI identified an additional risk in respect of the failure to recruit, retain and motivating staff and added this to the Corporate Risk Register. AFBI's Risk Management Strategy was reviewed and updated in January 2014. The Risk Management Strategy sets out the roles, responsibilities, procedures and risk appetite for Risk Management within AFBI and these are set out in Appendix A.

Risk Management is a standing agenda item for Board and Audit Committee meetings and AFBI's Risk Register is reviewed by both meetings on approximately a quarterly basis.

The Board also reviews one of the risks in detail on a cyclical basis. DARD and AFBI's internal and external auditors attend Audit Committee meetings and therefore provide a further layer of external scrutiny and challenge.

Information Risk

AFBI's approach to the management of information security risks is proportionate to the nature of the risks and the comparatively limited amount of personal or sensitive information handled by AFBI and its delivery network. As AFBI's Senior Information Risk Owner I have received assurances from the Senior Responsible Owner (SRO) (AFBI Head of IT) that the information governance policy framework is effective and that adequate controls and measures are in place to enable AFBI's information systems to withstand threats to their confidentiality, integrity and availability. There have been no reported significant data losses in the course of the year. A number of information governance gaps have however been identified, as noted under the Stewardship Reports section of Internal Controls (section 4 below), and these will be progressed during 2014/15.

The SRO has based his statement on the assurances received by him from AFBI's IT Security Officer (Head of IT Infrastructure and Support) in relation to IT security accreditation and where IT legislative compliance is concerned, he has depended on AFBI's Data Protection Officer & Freedom of Information Co-ordinator.

Sponsor Branch Risk Assessment

During the previous year DARD completed a risk assessment of AFBI's activities which is designed to improve DARD's oversight of AFBI. A total of 18 improvement actions have been identified for DARD and AFBI. As of May 2014, 9 of the actions have been completed, 1 is no longer required and 8 are in progress.

4. Internal Controls

An important element of the risk management framework is the system of internal control. This is designed to manage AFBI's risks to a reasonable level, rather than to eliminate all risk of failure to achieve aims and objectives. It can therefore only provide reasonable and not absolute assurance of effectiveness. A system of internal control was in place throughout the year and is in accordance with guidance defined in *Managing Public Money Northern Ireland*.

Stewardship Reports

I obtained additional assurance through stewardship reports provided to me by AFBI's Executive Directors. I in turn provide a Stewardship Report to the DARD Permanent Secretary. My Stewardship Report confirmed that the necessary internal controls were in place to provide reasonable assurance in the areas of operations, management information, safeguarding of assets, compliance with laws and regulations and risk management subject to a number of information governance gaps such as the lack of a document management system and the fact that not all staff routinely back up information stored on their PCs and subject to the fact that AFBI is not yet in full compliance with elements of the Data Protection and Bribery Act for example training of all staff on Data Protection, compliance checks, and appointment of an Anti-Bribery Officer. These weaknesses will be progressed during 2014/15.

Financial Management

AFBI's system of internal financial control is based on a framework of financial information, financial procedures, segregation of duties and a system of delegation and accountability. These include annual budgeting, in year forecasting, corporate budget monitor reports and divisional and branch reports.

All cases of actual or suspected fraud and whistle-blowing incidents that came to my attention during the year were reported to DARD's Principal Accounting Officer, the Comptroller and Auditor General of the Northern Ireland Audit Office, AFBI's Chair and the Chair of AFBI's Audit Committee.

Following AFBI's registration with HMRC for Corporation Tax in May 2012, the Corporation Tax charge was originally estimated at £4.994m and associated penalties and interest at £739k. Both amounts were recognised as liabilities in the accounts in 2012/13. AFBI has been actively engaged with the HMRC in negotiations to reduce the amount of penalties and interest chargeable.

The historical amounts due in respect of the years to 2012/13 are now estimated to be £3.809m in respect of Corporation Tax and £465k in respect of associated penalties and interest. Overpayments of £1.185m in respect of Corporation Tax and £274k in respect of interest and penalties have been recognised as debtors in the accounts for 2013/14, pending final agreement with HMRC.

The original Financial Improvement Plan (FIP) was reviewed during the year and at the June 2013 meeting it was agreed to take forwards phase 2 of the plan. There were 9 activities agreed to be included in phase 2. There are 2 activities which have not been completed but it is anticipated that these will be complete by 31 December 2014.

Internal Audit

AFBI Internal Audit

AFBI's Internal Audit function is carried out by a professional accounting firm which was appointed in accordance with the Public Sector Internal Audit Standards (PSIAS). Under the terms of the appointment, a Director in the firm acts as AFBI's Head of Internal Audit, who provides me with an independent opinion on AFBI's systems of risk management, control and governance and I received an overall satisfactory level of assurance in respect of 2013/14.

The Government Internal Audit Standards requires AFBI's internal auditors to bring to my attention those significant control issues which may be relevant to the preparation of my Governance Statement. As a result of the work undertaken during the year Internal Audit did not consider there were any significant issues which needed to be brought to my attention.

Internal Audit conducted two audits during the year both of which achieved satisfactory assurance ratings. These are summarised in the following table.

System	Assurance Rating
Human resource management	Satisfactory
Review of Corporate Governance	Satisfactory
Follow up review of previous recommendations	n/a

In addition, Internal Audit reviewed the implementation of recommendations made during the 2012/13 year in relation to Human Resource Management. Internal Audit also reviewed the implementation of AFBI's Financial Improvement Plan and provided advice and guidance in relation to the costing of the DARD Assigned Work Programme.

DARD Internal Audit

DARD Internal Audit provides further assurance on the adequacy of AFBI's governance, risk management, and internal control. In view of the fact that AFBI has its own Internal Audit function, the Audit Committee recommended that the DARD Internal Audit plan for 2013/14 include only a follow-up of previous recommendations. On the basis of its review of the implementation of previous recommendations DARD Internal Audit provided me with a satisfactory opinion for 2013/14.

Northern Ireland Audit Office

Over the last number of years, the Comptroller and Auditor General has provided unqualified audit opinions on AFBI's accounts..

The Northern Ireland Audit Office (NIAO) has completed a Value for Money report covering the period since the Institute was established up to March 2012. The report contained 11 recommendations relating to financial management, performance reporting, the management of research and development activities and governance and oversight arrangements within AFBI.

The NIAO report was examined by the Public Accounts Committee (PAC) in November 2013 and its report, published on 19 March 2014, contained 6 recommendations. A Memorandum of Reply to the Public Accounts Committee report was laid in the Assembly by the DFP Minister in May 2013. Implementation of the recommendations has commenced and these will be a significant area of focus for 2014/15.

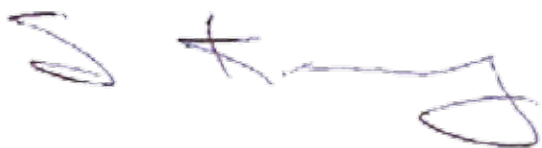
Enterprise Shared Services audited by DFP Internal Audit

To enable me to complete this Governance Statement, I have also drawn on assurances received from the Head of Internal Audit in the Department of Finance and Personnel (DFP) in respect of the Enterprise Shared Services that AFBI avails of. During 2013/14 DFP conducted a number of audits which are summarised in the table below along with the assurance rating received. The head of Internal Audit in DFP has provided an overall satisfactory opinion on ESS .

Shared Service Utilised	No of Audits Completed	Assurance Rating
Account NI (payment of wages & salaries)	4	4 x satisfactory
HR Connect (Human Resource management)	7	2 x substantial 3 x satisfactory 2 x limited
IT Assist (centralised IT services)	5	5 x satisfactory
Central Procurement Directorate	4	2 x satisfactory 2 x limited

5. Conclusion

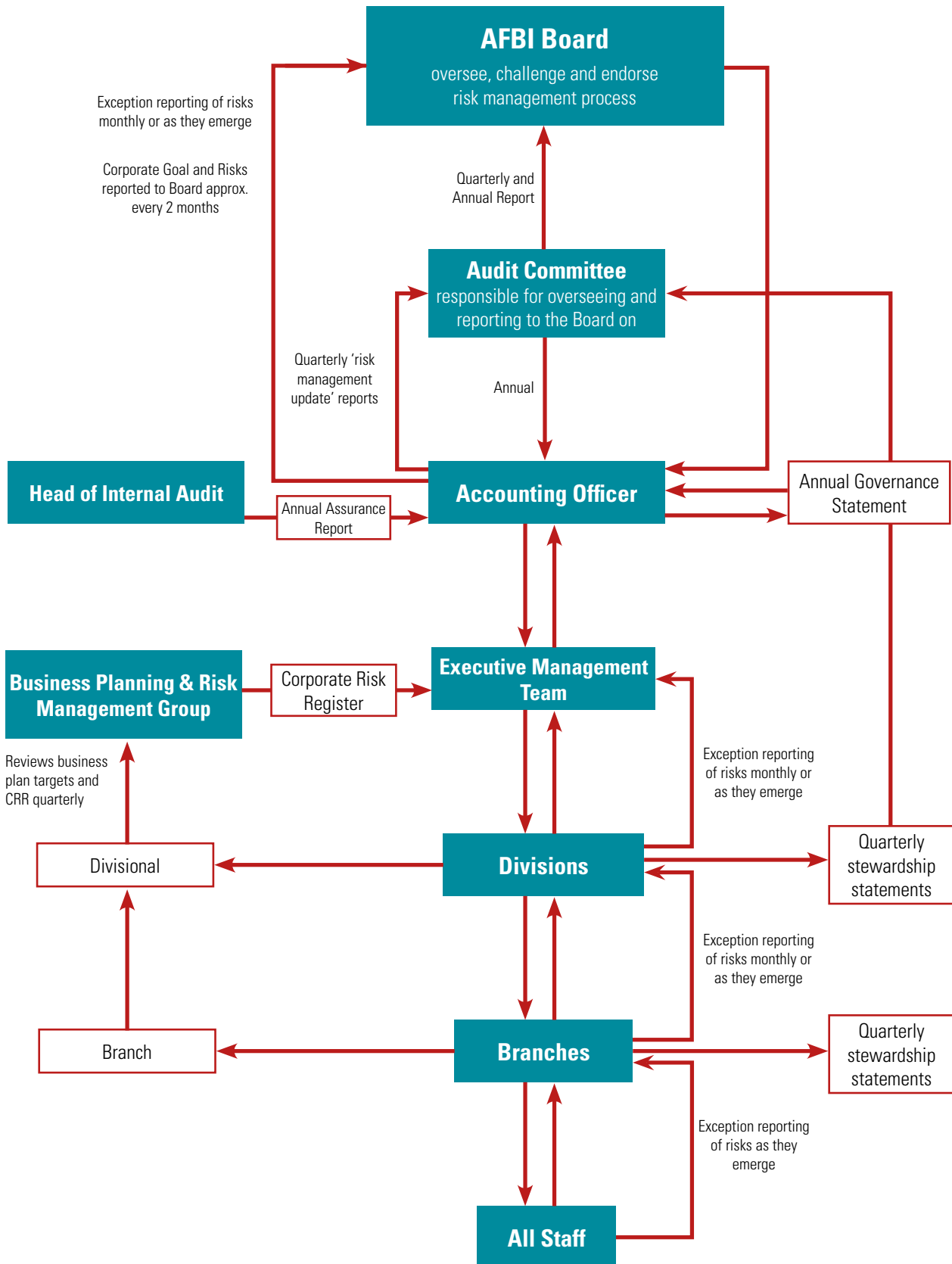
As Accounting Officer, based on assurances provided to me by AFBI's Internal Auditors, DARD Internal Audit, DFP's Internal Audit opinion on business areas within Enterprise Shared Service, stewardship reports provided to me by AFBI's Executive Directors, and, other than the specific control issues referred to above, I consider that the overall system of risk management, internal control and governance provides satisfactory assurance to me in relation to the ability of AFBI to effectively discharge its governance responsibilities.



Professor Seamus Kennedy MVB PhD MRCVS FRCPath
Accounting Officer, Agri-Food and Biosciences Institute

Appendix A:

Audit & Risk Management Governance Framework and Structure



Statement of Accounting Officer's Responsibilities

Under the Agriculture (Northern Ireland) Order 2004, the Institute is required to prepare for each financial year, a statement of accounts in the form and on the basis set out in the Accounts Direction.

The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of the Institute, its income and expenditure, changes in taxpayers' equity and cash flows for the financial year.

DARD has appointed the Chief Executive Officer of the Institute as Accounting Officer of the Institute, with responsibility for preparing the Institute's accounts and for transmitting them to the Comptroller and Auditor General.

In preparing the accounts, the Accounting Officer is required to comply with the Government Financial Reporting Manual and in particular to:

- a) observe the Accounts Direction issued by DARD, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- b) make judgments and estimates on a suitable basis;
- c) state whether applicable accounting standards, as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the accounts; and
- d) prepare the accounts on a going concern basis.

Note 22 to the financial statements indicates that the Accounting Officer has an ongoing legal claim against the Institute which has been provided for within the financial statements. The details of this provision have not been disclosed to the Accounting Officer during the preparation of the financial statements as this may prejudice any potential settlement. Consequently the Accounting Officer has been unable to fulfill all the duties required and the Principal Accounting Officer in DARD has overseen this aspect of the preparation of their financial statements instead.

The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which he is answerable, for keeping proper records and for guarding the Institute's assets, are set out in the Accounting Officer's memorandum issued by DFP and published in *Managing Public Money Northern Ireland*.



ACCOUNTS



Certificate of the Comptroller and Auditor General to the Northern Ireland Assembly

I certify that I have audited the financial statements of the Agri-Food and Biosciences Institute for the year ended 31 March 2014 under the Agriculture (Northern Ireland) Order 2004. These comprise the Statement of Comprehensive Net Expenditure, the Statement of Financial Position, the Statement of Cash Flows, the Statement of Changes in Taxpayers' Equity and the related notes. These financial statements have been prepared under the accounting policies set out within them. I have also audited the information in the Remuneration Report that is described in that report as having been audited.

Respective responsibilities of Accounting Officer and auditor

As explained more fully in the Statement of Accounting Officer's Responsibilities, the Accounting Officer is responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. My responsibility is to examine, certify and report on the financial statements in accordance with the Agriculture (Northern Ireland) Order 2004. I conducted my audit in accordance with International Standards on Auditing (UK and Ireland). Those standards require me and my staff to comply with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of the 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 Agri-Food and Biosciences Institute's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the Agri-Food and Biosciences Institute; and the overall presentation of the financial statements. In addition I read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements. If I become aware of any apparent material misstatements or inconsistencies I consider the implications for my certificate.

In addition, I am required to obtain evidence sufficient to give reasonable assurance that the expenditure and income recorded in the financial statements have been applied to the purposes intended by the Assembly and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Opinion on Regularity

In my opinion, in all material respects the expenditure and income recorded in the financial statements have been applied to the purposes intended by the Assembly and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Opinion on financial statements

In my opinion:

- the financial statements give a true and fair view of the state of Agri-Food and Biosciences Institute's affairs as at 31 March 2014 and of the net expenditure, cash flows and changes in taxpayers' equity for the year then ended; and
- the financial statements have been properly prepared in accordance with the Agriculture (Northern Ireland) Order 2004 and the Department of Agriculture and Rural Development's directions issued thereunder.

Opinion on other matters

In my opinion:

- the part of the Remuneration Report to be audited has been properly prepared in accordance with Department of Agriculture and Rural Development's directions made under the Agriculture (Northern Ireland) Order 2004; and
- the information given in the Strategic Report and the unaudited part of the Remuneration Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which I report by exception

I have nothing to report in respect of the following matters which I report to you if, in my opinion:

- adequate accounting records have not been kept; or
- the financial statements and the part of the Remuneration Report to be audited are not in agreement with the accounting records; or
- I have not received all of the information and explanations I require for my audit; or
- the Governance Statement does not reflect compliance with Department of Finance and Personnel's guidance.

Report

I have no observations to make on these financial statements.



KJ Donnelly
Comptroller and Auditor General
Northern Ireland Audit Office
106 University Street
Belfast
BT7 1EU

14 November 2014

Statement of Comprehensive Net Expenditure for the year ended 31 March 2014

	Note	2013-14 £000	2012-13 £000
Expenditure			
Staff costs	3	28,697	28,143
Depreciation	4	3,247	3,053
Other Expenditures	4	25,398	26,269
		57,342	57,465
Income			
Income from Activities		(16,348)	(16,899)
EU Income		(2,194)	(1,948)
	5	(18,542)	(18,847)
Net Expenditure		38,800	38,618
Taxation Charge	4	(18)	4,994
Notional Charges	4	1,443	1,343
Net Expenditure after taxation and notional charges		40,225	44,955
Other Comprehensive Net Expenditure			
Items that will not be reclassified to net operating costs:			
Net loss/(gain) on revaluation of Property, Plant and Equipment	6,10	668	(460)
Net (gain) on revaluation of Intangibles	7	(6)	(11)
Total Comprehensive Net Expenditure for the year ended 31 March 2014		40,887	44,484

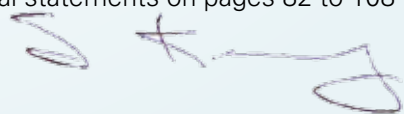
The notes on pages 86 to 108 form part of these accounts.

Statement of Financial Position

as at 31 March 2014

	Note	2014		2013	
		£000	£000	£000	£000
Non-current assets:					
Property, plant and equipment	6	9,512		12,180	
Intangible assets	7	213		262	
Biological assets	8	1,399		1,389	
Total non-current assets			11,124		13,831
Current assets:					
Inventories	11	394		369	
Trade and other receivables	12	8,471		13,900	
Cash and cash equivalents	13	2,726		247	
Total current assets			11,591		14,516
Total assets			22,715		28,347
Current liabilities					
Trade and other payables	14	(6,629)		(12,093)	
Provision	15	(732)		(1,402)	
Total current liabilities			(7,361)		(13,495)
Non-current assets plus net current assets			15,354		14,852
Non-current liabilities					
Provisions	15		(264)		(321)
Total non-current liabilities			(264)		(321)
Total assets less liabilities			15,090		14,531
Taxpayers' equity					
Revaluation Reserve			4,170		4,832
General Reserve			10,920		9,699
(See Statement of Changes in Taxpayers' Equity)			15,090		14,531

The financial statements on pages 82 to 108 were approved by the Board on 6 November 2014 and were signed on its behalf by:



Professor Seamus Kennedy MVB PhD MRCVS FRCPATH
Chief Executive and Accounting Officer

Date: 6 November 2014

The notes on pages 86 to 108 form part of these accounts.

Statement of Cash Flows

for the year ended 31 March 2014

	Note	2013-14 £000	2012-13 £000
Cash flows from operating activities			
Net expenditure after notional charges		(40,225)	(44,955)
<i>Adjustments for non-cash transactions</i>			
Non-cash transactions	4	4,487	4,019
Use of bad debt provision		(9)	(13)
Loss on disposal of biological assets		-	27
Decrease/(Increase) in trade receivables	12	5,436	(6,428)
(Increase)/Decrease in Inventories	11	(25)	29
(Decrease)/Increase in trade payables	14	(5,653)	6,733
Use of provisions	15	(919)	(515)
		3,317	3,852
Net cash outflow from operating activities		(36,908)	(41,103)
Cash flows from investing activities			
Purchase of property, plant and equipment	6	(1,260)	(1,335)
Purchase of intangible assets	7	(43)	(16)
Purchase of biological assets	8	(43)	(31)
Proceeds of disposal of property, plant and equipment		10	6
Proceeds of disposal of biological assets		689	293
Net cash outflow from investing activities		(647)	(1,083)
Cash flows from financing activities			
Grant from sponsoring department		40,034	40,030
Net financing		40,034	40,030
Net increase/(decrease) in cash and cash equivalents in the year		2,479	(2,156)
Cash and cash equivalents at the beginning of the year	13	247	2,403
Cash and cash equivalents at the end of the year	13	2,726	247

The notes on pages 86 to 108 form part of these accounts.

Statement of Changes in Taxpayers' Equity

for the period ended 31 March 2014

	Note	SoCNE Reserve £000	Revaluation Reserve £000	Total Reserves £000
Balance as at 31 March 2012		12,813	3,482	16,295
Changes in Taxpayers Equity 2012-13				
Grant from sponsoring entity		40,030	-	40,030
Net gain on revaluation of property, plant and equipment	6	-	457	457
Net gain on revaluation of intangible assets	7	-	11	11
Relieving adjustment	6,7	-	1,355	1,355
Release of reserves to the SoCNE		(5)	-	(5)
Notional charges - IT Assist	4	1,343	-	1,343
Transfers between reserves		473	(473)	-
Comprehensive Expenditure for the year		(44,955)	-	(44,955)
		(3,114)	1,350	(1,764)
Balance at 31 March 2013		9,699	4,832	14,531
Changes in Taxpayers Equity 2013-14				
Grant from sponsoring entity		40,034	-	40,034
Net loss on revaluation of property, plant and equipment	6,10	-	(668)	(668)
Net gain on revaluation of intangible assets	7,10	-	6	6
Release of reserves to the SoCNE		(31)	-	(31)
Notional charges - IT Assist	4	1,443	-	1,443
Transfers between reserves		-	-	-
Comprehensive Expenditure for the year		(40,225)	-	(40,225)
		1,221	(662)	559
Balance at 31 March 2014		10,920	4,170	15,090

The notes on pages 86 to 108 form part of these accounts.

Notes to the accounts

for the year ended 31 March 2014

1. Statement of accounting policies

These financial statements have been prepared in accordance with the 2013-14 *Government Financial Reporting Manual (FReM)* issued by DFP. The accounting policies contained in the FReM apply International Financial Reporting Standards (IFRS) as adapted or interpreted for the public sector context. Where the FReM permits a choice of accounting policy, the accounting policy which is judged to be most appropriate to the particular circumstances of the Agri-Food and Biosciences Institute (AFBI) for the purpose of giving a true and fair view has been selected. The particular policies adopted by the Agri-Food and Biosciences Institute are described below. They have been applied consistently in dealing with items that are considered material to the accounts. These financial statements have been prepared in sterling and are rounded to the nearest £'000.

Accounting convention

These accounts have been prepared under the historical cost convention modified to account for the revaluation of plant and equipment, intangible assets, biological assets and inventories.

Property, plant and equipment

AFBI owns the roof on the building at Hillsborough and are in discussions with DARD about transferring this asset to DARD. AFBI does not own any other land or buildings but leases them from DARD.

Other non-property assets are stated at current cost using appropriate indices to account for the effects of inflation. No independent valuer is involved in the valuation of assets. The date of the revaluation is the reporting date of 31 March each year.

The threshold for capitalisation is £5,000 excluding VAT.

Assets under construction are carried at cost. Items classified as "under construction" are recognised in the Statement of Financial Position to the extent that money has been paid or a liability incurred.

Donated fixed assets

Donated fixed assets are capitalised at their fair value on receipt and this value is credited to the Statement of Net Comprehensive Expenditure (SoCNE) reserve. Donated fixed assets are valued and depreciated as described below for purchased assets. Gains and losses on revaluations are also taken to the SoCNE reserve and, each year, an amount equal to the depreciation charge on the asset is released from the donated asset charged to the Statement of Comprehensive Net Expenditure. Any impairment on donated assets charged to the Statement of Comprehensive Net Expenditure is matched by a transfer from the SoCNE reserve.

Depreciation

Depreciation is charged on a straight line basis in order to write off the valuation of assets, less estimated residual value, of each asset over the expected useful life.

Assets are generally depreciated from the period of acquisition and not depreciated in the period of disposal. However, an exception to this practice occurs when AFBI makes a late addition in the financial year. Where the cost of the asset remains unpaid at the date the financial statements are prepared, the depreciation charge for the asset is included in the following year's financial statements.

The useful lives of tangible assets, which are reviewed regularly, are:

Plant	3 to 15 years
Equipment	5 to 20 years
Transport equipment: boats	5 to 15 years
Transport equipment: vehicles	5 to 10 years
Information technology: computers	3 to 6 years

The useful lives of intangible assets, which are reviewed regularly, are:

Software licences	2 to 10 years
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The Hillsborough roof has not been depreciated as there are ongoing discussions with DARD about transferring this asset to them.

Intangible assets

Software licences are stated at current cost using appropriate indices to account for the effects of inflation. Software assets are depreciated from the period of acquisition and not depreciated in the period of disposal.

Biological assets

Biological assets comprise cattle, sheep, pigs and goats which are used for research purposes. They are categorised according to the attributes used in the market to facilitate their valuation at the reporting date. Cattle were further grouped as follows:

Beef cattle are grouped by gender, breed and age.

Dairy cattle are grouped by lactation and breed.

Biological assets are valued at fair value less estimated costs at the point of sale at the end of the reporting period. This is further disclosed in accordance with IAS 41 Agriculture, by showing the aggregate value of purchases, sales, changes in value due to changes in physical conditions of the herd and changes in the value of the herd due to changes in market price.

Changes in value due to changes in physical conditions of the herd represent births which took place during the current financial year. The economic value of these transactions is debited or credited to the Statement of Comprehensive Net Expenditure when they occur.

Changes in value of the herd due to changes in market price represent the difference between the purchase cost or the value brought forward of each animal and the market value at the end of the reporting period. The difference is recognised in the Statement of Comprehensive Net Expenditure.

Inventories

Inventories are valued at the lower of cost and net realisable value.

Research and Development Expenditure

Research and development expenditures include all costs relating to the scientific and technical patent work, education and training necessary to ensure the development, start-up and commercialisation of new or improved products or processes.

Research expenditure is recognised as an expense when incurred.

Development expenditure on new or substantially improved products is capitalised as an intangible asset and amortised through cost of sales over the expected useful life of the product concerned. Capitalisation commences from the point at which the technical feasibility and commercial viability of the product can be demonstrated and AFBI Management is satisfied that it is probable that future economic benefit will result from the product once completed. This is usually at the point of regulatory filing in a major market and approval is highly probable. Capitalisation ceases when the product is ready for launch.

Cash and cash equivalents

Cash and cash equivalents comprise of cash and deposits with commercial banks. At each year end, the carrying value of cash at bank and in hand approximates their fair value due to their short-term nature.

Operating Income

Revenue is recognised when it is probable that the economic benefits will flow to AFBI and the revenue can be reliably measured. Revenue is recognised as follows:

For sales of services, revenue is recognised in the accounting period in which the services are rendered by reference to stage of completion of the specific transaction assessed on the basis of the actual service provided as a proportion of the total services to be provided.

For sales of goods, revenue is recognised when the significant risks and rewards of ownership of the goods have passed to the buyer and the amount of revenue can be measured reliably.

Royalties, Charter of Ship and Rents receivable: Revenue is recognised on an accruals basis in accordance with the substance of the relevant agreement. In order to estimate royalty income not yet notified, a review is undertaken of sales trends in the past.

Employee benefits

Under the requirements of IAS 19 Employee Benefits, staff costs must be recorded as an expense as soon as the organisation is obligated to pay them. This includes the cost of any untaken leave that has been earned at the year end. The figure has been based on a specific report run from the Personnel system which calculates the year end balance using leave balances on the system. It is not anticipated that the level of untaken annual and flexi leave will vary significantly from year to year.

Leases

Operating lease rentals are charged directly to the Statement of Comprehensive Net Expenditure over the period of the lease. There are no finance leases.

Financial instruments

AFBI is not allowed to borrow or invest surplus funds as per the Management Statement and Financial Memorandum. Financial assets and liabilities are generated by operational activities and are not held to handle the risk profile facing AFBI in undertaking its operations.

Liquidity risk

AFBI's net revenue resource requirements are financed by the Grant in Aid agreed with the Department of Agriculture and Rural Development, as is its capital expenditure. It is not, therefore, exposed to significant liquidity risks.

Interest rate risk

All AFBI's financial assets and liabilities carry nil rate of interest and it is not therefore exposed to significant interest rate risk.

Foreign currency risk

The majority of AFBI's operations, assets and liabilities are denominated in Sterling. Therefore its exposure to foreign currency risk is not significant.

Grant in aid receivable

Grant in aid represents net funding received from DARD and is credited to SoCNE reserve.

Provisions

AFBI makes provisions for liabilities and charges where, at the Statement of Financial Position date, a legal or constructive liability exists (i.e. a present obligation for past events exists), where the transfer of economic benefits is probable and a reasonable estimate can be made. Where the time value of money is material, AFBI discounts the provision to its present value using a standard government discount rate, which currently stands at -1.59%.

Estimation techniques used and changes in accounting estimates

Provision is made for all debts greater than 90 days old which are considered doubtful.

The effect of a change in accounting estimate is recognised by including it in the Statement of Comprehensive Net Expenditure in:

- the period of the change, if the change affects that period only;
- the period of the change and future periods, if that change affects both.

Value Added Tax

Value Added Tax (VAT) is accounted for in accordance with the Statement of Standard Accounting Practice 5, in the absence of an International Financial Reporting Standard (IFRS). Amounts are shown net of VAT, and irrecoverable VAT is charged to the Statement of Comprehensive Net Expenditure.

Third party assets

AFBI does not hold any third party assets.

Operating segments

IFRS 8 Operating Segments requires the identification of operating segments on the basis of internal reports reviewed by AFBI's Chief Decision Maker in order to allocate resources to each specific segment and assess its performance.

AFBI has completed a review against the criteria set out in IFRS 8 and considers that the disclosure format within the accounts meets IFRS 8 criteria.

Contingent liabilities

In addition to contingent liabilities disclosed in accordance with IAS 37, AFBI discloses for parliamentary reporting and accountability purposes certain statutory and non-statutory contingent liabilities where the likelihood of a transfer of economic benefit is remote, but which have been reported to the Assembly in accordance with the requirements of Managing Public Money Northern Ireland.

Where the time value of money is material, contingent liabilities which are required to be disclosed under IAS 37 are stated at discounted amounts and the amount reported to the Assembly separately noted.

Contingent liabilities that are not required to be disclosed by IAS 37 are stated at the amounts reported to the Assembly.

Reserves

Revaluation reserve

The Revaluation Reserve reflects the unrealised balance of the cumulative indexation and revaluation adjustments to assets other than donated assets and those funded by grants.

SoCNE Reserve

The SoCNE Reserve represents AFBI's total assets less total liabilities which is not represented by other reserves and financing items. It is a notional reserve for financial reporting purposes only. AFBI are not permitted to carry forward any cash or reserves. Any surplus cash must be returned to DARD at the end of the financial year.

Pensions

Past and present employees are covered by the provisions of the Principal Civil Service Pension Scheme (Northern Ireland) (PCSPS (NI)), which is a defined benefit scheme and is unfunded. AFBI recognises the expected cost of providing pensions on a systematic and rational basis over the period during which it benefits from employees' services by payment to the PCSPS (NI) of amounts calculated on an accruals basis.

All pension contributions are charged to the Statement of Comprehensive Net Expenditure when incurred.

Impending Application of Newly Issued Accounting Standards Not Yet Effective

Management has reviewed new accounting standards that have been issued but are not yet effective, nor adopted early for these accounts.

The IASB have issued new and amended standards (IFRS 10, IFRS 11 and IFRS 12) that affect consolidation and reporting of subsidiaries, associates and joint ventures. These standards have an effective date of January 2013, and EU adoption is due from 1 January 2014. The IASB have also issued IFRS 13 which affects fair value measurement for all relevant balances and transactions covered by IFRS. This standard has an effective date of January 2013.

Management consider that there are no items likely to have a significant impact on the accounts in the period of initial application.

2. Statement of Operating Costs by Operating Segment

Segmental selection is based on the organisational structure that AFBI uses to make decisions on resource allocation as well as the availability of financial information based on that structure. From 1 April 2013, two of AFBI's operational divisions were combined. Applied Plant Science and Biometrics Division (APSD) combined with Agriculture, Food & Environmental Sciences Division (AFESD) to make Sustainable Agri-Food Sciences Division (SAFSD). AFBI now has two operational divisions supported by the **Finance and Corporate Affairs Division (FCAD)**.

The operational divisions are:

Sustainable Agri-Food Sciences Division (SAFSD) provides statutory services including certification of monitoring for the Department of Agriculture and Rural Development (DARD) of pasture, seeds and plant health, and provides specialist advice on weeds, crop plants, varieties and disease problems. SAFSD provides scientific support for the growth, sustainability and competitiveness of Northern Ireland's farming, fishing and agri-food industries, and assists the industry to maintain high standards of environmental protection and animal welfare. SAFSD's research takes account of environmental needs and sustainable economic growth in Northern Ireland's countryside.

Veterinary Sciences Division (VSD) delivers world class veterinary science to the animal, food and fish based sectors of the agri-food industry.

The 2012-13 figures have been restated in line with the new divisional structure.

Analysis of net expenditure by segment

	2013-14				2012-13			
	SAFSD	VSD	FCAD	Total	SAFSD	VSD	FCAD	Total
Gross expenditure	23,262	13,570	20,510	57,342	23,207	13,286	20,972	57,465
Taxation charges	-	-	(18)	(18)			4,994	4,994
Notional charges	-	-	1,443	1,443			1,343	1,343
	23,262	13,570	21,935	58,767	23,207	13,286	27,309	63,802
Income	(8,657)	(2,895)	(6,990)	(18,542)	(9,645)	(2,639)	(6,563)	(18,847)
Net expenditure	14,605	10,675	14,945	40,225	13,562	10,647	20,746	44,955
Total assets	9,370	3,494	9,851	22,715	8,833	6,256	13,258	28,347
Total liabilities	(1,958)	(731)	(4,936)	(7,625)	(2,320)	(1,685)	(9,811)	(13,816)
Net assets	7,412	2,763	4,915	15,090	6,513	4,571	3,447	14,531

3. Staff numbers and related costs

Staff costs comprise:

	Permanently employed staff	Others	2013-14 £000 Total	2012-13 £000 Total
Wages and salaries	21,609	1,390	22,999	22,510
Social security costs	1,599	-	1,599	1,628
Other pension costs	4,099	-	4,099	4,005
Sub Total	27,307	1,390	28,697	28,143
Less recoveries in respect of outward secondments	(32)	-	(32)	(85)
Total net costs	27,275	1,390	28,665	28,058

Pension scheme details

PCSPS (NI)

The Principal Civil Service Pension Scheme (Northern Ireland) (PCSPS(NI)) is an unfunded multi-employer defined benefit scheme but the Agri-Food and Biosciences Institute is unable to identify its share of the underlying assets and liabilities. The most up to date actuarial valuation was carried out as at 31 March 2010. The pension scheme liability reported in the DFP Superannuation and Other Allowance Resource Accounts last year was as at 31 March 2010, however, work is ongoing to provide a report on an updated valuation as at 31 March 2012 for the basis of the actuarial valuation rolled forward to the reporting date of the DFP Superannuation and Other Resource Accounts for 2014.

For 2013-14, employers' contributions of £4,074,995 were payable to the PCSPS(NI) (2012-13 £3,978,111) at one of four rates in the range 18% to 25% of pensionable pay, based on salary bands. The scheme's Actuary reviews employers' contributions every four years following a full scheme valuation. A new valuation scheme based on data as at 31 March 2012 is currently being undertaken by the Actuary to review employer contribution rates for the introduction of a new career average earning scheme from April 2015. From 2014-15, the rates will remain in the range 18% to 25%. The contribution rates are set to meet the cost of the benefits accruing during 2013-14 to be paid when the member retires, and not the benefits paid during this period to existing pensioners.

Employees can opt to open a partnership pension account, a stakeholder pension with an employer contribution. Employers' contributions of £22,772 (2012-13: £25,548) were paid to one or more of the panel of three appointed stakeholder pension providers. Employer contributions are age-related and range from 3% to 12.5% of pensionable pay. Employers also match employee contributions up to 3% of pensionable pay. In addition, employer contributions

of £1,453, 0.8% (2012-13: £1,613, 0.8%) of pensionable pay, were payable to the PCSPS(NI) to cover the cost of the future provision of lump sum benefits on death in service and ill health retirement of these employees.

Contributions due to the partnership pension providers at the reporting period date were £0 (2012-13: £0). Contributions prepaid at that date were £0 (2012-13: £0).

4 individuals (2012-13: 3) retired early on ill-health grounds; the total additional accrued pension liabilities in the year amounted to £5,929 (2012-13: £4,119).

Average number of persons employed

The average number of whole-time equivalent persons employed during the year was as follows.

	Permanent staff	Others	2013-14 Total	2012-13 Total
Directly Employed	732	50	782	784
Other	0	54	54	60
Total	732	104	836	844

Other staff are defined as agency staff employed on a temporary contract.

3.1 Reporting of Civil Service and other compensation schemes – exit packages

Exit package cost band	Number of Compulsory Redundancies	Number of Other Departures Agreed	Total Number of Exit Packages by cost band
<£10,000	-	1(2012-13, 0)	1(2012-13, 0)
£10,000 - £25,000	-	-	-
£25,000 - £50,000	-	-	-
£50,000 - £100,000	-	-	-
£100,000 - £150,000	-	-	-
£150,000 - £200,000	-	-	-
Total number of exit packages	-	1(2012-13, 0)	1(2012-13, 0)
Total resource cost/£	-	4,131(2012-13, 0)	4,131(2012-13, 0)

Redundancy and other departure costs have been paid in accordance with the provisions of the Civil Service Compensation Scheme (Northern Ireland), a statutory scheme made under the Superannuation (Northern Ireland) Order 1972. Exit costs are accounted for in full in the year of departure. Where the Institute has agreed early retirements, the additional costs are met by the Institute and not by the Civil Service pension scheme. Ill-health retirement costs are met by the pension scheme and are not included in the table.

4. Other Expenditure

	Note	2013-14 £000		2012-13 £000	
<i>Other Expenditure</i>					
Lease of land and buildings		6,383		6,652	
Laboratory consumables		2,426		2,144	
Ship operating costs		1,762		1,777	
Lab equipment maintenance and other expenses		1,653		1,450	
Rates and water ¹		1,466		1,740	
Other expenses		1,458		1,238	
Irrecoverable VAT ²		1,432		1,372	
Electricity		1,271		1,385	
Contracted out services		1,094		1,130	
Animal feed and veterinary expenses		813		837	
Apparatus, glassware and minor equipment		751		728	
Royalty administration fees		681		733	
Training, conferences and library expenses		611		593	
Gas		581		797	
Repairs and maintenance		543		511	
Clinical and other waste disposal costs		426		348	
Travel and subsistence		390		345	
Motor and tractor expenses		313		264	
Telephone		250		271	
Postage, printing and stationery		234		226	
Oil		175		346	
Marketing and advertisements		175		96	
Plants, shrubs, fertiliser		172		107	
Computer support		166		151	
Legal costs and compensation		159		120	
Carbon Reduction		118		124	
Hire of plant and vehicles		103		114	
Livestock expenses		70		70	
Protective clothing		55		70	
Rent of land and buildings		52		81	
External Audit fees ⁴		40		31	
Internal Audit fees		29		31	
Consultancy costs		14		14	
Hospitality		9		8	
Taxation fines and penalties		(274)		739	
			25,601		26,643

	Note	2013-14 £000		2012-13 £000	
Non-cash items					
Depreciation	6	3,149		2,935	
Amortisation	7	98		118	
Notional charges		1,443		1,343	
Impairment/Indexation of fixed assets	10	242		(8)	
Provisions provided for in year	15	192		(124)	
Profit on disposal of biological assets		(299)		-	
Decrease in value of livestock due to deaths	8	61		50	
Loss on disposal of non current assets		47		171	
Increase in Debt provision		2		1	
Bad debts written off		1		1	
Release from SoCNE reserve		(31)		(5)	
Change in value of livestock due to changes in physical conditions of the herd	8	(107)		(129)	
Change in market value of livestock	8	(311)		(331)	
Taxation charges			4,487		4,022
Taxation charges ³			(18)		4,994
			30,070		35,659

¹Within the rates cost for 2012/13 is a rates revaluation for the Hillsborough site of £419k, which relates to the years 09/10 to 12/13.

²In Northern Ireland, VAT cannot be reclaimed on research performed for Government Departments or on work which is grant funded. As a proportion of AFBI's work is research for Government Departments and/or is grant funded, it cannot claim back all VAT. The "Irrecoverable VAT" line is the amount of VAT which AFBI cannot claim from HMRC. This VAT expense should ideally be expensed to the various Government / grant funded projects. However, the agreed process with HMRC is complex and AFBI are currently investigating means by which it can accurately allocate the expense to individual projects.

³ In 2013/14 the taxation charge of (£18k) is made up of a charge for the year of £1,167k and a reduction in previous years' taxation charge of £1,185k. In 2012/13, the taxation charge of £4,994k relates to the Corporation Tax charge for the years 2006/07 through to 2012/13. The associated taxation fines and penalties figure of (£274k) relates to a reduction in these costs from the previous years. There are no fines or penalties relating to the 13/14 year. Corporation tax is charged on AFBI's royalty income, adjusted for a 10% admin fee and rewards to staff payments. The rate of corporation tax for 2013-14 was 23% (2012-13, 24%).

⁴The external audit costs above reflect estimates made by AFBI when preparing the accounts. The actual cost of the 2012-2013 audit was £34k and NIAO have advised that their estimated fee for the audit of the 2013-14 account is £33k.

During the year AFBI did not purchase any non-audit services from its auditor (NIAO).

5. Income

	2013-14 £000		2012-13 £000
Income from analytical, diagnostic work and research contracts	8,481		9,319
EU Income	2,194		1,948
Royalties	6,806		6,300
Sale of general produce and livestock	829		978
Charter of the ship	125		101
Refunds	61		102
Recoveries in respect of outward secondments	32		85
Rents receivable	14		14
Total	18,542		18,847

Royalty income is received gross of a 10% administration fee. The administration fee is then paid over on receipt of a VAT invoice.

Fees and charges

A detailed analysis of fees and charges information is not provided as the full cost of each service provided does not exceed £1m.

6. Property, Plant and Equipment

2013-14

	Information Technology £000	Plant & Machinery* £000	Boats & Motor Vehicles £000	Land & Buildings £000	Total £000
Cost or valuation					
At 1 April 2013	1,361	27,676	4,800	220	34,057
Additions	49	1,318	84	(3)	1,448
Disposals	(342)	(816)	(18)	-	(1,176)
Revaluations	(72)	(2,551)	(238)	-	(2,861)
At 31 March 2014	996	25,627	4,628	217	31,468
	Information Technology £000	Plant & machinery £000	Boats & Motor Vehicles £000	Land & Buildings £000	Total £000
Depreciation					
At 1 April 2013	1,026	17,985	2,866	-	21,877
Charge for the year	175	2,494	480	-	3,149
Disposals	(342)	(762)	(15)	-	(1,119)
Revaluations	(55)	(1,734)	(162)	-	(1,951)
At 31 March 2014	804	17,983	3,169	-	21,956
Carrying Amount					
At 31 March 2013	335	9,691	1,934	220	12,180
Carrying Amount					
At 31 March 2014	192	7,644	1,459	217	9,512
Asset financing:					
Owned	192	7,644	1,459	217	9,512
Finance Leased	-	-	-	-	-
On-balance sheet PFI Contracts	-	-	-	-	-
Carrying Amount 31 March 2014	192	7,644	1,459	217	9,512

* Plant & Machinery includes a donated asset of scientific equipment with a carrying value of £6,502 at 31 March 2014. Land and buildings additions of (£3k) relates to the reversal of accruals from the previous financial year.

6. Property, Plant and Equipment

2012-13

	Information Technology £000	Plant & Machinery* £000	Boats & Motor Vehicles £000	Assets Under Construction £000	Land & Buildings £000	Total £000
Cost or valuation						
At 1 April 2012	2,256	28,138	4,518	127	-	35,039
Additions	-	564	84	93	-	741
Disposals	(1,019)	(1,800)	(121)	-	-	(2,940)
Reclassification	-	-	-	(220)	220	-
Revaluations	124	774	319	-	-	1,217
At 31 March 2013	1,361	27,676	4,800	-	220	34,057
Depreciation						
At 1 April 2012	1,868	17,989	2,454	-	-	22,311
Charge for the year	174	2,353	408	-	-	2,935
Relieving adj	(84)	(1,185)	(63)	-	-	(1,332)
Disposals	(1,019)	(1,651)	(116)	-	-	(2,786)
Revaluations	87	479	183	-	-	749
At 31 March 2013	1,026	17,985	2,866	-	-	21,877
Carrying Amount						
At 31 March 2012	388	10,149	2,064	127	-	12,728
Carrying Amount						
At 31 March 2013	335	9,691	1,934	-	220	12,180
Asset financing:						
Owned	335	9,691	1,934	-	220	12,180
Finance Leased	-	-	-	-	-	-
On-balance sheet PFI Contracts	-	-	-	-	-	-
Carrying Amount 31 March 2013	335	9,691	1,934	-	220	12,180

* Plant & Machinery includes a donated asset of scientific equipment with a carrying value of £49,172 at 31 March 2013.

7. Intangible assets

Intangible assets comprise of software licences.

2013-14	£000
Cost or valuation	
At 1 April 2013	623
Additions	43
Disposals	(75)
Revaluation	11
At 31 March 2014	602
	£000
Amortisation	
At 1 April 2013	361
Charge for the year	98
Relifing adj	-
Disposals	(75)
Revaluations	5
At 31 March 2014	389
Carrying Amount	
At 31 March 2013	262
Carrying Amount	
At 31 March 2014	213
2012-13	
	£000
2012-13	
Cost or valuation	
At 1 April 2012	758
Additions	16
Disposals	(174)
Revaluation	23
At 31 March 2013	623
	£000
Amortisation	
At 1 April 2012	404
Charge for the year	118
Relifing adj	(21)
Disposals	(152)
Revaluations	12
At 31 March 2013	361
Carrying Amount	
At 31 March 2012	354
Carrying Amount	
At 31 March 2013	262

8. Biological Assets

	2013-14 £000		2012-13 £000
Livestock at Fair Value			
Valuation as at 1 April	1,389		1,269
Purchases	43		31
Sales	(390)		(321)
Decreases in value due to deaths	(61)		(50)
Changes in value due to changes in physical conditions of the herd (births)	107		129
Changes in value due to changes in market price	311		331
Valuation as at 31 March	1,399		1,389

9. Financial Instruments

As the cash requirements of Agri-Food and Biosciences Institute (AFBI) are met through Grant in Aid provided by DARD and commercial income received, financial instruments play a more limited role in creating and managing risk than would apply to a non-public sector body. The majority of financial instruments relate to contracts to buy non-financial items in line with AFBI's expected purchase and usage requirements and AFBI is therefore exposed to little credit, liquidity or market risk.

10. Impairments

Indexation of non-current assets took place during 2013-14 which resulted in £662k being debited to the Revaluation Reserve and indexation of £242k being charged to the Statement of Comprehensive Net Expenditure. Indexation of non-current assets took place during 2012-13 which resulted in £460k being credited to the Revaluation Reserve and a reversal of previous impairments of £8k being credited to the Statement of Comprehensive Net Expenditure.

Breakdown of impairments/indexation by category

	2013-14 £000		2012-13 £000
Charged to statement of comprehensive net expenditure	242		(8)
Charged to revaluation reserve	662		(471)
	904		(479)

11. Inventories

	2013-14 £000	2012-13 £000
Feedstuffs and sundry stocks at Hillsborough and Stoney Road	237	241
Consumables at Newforge and Stoney Road	157	128
	394	369

12. Trade receivables and other current assets

	2013-14 £000	2012-13 £000
Amounts falling due within one year;		
Trade receivables	2,020	4,693
Other receivables	76	91
Prepayments and accrued Income	6,375	9,116
	8,471	13,900

Within accrued income for 2013-14 is £892k due from HMRC relating to overpayment of corporation tax charges and penalties. Within accrued income for 2012-13 is £5.721m of Grant in Aid owed from DARD for payment of corporation tax charges and penalties. There is no accrued Grant in Aid in 2013-14

Within trade receivables and other current assets are EU debtors of £806k (2012-13, £577k).

12.1 Intra-Government Balances

	Amounts falling due within one year	
	2013-14 £000	2012-13 £000
Balances with other central government bodies	2,182	8,050
Balances with local authorities	13	10
Balances with NHS bodies	-	-
Balances with public corporations and trading fund	2	-
<i>Subtotal: intra-government balances</i>	2,197	8,060
Balances with bodies external to government	6,274	5,840
Total receivables at 31 March	8,471	13,900

13. Cash and cash equivalents

	2013-14 £000	2012-13 £000
Balance at 1 April	247	2,403
Net change in cash and cash equivalent balances	2,479	(2,156)
Balance at 31 March	2,726	247
The following balances at 31 March were held at:		
Commercial banks and cash in hand	2,726	247
Balance at 31 March	2,726	247

14. Trade payables and other current liabilities

Amounts falling due within one year	2013-14 £000	2012-13 £000
VAT	9	128
Other taxation and social security	344	5,729
Trade payables	827	807
Other payables	29	2
Capital creditors	432	243
Accruals and deferred Income	4,988	5,184
	6,629	12,093

The 2012-13 amount of £5.729m in 'Other taxation and social security' relates to corporation tax charges and penalties due for the years 2006-07 through to 2012-13. In 2013-14 the accounts include a receivable of £892k in respect of amounts owed from HMRC for corporation tax and penalties. This has been quantified after negotiations with HMRC.

14.1 Intra-Government Balances

	Amounts falling due within one year	
	2013-14 £000	2012-13 £000
Balances with other central government bodies	1,303	8,001
Balances with local authorities	2	3
Balances with public corporations and trading funds	62	27
<i>Subtotal: intra-government balances</i>	1,367	8,031
Balances with bodies external to government	5,262	4,062
Total payables at 31 March	6,629	12,093

15. Provisions for liabilities and charges

	Legal £'000	Decommissioning Costs £'000	Equal Pay £'000	Early Departure £'000	Injury Benefit £'000	Total £'000
Balance at 1 April 2013	1,345	80	-	89	209	1,723
Provided in the year	241	-	-	-	-	241
Provisions not required written back	(49)	-	-	-	-	(49)
Provisions utilised in year	(862)	-	-	(43)	(14)	(919)
Balance at 31 March 2014	675	80	-	46	195	996

Analysis of expected timing of discounted flows

	Legal £'000	Decommissioning costs £'000	Equal Pay £'000	Early Departure £'000	Injury Benefit £'000	Total £'000
Not later than one year	675	-	-	43	14	732
Later than one year and not later than five years	-	-	-	3	56	59
Later than five years	-	80	-	-	125	205
Balance at 31 March 2014	675	80	-	46	195	996

2012-13						
	Legal £'000	Decommissioning Costs £'000	Equal Pay £'000	Early Departure £'000	Injury Benefit £'000	Total £'000
Balance at 1 April 2012	1,552	80	360	148	223	2,363
Provided in the year	198	-	-	11	-	209
Provisions not required	(326)	-	(7)	-	-	(333)
Provisions utilised in year	(79)	-	(353)	(70)	(14)	(516)
Balance at 31 March 2013	1,345	80	-	89	209	1,723

Analysis of expected timing of discounted flows

	Legal £'000	Decommissioning Costs £'000	Equal Pay £'000	Early Departure £'000	Injury Benefit £'000	Total £'000
Not later than one year	1,345	-	-	43	14	1,402
Later than one year and not later than five years	-	-	-	46	56	102
Later than five years	-	80	-	-	139	219
Balance at 31 March 2013	1,345	80	-	89	209	1,723

Provisions have not been discounted as these relate to payments due to be paid in the near future.

Legal

This relates to personal injury legal cases and intellectual property claims. Legal claims are assessed by independent solicitors and a provision of 100% of the likely maximum claim value is made. This percentage is to be reviewed on an ongoing basis to ensure it continues to represent a reasonable estimate of the expenditure on such claims.

Decommissioning costs

This relates to a piece of equipment which holds radioactive material and as such falls under the High Activity Sealed Radioactive Sources (HASS) Regulations 2003. The material is used by AFBI in the course of its business. The provision is required to cover the cost of compliance with HASS Regulations when the equipment is disposed of.

Equal pay

This relates to the NICS Equal Pay Settlement and revised pay scales for Administrative Assistants, Administrative Officers, Executive Officers IIs and all analogous grades. The provision was calculated by Northern Ireland Statistical Research Agency (NISRA) based on liability from 1 April 2006 when the Agri-Food and Biosciences Institute was created. The Equal Pay settlement took place in March 2013.

Early Departure

This relates to pension payments to staff members who took early retirement. AFBI are required to make the payments until the individuals reach 60 years of age.

Injury Benefit

This relates to payments to staff members who have suffered an impairment to earnings as a result of an injury that has been sustained within the context of one of the qualifying conditions outlined within the legislation governing the scheme, which is known as the Civil Service Injury Benefit Scheme (NI) (CSIBS(NI)). Injury benefit is paid when a qualifying injury impairs the individual's earning capacity.

16. Capital commitments

	2013-14 £000		2012-13 £000
Contracted Capital Commitments at 31 March not otherwise included in these financial statements			
Assets under construction	0		0

17. Commitments under leases

17.1 Operating leases

AFBI has an operating lease with DARD for the land and buildings it occupies. Total future minimum lease payments under operating leases are given in the table below for each of the following periods:

	2013-14 £000		2012-13 £000
Obligations under operating leases comprise:			
Land and buildings			
Not later than one year	6,382		6,462
Later than one year and not later than five years	25,528		25,848
	31,910		32,310
Photocopiers			
Not later than one year	7		13
Later than one year and not later than five years	1		8
	8		21

17.2 Finance leases

AFBI has no finance lease commitments at the year end.

18. Commitments under PFI contracts

AFBI had no PFI contracts during 2013/2014.

19. Other financial commitments

AFBI had no other financial commitments at the year end.

20. Contingent liabilities disclosed under IAS 37

AFBI had no contingent liabilities at the year end.

21. Losses and special payments

AFBI had ten instances of losses which amounted to £91k. There were eight losses in 2012-13 which amounted to £772k.

	2013-14 £000	2012-13 £000
Total		
10 cases amounting to £91k in 2013-14	91	
8 cases amounting to £772k in 2012-13		772
Details of cases over £250k		
Cash Loss		
(Reduction)/charge for corporation tax penalty and interest on royalty income	(274)*	739

*Following registration for corporation tax in May 2012, HM Revenue and Customs (HMRC) have advised that AFBI will have a tax liability based upon the application of tax to the royalty income stream from its establishment on 1 April 2006. The demand included £739k estimated charge for penalty and interest charges, which was disclosed in 12/13 as a loss. AFBI actively engaged with HMRC in an effort to quantify the amount of penalties and interest actually due and this resulted in a reduction of £274k, which is reflected in 2013/14.

22. Related-party transactions

The Department of Agriculture and Rural Development is the sponsor department of AFBI with which it had various material transactions during the year and is regarded as a related party. DARD's executive agencies also had transactions with AFBI.

In addition AFBI had some transactions with other government departments and central government bodies. Most of these transactions have been with Northern Ireland departments and their executive agencies such as DFP (including CPD and Pensions Branch), DCAL, DOE, FSA (NI), HMRC, DEFRA & Northern Ireland Water.

Within the provisions (Note 15) there is an amount in respect of an ongoing legal claim for which the Chief Executive is a potential beneficiary.

A member of the AFBI Board is employed by an organisation to whom AFBI provides scientific research services, Dunbia. In accordance with IAS 24 (2010) the transactions that occurred within the financial year and any balances at year end are shown below:

	Dunbia	
	2013-14 £000	2012-13 £000
Revenues generated during the year	2	110
Expenditure incurred during the year	-	-
Net value of transactions at year end	2	110
	2014 £000	2013 £000
Amount owed to AFBI	1	33
Amount owed by AFBI	-	-
Net balance at year end	1	33

Other than the above, no Board member, key manager or other related party has undertaken any material transactions with AFBI during the year.

Any other compensation payments issued to the AFBI Board in relation to IAS 19 Employee Benefits are disclosed within the Remuneration Report.

23. Third-party assets

AFBI does not hold any third party assets.

24. Events after the Reporting Period

AFBI does not have any events after the reporting period to disclose.

Date of authorisation for issue

The Accounting Officer authorised these financial statements for issue on the 14 November 2014

Scientific excellence in Northern Ireland... ...serving the world

AFBI's mission is to maintain and enhance its reputation as a world-class scientific institute, delivering proven value to government and other customers.

AFBI provides research and development, analytical and diagnostic services, and scientific advice in agriculture, food, animal and plant health, marine and fresh water ecosystem management and the agri-environment.

Our customers include a range of local, national and international commercial companies, Northern Ireland and United Kingdom Departments, Agencies, and associated bodies and the European Union.

We pride ourselves on the quality and breadth of our scientific expertise and maintain appropriate quality assured accreditation standards.

AFBI has various national and international reference laboratories.

AFBI maintains a cutting edge skills and technology base to fulfil its statutory obligations including provision of rapid, scientific response capabilities for DARD and other Departments during emergencies.

AFBI scientists have long standing experience and internationally recognised standards of providing evidence-based scientific advice to Government policy makers and commercial decision makers.

We are the partner / contractor of choice for many local, national and international bodies.

A major aim is to support industry by providing a "one-stop shop" for diverse specialist expertise and facilities.

AFBI's expertise includes:

Veterinary diagnostics; animal health and welfare; food science; crop and livestock systems; biometric traceability; plant breeding; biometrics and statistics; agricultural economics; renewable energy and non-food crop agronomy; oceanography; fish stock management, aquatic and land based ecosystem management of natural resources.

AFBI has facilities sited across Northern Ireland which include modern laboratories and secure animal accommodation and has a purpose built marine research vessel. The facilities have "state of the art" equipment required to resolve scientific problems and produce sophisticated and reliable results.

Technological capabilities include:

molecular technologies; light and electron microscopy; mass spectrometry; pathogenesis studies; biosensor technology; seabed mapping and minimal processing technologies.

Agri-Food and Biosciences Institute
18a Newforge Lane
Malone Upper
Belfast BT9 5PX
Northern Ireland, UK

Tel: +44 (0) 2890 255 636
Fax: +44 (0) 2890 255 035
Email: info@afbini.gov.uk
www.afbini.gov.uk