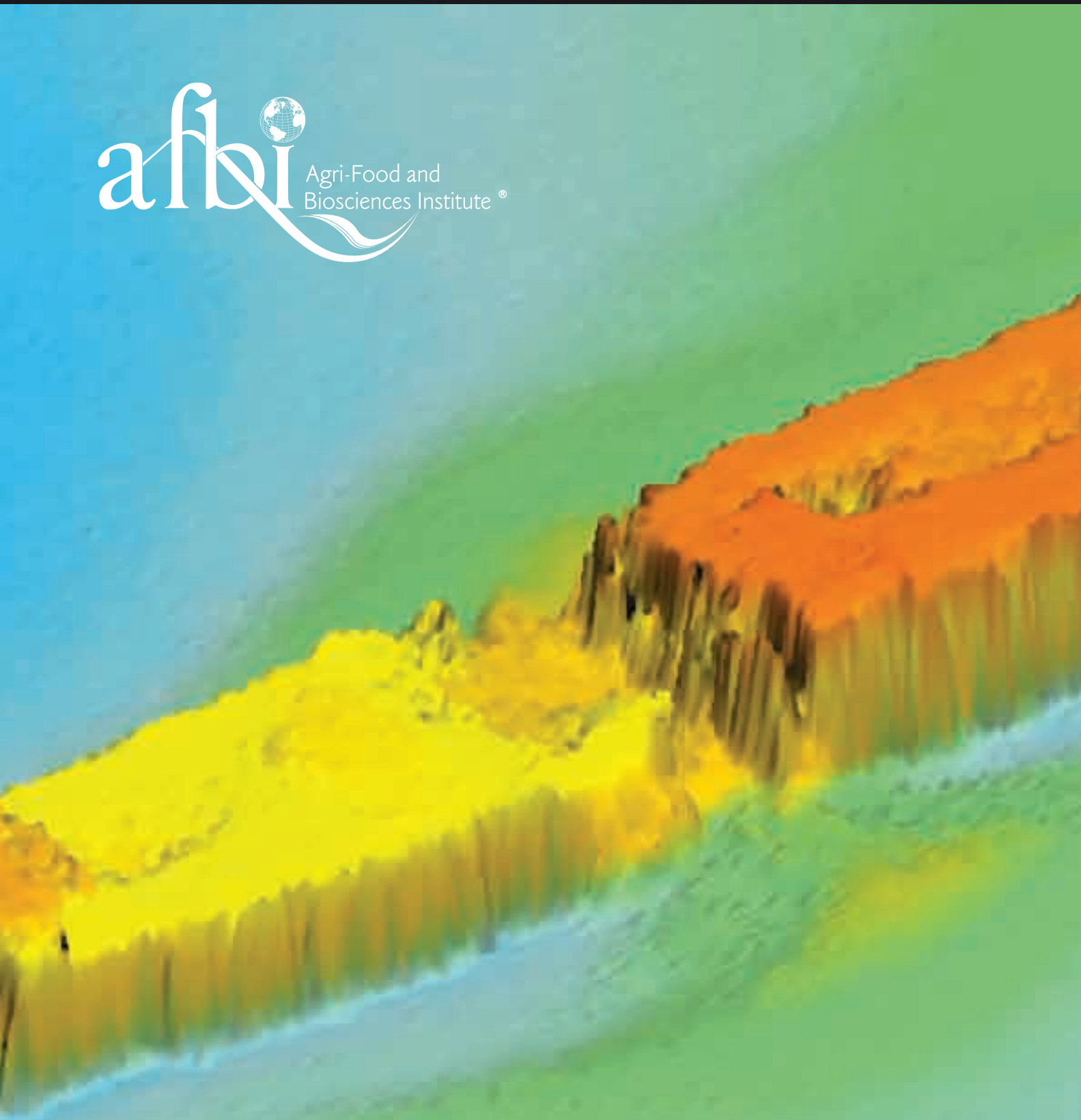
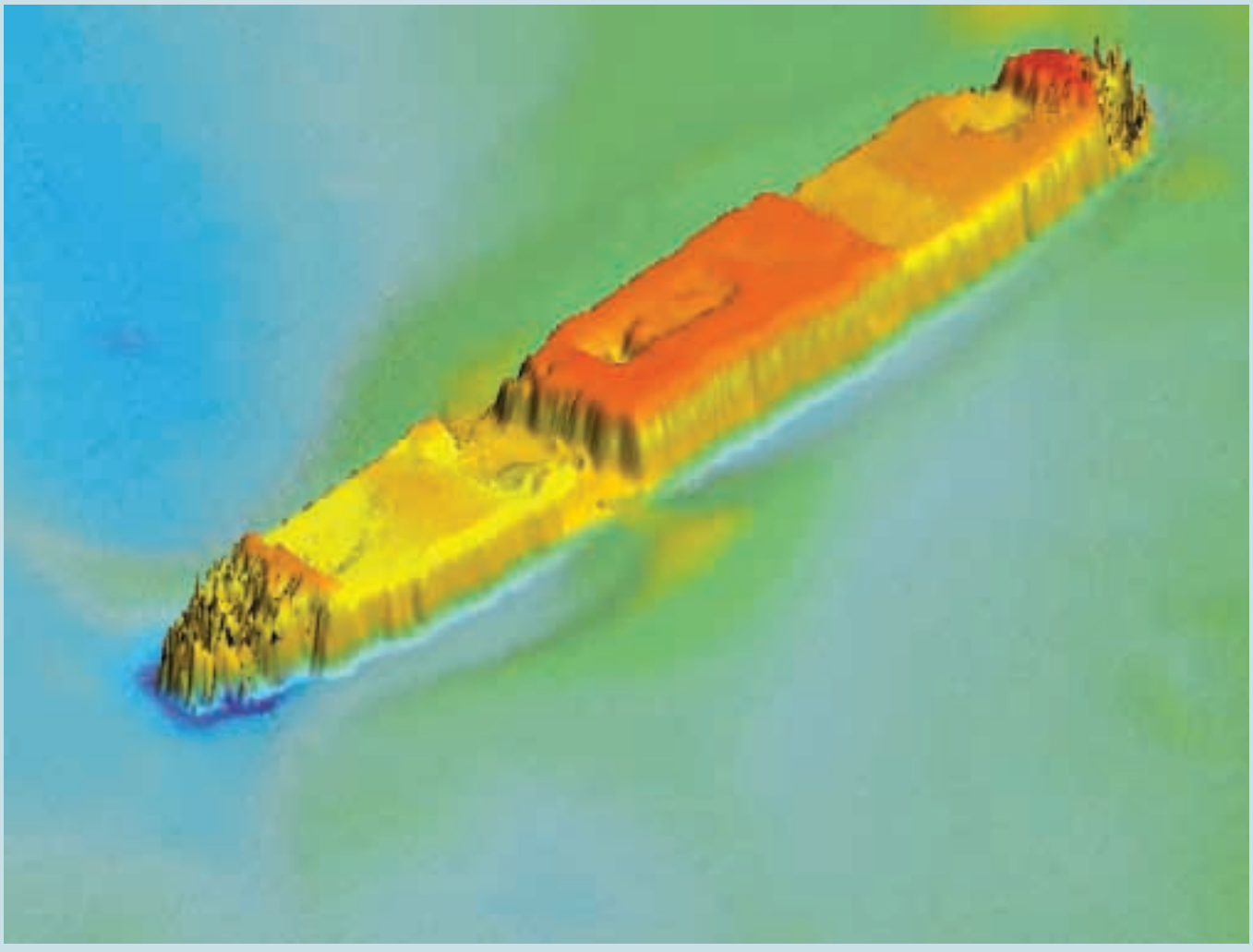
afbi Agri-Food and Biosciences Institute ®



Annual Report

and Statement of Accounts 2008/2009



The SS Neotsfield was built in 1906 by Furness & Withy of West Hartlepool. She grossed 3,821 tons, 2488 net, and measured 340 x 47.1 x 27.4ft. and was powerd by a 3 cylinder triple-expansion steam engine which generaled 317 h.p. and was fitted with a 4 inch stern gun.
She was torpedoed by UB-64 whilst carrying 4,158 tons of coal, 808 tons of coke from the Clyde to Naples.
Scanned with a Multibeam Sonar system by AFBI Marine Aquatics Team in 2008.

Agri-Food and Biosciences Institute

Annual Report and Accounts

For the year ended 31 March 2009

Laid before the Northern Ireland Assembly
under the Agriculture (Northern Ireland) Order, 2004
by the
Department of Agriculture and Rural Development
on 26 October 2009

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Foreword from the Chair

I am very pleased to introduce the Annual Report and Accounts for the Agri-food and Biosciences Institute (AFBI) for 2008/09.

AFBI continues to develop on all its important business fronts and has had another successful year including a number of significant scientific achievements to report on.

Once again, the AFBI Board has fulfilled its important obligations on corporate governance so that the delivery of high quality scientific services to our customers takes place within a context where the maximum possible standards of good governance are maintained.

From a position of a well-developed understanding of the organisation, the Board continues to strive to promote and reward the right behaviours and values as well as adhering to a regulatory framework.

Our collective aim is to ensure that AFBI maintains and enhances its recognised capability for both the development of new ideas and the reliable delivery of scientific services to customers. This is a key role in supporting and facilitating local government and industry to help ensure Northern Ireland remains competitive. The Board and Executive continue to strive to create an environment in which staff performance and innovation are rewarded to reflect our business imperatives.

AFBI maintains and enhances its work with a wide spectrum of organisations in the public and private sectors locally, nationally and internationally and to maintain and expand this critical element of our strategic business development, we

actively promote the organisation at home and abroad.

DARD remains our largest single customer and commissions around 90% of our programme but we have also been very successful in extending our customer base across both the public and private sectors.

I would like to take this opportunity to thank each of my fellow Board members for their professionalism and support throughout the year, both to myself as Chair and to the Institute. Their combined wealth of experience and specialist knowledge and skills are brought enthusiastically to the Board and are of great benefit and relevance to the overall success of the Institute. The commitment of our Chief Executive Dr George McIlroy is a major factor in our achievements this year and the Board is grateful for the help and support he and the other members of the Executive team have provided.

The multi-disciplinary nature of AFBI and its capability of applying leading-edge science and technology to a wide range of topics within the agri-food sector is its major strength. We have done well in 2008/09 (and I trust this will be evidenced as you read this Report). In conclusion, I remain confident that, even during the current recession, we will be able to grow and expand our local, national and international customer base in 2009/10 and I look forward with well-founded expectations to an exciting year ahead.

Seán Hogan
Chair

Chief Executive's Report

AFBI's overarching aim is to continue to implement strategies for maximising our scientific excellence and innovative approaches to problem solving and the efficient delivery of scientific services to our customers. These services are carried out to the highest possible accreditation and quality standards by skilled and motivated staff, deploying cutting edge technologies.

The increasing recognition of the AFBI brand, as a provider of scientific services, enables us to gradually reduce our dependence on income from DARD. We have a range of public (including the EU) and private sector customers. We continue to devote more effort to managing these customers and on increasing the nature and extent of our customer base. This will assume greater importance as each year passes with increased pressure on DARD and other public sector budgets and the spread of the policy for cost-sharing of services provided to the agri-food sectors.

During 2008/09 we achieved formal recognition within the EU as a valid "standalone" scientific body. This is very significant for AFBI, both in terms of our wider recognition as a relatively new non departmental public body (NDPB) but also in terms of providing direct access to EU research funding. During the current recession and the pressures on national public sector funding and the need for greater efficiency within the private sector, AFBI in fact now has direct access to a significant source of public sector funding that was inaccessible previously. I am pleased to say that we have 7 EU research applications currently under consideration in Brussels.

It is reassuring to note that, at this juncture, we have not

seen any indication of adverse impact of the recession on the level of business with the commercial sector in terms of their readiness (and need) to obtain specialist scientific services from AFBI. This probably reflects the fact that our commercial customer base is not centred on the manufacturing or retail sectors which are the most vulnerable sectors in the early stages of recession. However, we are developing and enhancing our approach to the market and will devote increased staff resources to this aspect within Corporate Services Division.

Some of our notable achievements in 2008/09 include the opening of a new Environment and Renewable Energy Centre at Hillsborough. The Centre has already initiated a wide-ranging renewable energy research programme and continued funding has been awarded from the Innovation Fund to take this forward over the next three years. Another first for AFBI was the holding of our first international conference and exhibition on Renewables in October 2008, with the theme of "Global Issues – Community Solutions". Local and international delegates gathered at the Slieve Donard Hotel to engage with a distinguished list of invited speakers from the United States, Europe, the UK and Ireland.

The signing of a Memorandum of Understanding with the Chinese Academy of Agricultural Sciences, China's largest and most prestigious agri-food research institute is an indication of the standing of AFBI's scientists within the science community. AFBI is the first organisation in the UK to sign a Memorandum of Understanding with the Chinese Academy of Agricultural Sciences.

In 2008 AFBI also received an award of £990,000 from the fourth round of the Public Sector Research Exploitation initiative from the Department for Innovation, Universities and Skills.

During 2008/09, AFBI was called upon to provide rapid and sustained scientific advice and analytical services on the dioxin emergency. This involved intensive work by specialist AFBI staff, working into the night and over weekends to develop sophisticated new tests for polychlorinated biphenyl (PCB) residues in pig and dairy cattle tissues and slurry. I highly commend the AFBI staff involved for their expertise and dedication in demonstrating once again AFBI's unique capability to respond effectively to such emergencies in support of the DARD Minister, the agri-food industry and the wider community. This achievement aligns closely with our corporate objective no. 2 and highlights the type of emergency that AFBI remains on constant alert to respond. Aspects of this work are continuing into 2009/10.

I believe AFBI has come a long way in a relatively short time period. Many of the business approaches that I have referred to are new to us and I am very encouraged

to see how enthusiastically they are being adopted by our skilled scientists who continue to deliver a high quality service in this different and continually changing business-orientated environment. One of AFBI's great strength's is our ability to interpret results, to provide expert advice and to participate in problem solving, across a wide range of disciplines rather than simply completing scientific tests. Our research scientists were engaged in some 116 DARD-approved R&D projects in 2008/09, a significant proportion of which were part-funded by industry and the EU.

I am pleased to report that we are developing Business, People and Estates Strategies. A number of project teams involving individuals from a wide range of grades from across the AFBI divisions are taking this forward to ensure that all staff are able to engage in this process. These are substantive projects that will come to fruition over the next few years (from 2010/11 onwards), although interim work on a "Morale and Motivation" study will provide results in late summer 2009.

It has already been alluded to that customer care is a core element within the Business Strategy and therefore one project team is focusing on the development of policies and mechanisms to enhance the customer care we provide to customers.

Our Corporate Plan and associated Business Plans are based on the assumption that DARD's overall need for scientific services will continue at the same order of magnitude. We must take account of the need for increased efficiency and the evolving policy on cost sharing in the provision of statutory services. AFBI is continuing to work with its public sector customers to agree or refine Memoranda of Understanding (MoUs) and Service Level Agreements (SLAs) that describe and define the work we undertake for them. SLAs provide a mechanism for formally documenting a public sector customer's service requirements and standards from AFBI within agreed budgets. These agreements will also facilitate in-year changes that may arise. We monitor and report on the achievement of performance against targets and budget on a regular basis.

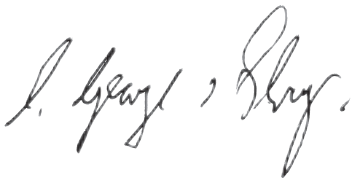
We have five major MOUs in place (QUB, UU, Chinese Academy of Agricultural Sciences, Teagasc, North Carolina State University) and others nearing completion (e.g. UCD). Whilst a significant amount of work on the DARD/AFBI MoU was undertaken in 2008/09 it is anticipated that this will not be signed off until September 2009. The DARD AFBI MoU will provide key information on the provision of core science services, emergency response and research and development delivered by AFBI to DARD. It should however be noted that a number of SLAs already exist for specific areas of work that AFBI undertakes for DARD customers.

One of AFBI's major aims continues to be the maintenance of an emergency response capability (across a range of disciplines and expertise) to DARD and other local and national public bodies. Agreement on the in-year work programme must continue to be reached in the context of maintaining "critical mass" to ensure emergency response capability on a number of fronts, including access to a range of "cutting edge" technologies.

Finally, I must refer to other significant changes to our support systems that will continue to pose a challenge to staff until they are fully embedded in our day-to-day operations. The introduction of HR Connect in late 2008 will continue to impose an administrative load until it becomes trouble-free and fully operational in 2009/10. A major change to our financial systems includes the introduction of International Financial Reporting Standards (IFRS).

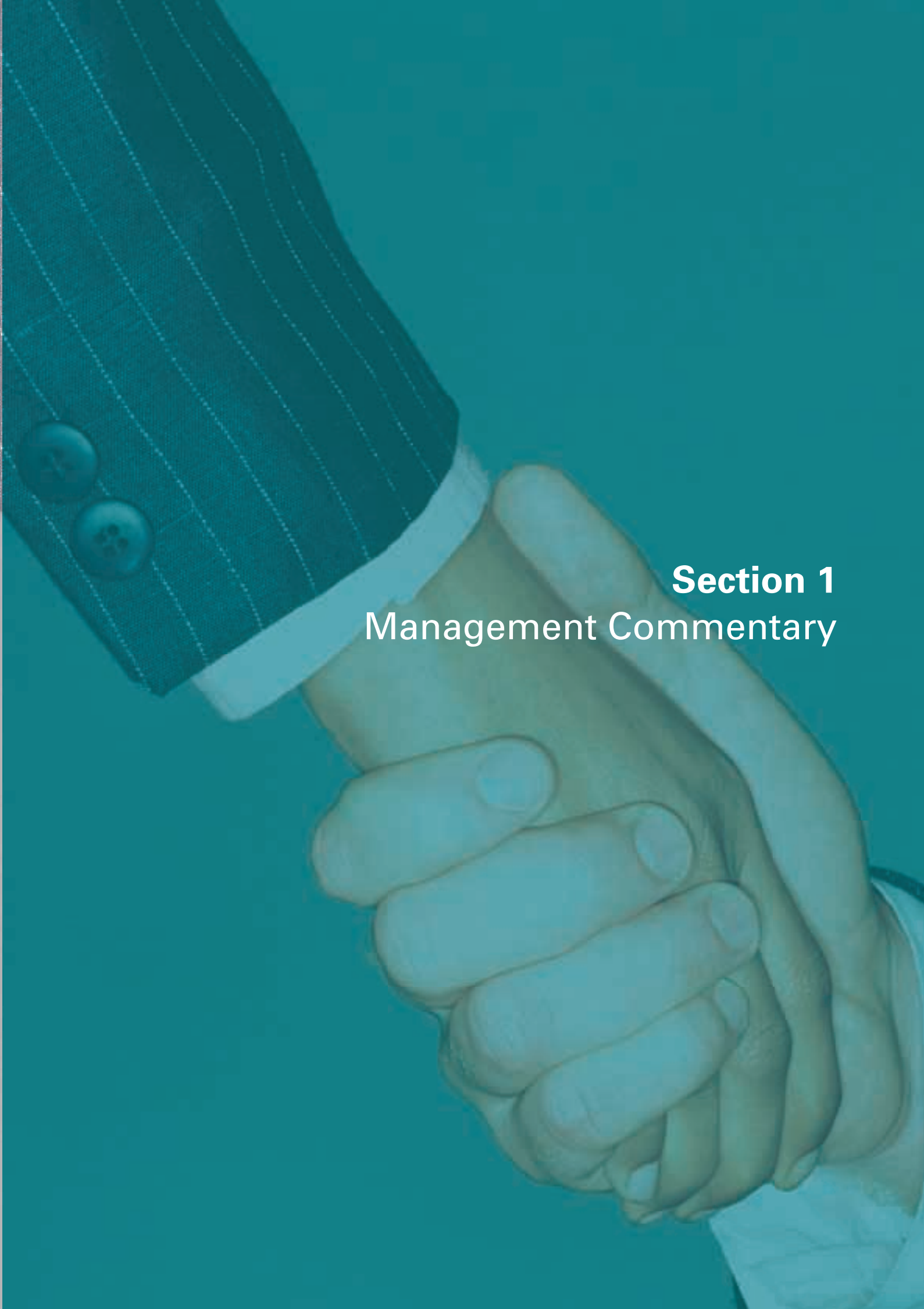
Our 2008/09 accounts are to be restated in accordance with IFRS Standards and from 2009/10 our accounts are to be prepared in IFRS format. Significant work to prepare for the introduction of IFRS was undertaken in 2008/09.

The year 2009/10 will be a busy one as AFBI continues to address its delivery of scientific services to a diverse customer base. We must work hard to enhance our income from non-DARD sources but I am confident that the abilities and enthusiasm of our skilled workforce mean that we are well-placed to achieve our objectives.



George McIlroy MVB MSc PhD MRCVS
Chief Executive and Accounting Officer

30/09/09



Section 1
Management Commentary

Scope

The Agri-food & Biosciences Institute presents its accounts for the financial year ended 31 March 2009. The Institute was formed on 1 April 2006 with the amalgamation of the Department of Agriculture and Rural Development (DARD) Science Service division and the Agricultural Research Institute of Northern Ireland, which was a separate Non-Departmental Public Body (NDPB) funded by DARD. The Institute is established under the Agriculture (Northern Ireland) Order, 2004.

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

To be an internationally recognised and successful centre of excellence for scientific research and services within a sphere of biosciences.

Our Mission

AFBI's mission is to deliver effective, high quality scientific services in the bio-sciences field to local, national and international public and private sector customers.

Corporate Objectives

1. To sustain and grow our business spectrum.
2. To deliver high quality, cost-effective scientific, economic and emergency response services to our customers.
3. To be the preferred partner or contractor in our delivery of local, national and international scientific services.
4. To maintain the necessary skills and resources to be able to provide services, including an emergency response, that meets the agreed requirements of customers.
5. To seek to continually improve the management of our business and deliver services that are value for money.

AFBI has an important role in assisting DARD to achieve its objectives. DARD's objectives are:

Objective 1:

Improving performance in the market.

Objective 2:

Safeguarding animal fish and plant health.

Objective 3:

Maintaining and investing in the environment.

Objective 4:

Building a successful rural economy and society.

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 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 2008/2009 the grant-in-aid amounted to £44.1m (2007/2008: £42m).

Relationship with DARD

AFBI's main point of contact with DARD is the AFBI 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.

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

Relationships with other Government Departments and agencies

AFBI has signed Service Level Agreements to provide services to DCAL and FSANI. It also does a significant body of work for DEFRA and its agencies and NDPB's.

Relationships with educational establishments

AFBI continues to co-operate on projects with both local universities and has also embarked upon developing close working relationships with universities and institutions in the Republic of Ireland, Scotland, India, China and the United States of America.

Marketing

AFBI has also embarked upon strengthening its marketing team in order to enable it to look for wider markets for its specialist services and expertise and to widen and strengthen its income stream.

1.1 Performance

Table 1.1.1 is a summary of outturns against the targets.

Table 1.1.1:
Summary Assessment of Outturns (taken from Business Plan 2008/09)

	Objective	Assessment of Achievement
Target 1.1	To generate income of over £8.5 million from non-DARD sources by 31 March 2009.	
	Milestones:	
	To carry out work on externally funded contracts and accrue income of over £8.5 million from all non-DARD sources by 31 March 2009.	Achieved
	To gain equal recognition with the NI Universities as a knowledge provider through Invest NI and Enterprise "Innovation Voucher Schemes" by 31 March 2009.	Achieved
	To take part in at least one trade mission to raise awareness of AFBI's work and form relationships with commercial companies by 31 March 2009 such that increased commercial business is secured in the longer term.	Achieved
Target 1.2	To communicate the value of AFBI's work to a wider audience of stakeholders.	
	Milestones:	
	To draft a communications strategy for AFBI focusing on increasing customer awareness of AFBI's service provision, by 31 March 2009.	Achieved
	To recruit a Marketing Consultancy (via the CPD Framework system) for a specified time period to address specific marketing objectives.	Achieved
	To publicise AFBI's EU recognition with a launch event during December 2008.	Not achieved

	Objective	Assessment of Achievement
Target 1.3	To develop a Business Strategy by 31 March 2009 that seeks to ensure that existing business is sustained and to expand non-government funded contracts and partnerships.	
	Milestones:	
	■ To identify 3 potential new areas of scientific business by 31 January 2009.	Achieved
	■ To develop a commercial development plan for at least 1 new area of business by 31 March 2009.	Achieved
Target 1.4	We will use Public Sector Research Exploitation funding to develop and implement a strategy for identifying, evaluating, protecting AFBI's Intellectual Property (IP) to enable us to realise a commercial advantage.	
	Milestones:	
	■ To update AFBI IP Policy by 31 March 2009 and develop a commercialisation strategy by 31 March 2009.	Achieved
	■ To identify 3 current AFBI scientific technologies with potential for commercialisation by 31 March 2009.	Achieved
	■ To develop commercial development plans for at least 2 of the above AFBI technologies by 31 March 2009.	Achieved

	Objective	Assessment of Achievement
Target 2.1	To improve AFBI's customer relationship management through SLAs and implementation of customer satisfaction measures.	
	Milestones:	
	By agreeing a Service Level Agreement (SLA) with DARD covering the period 2008 – 2011 by 31 March 2009 delivering the work programme to agreed metrics and within a budget of £30.359 million.	Achieved
	By agreeing a SLA with the Northern Ireland Environment Agency by 31 March 2009.	Achieved
Target 2.2	To conduct a programme of scientific testing in accordance with accredited standards as follows:	

Division	Completion Rates	Turnaround Time	
VSD - Chemical Surveillance Branch Meat Inspection	95%	5 working days	Achieved
VSD - Disease Surveillance Investigation Branch. PMs	90%	5 working days	Achieved
VSD - IDB Brucellosis serology Negatives	95%	3 working days	Achieved
VSD - IDB Non-negatives	95%	5 working days	Achieved
VSD - Bacteriology Brucella testing	90%	3 weeks	Not achieved
VSD - Virology TSE testing	95%	24 hours	Achieved
AFESD all tests	95%	Customer agreed	Achieved
APSBD all tests	95%	Customer agreed	Achieved

	Objective	Assessment of Achievement
Target 2.3	To ensure staff have the skills and training to be able to deliver an effective emergency response to meet agreed customer standards/requirements.	
	Milestones:	
	■ To review and update the AFBI Corporate Contingency Plan defining the emergency response requirements of specific customers by 31 March 2009.	Not achieved
	■ To ensure at least 75% of the appropriate staff undertake the necessary training by 31 March 2009.	Achieved
Target 2.4	To establish a Business Continuity Management (BCM) system within AFBI.	
	Milestones:	
	■ To establish a BCM Project Team and provide appropriate training by 31 March 2009;	Achieved
	■ To commence development of an AFBI BCM Policy by 31 March 2009;	Achieved
	■ To undertake a thorough Business Impact Analysis and Risk Analysis by 31 March 2009;	Achieved
	■ Produce Crisis/Incident Management Plans, Business Continuity Plans and Business Unit Resumption Plans for targeted work areas within AFBI by 31 March 2009.	Not achieved

	Objective	Assessment of Achievement

Target 3.1 To carry out work on commissioned R&D projects in accordance with accredited standards.

Division	DARD	Other NI/GB Departs	Commercial	
AFESD	65	7	40	Achieved
APSD	29	2	24	Achieved
VSD	9	-	12	Achieved
AFEB	7	-	3	Achieved
Total	123	12	79	

Target 3.2 To develop the BioRefining of Grass for Business growth.

Milestones:

- To complete a preliminary "Bench study" by 31st December 2008, to help identify the research opportunities for Grass Bio-refining Project under the Chancellor's Innovation Fund. — Achieved

Target 3.3 To retain ISO for AFBI R&D.

Milestones:

- To continue to lead through Biometrics and Information Systems Branch the ISO accreditation of AFBI R&D up to 31st March 2009. — Achieved

	Objective	Assessment of Achievement
Target 3.4	To increase awareness of AFBI in business and scientific communities.	
	Milestones:	
	■ To participate in 5 major exhibitions (like the National Ploughing Championships and the Balmoral Show) in 2008-09, that are relevant to AFBI's work.	Achieved
	■ To deliver a conference on renewable energy by 31st October 2008.	Achieved
	■ To publish 100 refereed papers in scientific journals during 2008–09.	Achieved
Target 4.1	To prepare a People Strategy by 31 March 2009.	
	Milestones:	
	■ To implement the HR Connect model for personnel support service and disengagement from the Department's personnel support service by 31 March 2009.	Achieved
	■ To implement the HR Connect business partnership model by 31 March 2009.	Achieved
	■ To review the centralization of the staff welfare function within the civil service and therefore the need for AFBI to establish either a service provider or its own in-house service, by 31 March 2009.	
	■ To establish an Equal Opportunities function by 31 March 2009.	Achieved
	■ To manage absenteeism to achieve less than 8.5 days per annum per whole time equivalent by 31 March 2009.	Not achieved
	■ By 31 March 2009 agree a new structure for ICT and Economics branches with the aim of increasing career development opportunities.	Achieved
	■ To agree a Rewards to Staff scheme with DARD by 31 March 2009.	Not achieved
	■ To continue to develop our approach to manpower planning and the effective management of resources to enable continued service delivery.	Achieved

	Objective	Assessment of Achievement
Target 5.1	To manage resources in an effective and efficient manner to enable us to provide services that are competitive and represent value for money.	
	Milestones:	
	■ To introduce a detailed costing system by 31 March 2009 which enables us to establish a benchmark of current unit costs for each category of tests.	Not achieved
	■ To deliver the CSR efficiency savings of £720k by 31 March 2009, through the review of work schedules.	Achieved
	■ To continue to assess AFBI systems and procedures to ensure they are capable of meeting the requirements of Account NI.	Achieved
	■ To further develop and enhance the process of manpower planning.	Achieved
Target 5.2	To further develop Risk Management in the Institute by embedding risk management and planning processes.	
	Milestones:	
	■ To introduce divisional risk assurance statements and an annual validation review by 31 January 2009.	Achieved
	■ Undertake at least 1 self-assessment of the robustness of data security by 31 January 2009 and implement the recommendations from that self-assessment within 3 months.	Achieved

1.2 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 shall ensure 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 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 two or three year periods, with the Chair appointed for four years. The Chair receives an annual remuneration of £24,280 and is expected to commit approximately 40 days per annum to the post. The Deputy Chair receives £10,200 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 £3,672.

AFBI Re-Appointments

The following members of the AFBI Board complete their term of office on 31 March 2009, but as they are eligible for re-appointment, the DARD Minister announced that their term of office had been extended for a further three years until 31 March 2012, effective from 1 April 2009:

Professor David McDowell (Deputy Chair)
Mr James Noble
Mr Michael Walker
Professor Stewart McNulty
Professor Grace Mulcahy
Mr John Rankin

In 2008-09 the AFBI Board members were:

Chairperson Mr Seán Hogan lives in Newry. He is a Masters graduate from Queen's University Belfast in Organisational Management, is a Fellow of the Chartered Management Institute, the Institute of Marketing Management, the Institute of Directors and the Royal Society of Arts. Mr. Hogan is also a consultant with STH Management Solutions Ltd and a Board Member of the Warrenpoint Harbour Authority and the Northern Ireland Transport Holding Company. He is a Commissioner for the Local Health Commission (DHSSPSNI).

Deputy Chairperson Professor David McDowell lives in Carrickfergus. He has a PhD from the university of Ulster and is a Chartered Biologist. Professor McDowell is currently the Head of Food Microbiology at the University of Ulster. He is also Chair of the Advisory Group, ProSafebeef and Vice-Chair of the Safefood Scientific Advisory Committee, a voluntary position.

Mr. Kieran Campbell lives in Newry. He has an MSc in Corporate Leadership and is a Chartered Accountant with 20 years experience in senior finance and management roles. He is currently a principal within a property development and investment business.
Mr Campbell is also a member of the Warrenpoint Harbour Authority.

Dr Michael Hollywood lives in Belfast. He holds a PhD in Atomic Physics, from Queen's University. Dr Hollywood is a self-employed management consultant. He was formerly Head of Scientific Research at the Gallaher Ltd Group.

Dr Christine Kennedy lives in Donaghadee. She has a PhD from the University of Ulster. She is a partner in a dairy and beef farm. She also serves as an Independent Assessor for the Office of the Commissioner for Public Appointments (OCPA) and for management consultants PricewaterhouseCoopers. Dr Kennedy holds numerous voluntary positions, including membership of the UFU's board and chairs Donaghadee Primary School Governors. She is a present member of the DARD Review of Decisions Panel and the Oversight Committee for the Rural Development Programme and Chairman of the Panel responsible for the Appointment of Focus Farms in the Diversification Section. She has previously held a number of public appointments. She was awarded an OBE for services to the NI Dairy Industry and Agriculture.

Mr Nicholas Mack lives in Newcastle. He has an MSc in Agricultural and Rural Policy and over 20 years experience in rural development in Scotland, the Republic of Ireland and Northern Ireland. He was previously the Director of the Rural Development Council's (RDC) Policy and Innovation Research Unit.

Professor Grace Mulcahy lives in Co Wicklow. She qualified as veterinary surgeon from University College Dublin (UCD), from where she subsequently gained a PhD. She is currently Professor of Veterinary Medicine Microbiology and Parasitology at UCD and is a Foundation Diplomate of the European College of Veterinary Parasitology. Professor Mulcahy is also a member of the Veterinary Council of Ireland, a voluntary position.

Mr John McKinley lives in Ballycastle. He has a BAgr and Postgraduate Certificate in Education from Queen's University; completed a Business Start Up programme through the University of Ulster and a Corporate Manager programme with the Industrial Development Board. Mr McKinley runs his own beef and sheep farm and is also a consultant in food products, marketing, tourism and environmental projects. He also works as an agri-environment skills instructor via the Department of Agriculture and Rural Development (DARD) organised workshops.

Professor Stewart McNulty lives in Belfast. He qualified in veterinary medicine from Trinity College, Dublin, from where he also gained a PhD. Professor McNulty retired as Chief Veterinary Research Officer with DARD Science Service in 2001. He is currently a member of the Health Promotion Agency Board, NI, a voluntary position.

Mr James Noble lives in Newtownards. He has an MSc from Queen's University and several qualifications in dairying. Mr Noble has previously held a number of public appointments and is currently a Board Member of the Livestock and Meat Commission and Chairman of the Northern Ireland Transport Holding Company Pension Trustees.

Mr John Rankin lives in Newtownards and has run his own dairy farm for over 40 years. He is a former President of the Ulster Farmers Union and a former ARINI Trustee, a voluntary position. He is currently a member of the Agricultural Wages Board and Chairman of NFU Mutual NI Regional Board.

Mr Michael Walker lives in Newtownabbey. He has an MSc from Queen's University and is a Fellow of the Royal Society of Chemistry (RSC). He holds the RSC's Masters degree in Food, Drugs and Water. He is a self-employed consultant on food and water issues, civil and criminal litigation. Mr Walker has held a number of public appointments in recent years and is currently a member of the NI Food Advisory Committee of the Food Standards Agency.

Board Sub-committees

There are two sub-committees of the Board.

Remuneration Committee

The remuneration committee is a non-executive advisory committee whose role is to advise the Chair of the AFBI Board in respect of remuneration of the Senior Executive Officers. Whilst, the terms and conditions of employment and remuneration of AFBI employees are within the overall NICS terms and conditions of employment any proposed changes within this overall framework will be subject to review by the Remuneration Committee. During the year, the membership of the remuneration Committee was:

Non-executive Chair
Professor David McDowell

Non-executive Director
Dr Christine Kennedy

Non-executive Director
Mr Kieran Campbell

Audit and Risk Committee

The Audit Committee advises the Board and Accounting Officer on issues of risk, internal control, governance and any material items affecting the accounts. The Audit and Risk Committee is a sub committee of the AFBI Board and is an independent advisory committee with no executive functions. During the year, the membership of the Audit and Risk Committee was:

Audit Committee

Non- executive Chair
Dr Michael Hollywood

Non-executive Director
Mr John Rankin

Non-executive Director
Mr Kieran Campbell

Other Attendees

Head of Internal Audit
DARD Internal Audit
Northern Ireland Audit Office
AFBI Sponsor Branch
Chief Executive Officer AFBI
Head of Business Support Unit AFBI
Head of Chief Executive's Office AFBI

1.3 Management Board

The Management Board of the Institute was as follows:

Chief Executive Officer	**Dr George S McIlroy**
Deputy Chief Executive Officer	**Dr Sydney Neill**
Deputy Chief Executive Officer	**Dr Michael Camlin**
Deputy Chief Executive Officer	**Dr Seamus Kennedy**
Head of Chief Executive's Office	**Dr Robin Boyd***
Head of Business Support Unit	**Mr Stephen Dolan** (until 31 10 08)
(Acting) Deputy Chief Executive Officer	**Dr Arthur Gilmour** (from 10 09 08)
(Acting) Deputy Chief Executive Officer	**Dr David Bryson** (from 15 12 08)

**Dr Robin Boyd took over responsibility for the Corporate Services Division (incorporating both the Chief Executive's Office and the Business Support Unit) from 24 November 2008 and was temporarily promoted to Acting Deputy Chief Executive Officer from 15 December 2008.*

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

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 the Assembly for AFBI's use of resources as set out in the Management Statement and 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.

Details of significant interests held by the Management Board members

The Management Board Members do not hold any other directorships nor any other significant interests which may conflict with their management responsibilities.

1.4 Financial Matters

Remuneration of auditors

The auditors did not carry out any non-audit work.

Financial results for the year

AFBI's operating cost statement shows a net operating cost of £40,426k (2007/2008: £47,432k). Within this net position AFBI raised income of £11,933k (2007/2008: £8,240k). During the course of the year AFBI identified additional income streams from existing partners by clarifying the commercial relationship between AFBI and its customers. Service level agreements are agreed with FSANI and DCAL securing funding in these important areas of work. AFBI presented monthly financial reports to the AFBI Board and reviewed expenditure against budget at the Senior Management Team Meetings to ensure that AFBI's expenditure did not exceed its budgeted resources. This reporting mechanism is subject to review, a number of improvements were identified in year and a business transformation project established to implement a new time recording and costing system and a new HR system.

At the year end the net assets of AFBI is £7,739k (at 31st March 2008: £5,541k).

Treatment of pension liabilities

The treatment of pension liabilities is described in the accounting policy Note 1 on page 89 and under the heading of Civil Service Pensions in the Remuneration Report on page 75.

Loss of PC

During the year, it was discovered that a PC was missing at AFBI, Omagh. Investigations by the Business Systems IT Manager revealed that there had been no loss of sensitive data as a result of this loss.

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

Over the next three years AFBI faces increasing payroll costs, increase in utilities and increasing costs of animal feedstuffs. 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 widen its funding base and increase its level of funding year to year. AFBI is implementing a revised business and science strategy to maximise AFBI's commercial role and maintain its customer base. AFBI continues to develop its relationship with Invest NI and the EU to realise significant new sources of funding through these agencies.

1.5 Other Matters

Career Development

AFBI carried out revisions to the structure of Biometrics and Information Branch and Agricultural and Economics Branch. These reviews took into account the changing work demands following the creation of AFBI and the skills required. The result is improved career structures in both Branches. AFBI undertook an assisted review of its Human Resources Policies and consulted a range of staff across the divisions in respect of career development. The resulting report highlighted many areas where improvements can be made. A draft People Strategy was prepared based on the findings of the report. The key messages will be disseminated to staff and the recommendations implemented during 2008-2009 following approval by the AFBI Board.

This year a total of 11 staff in the scientific discipline achieved promotion.

Recruitment

AFBI continues to develop its workforce in line with its business aims which has resulted in a total of 210 new appointments this year, covering grades across the scientific, administrative and industrial disciplines. This number reflects both permanent and temporary appointments.

Sickness absence data

In 2008/2009, the sickness absence data in AFBI was 9.1 average days lost.

HR Connect

DFP Internal Audit conducted a review of the HR Connect payroll service prior to go live focusing on the documented operating procedures for shared service centre and NICS staff and provided a satisfactory level of assurance in these areas. However, Internal Audit has not undertaken any direct work since the HR Connect Service went live in November 2008.

The internal audit of the HR Connect service in 2008-09 was undertaken by the main contractor, in accordance with contractual provisions. A set of internal reports have been received from the main contractor, including a review of actual controls against expected controls in respect of the non-industrial payroll system. These have been reviewed by Corporate HR and DFP Internal Audit who are satisfied that although some weaknesses have been identified these are being addressed by Capita and Fujitsu. Corporate HR has also welcomed the establishment of a monthly forum at which Capita and Fujitsu will discuss progress on issues raised in these reports and will monitor progress on the implementation of recommendations. DFP Internal Audit will be conducting direct audit work in HR Connect during 2009-10.

Many of the services provided to AFBI by HR Connect were unacceptable in 2008/09. Whilst recruitment services did attain a satisfactory standard, payroll and other aspects fell far short of the standard required. Shortcomings posed a significant threat to our business requirements, induced stress and undermined the well-being of many AFBI staff and imposed a significant additional cost burden to the Institute. The Chief Executive has introduced a series of measures in an attempt to lessen these adverse impacts but the problems lie within HR Connect and cannot be resolved by AFBI. At the time of writing a limited improvement can be detected in the situation and as yet not all of the on-line services are operational, despite releases having gone live.

Environmental

AFBI is developing terms of reference for the management of its impact on the environment. A specific appointment will be made to manage this important aspect of AFBI's operations.

Social

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

Internal Audit

An independent firm of auditors provides internal Audit services to the AFBI Accounting Officer and provides senior management and the AFBI Audit and Risk Committee with assurances of the adequacy of AFBI's systems of internal control and risk management. The DARD Internal Audit Unit complements the AFBI Internal Audit resource by completing specific tasks and undertaking a quality assurance role. The internal audits of AFBI 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 associated risk registers subject to scrutiny by the Institute's Internal Auditors. Risks are reviewed monthly at a divisional level and reported monthly on an exception basis to the SMT and the AFBI Board. The Corporate Risk Register is reviewed quarterly by the Audit and Risk Committee and Internal Audit reviews the risk management process every year.

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 Sponsor Branch.

Compliance with HM Treasury Code of Good Practice on Corporate Governance

AFBI complies with the HM Treasury Code of Good Practice on Corporate Governance and generally complies with the Combined Code on Corporate Governance 2003. 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.

In 2008/2009, before the target was revised in October 2008, AFBI paid 91.9% of matured and properly authorised invoices were paid in accordance with the terms of the contract or within 30 days. Post revision of the target, AFBI managed to pay 92.5% of the invoices in accordance with the agreed terms or within 10 days.

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 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 the Assembly. The annual fee for the audit of financial statements for 2008-2009 was £30,000 (2007/2008 £44,000).

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 Office, 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.

Section 2
AFBI Science

2.1 Our activities

Statutory work

Statutory analytical and diagnostic work is carried out under EU Directives and local and national legislation. It plays a critical role in:

- facilitating rapid diagnosis and control of major animal disease outbreaks;
- detecting changing animal disease patterns and emergence of new diseases;
- detection of animal diseases and infections posing a risk to human health;
- food safety;
- plant health;
- fish stock management.

It consists of:

- provision of a specialised disease diagnostic service for veterinary practitioners, poultry organisations and fish farmers in Northern Ireland;
- provision of analytical testing to monitor the freedom of Northern Ireland food producing animals from notifiable and exotic diseases and from illegal concentrations of veterinary drugs;
- statutory testing services on a range of food products, environmental samples and animal feed components;
- provision of an analytical advisory/ diagnostic service for the local food industry;
- analytical services relating to residue testing, including shellfish monitoring, fish monitoring and national surveillance programmes in food chemistry;
- food irradiation detection, radionuclide analytical and radiation monitoring services;
- provision of an analytical advisory/ diagnostic and a sensory evaluation service for the local food industry;
- statutory activities associated with the legislative control, market release and innovative exploitation of varieties of the primary commercial plant species in Northern Ireland;
- UK testing centre for distinctness, uniformity and stability (DUS) for new varieties of herbage crops;
- UK National List Trials for herbage and the major cereal crops;
- Recommended List Trials for all the major grass, clover and cereal crops and potatoes;
- provision of a specialist analytical and diagnostic service to the N. Ireland Horticultural Industry;
- surveys to monitor plant pests, weed and disease incidence, fungicide resistance and pesticide usage;
- statutory and advisory diagnostic tests for scheduled crop pests, Potato Cyst Nematodes, bees, seed diseases, forest pests and diseases and potato wart and virus diseases;
- assessment and rational management of marine commercial fish stocks.

Research and Development

- In addressing the research objectives of DARD and our other customers, we provide a sound, scientific basis for government policy on agriculture and the environment and also underpin commercial development in the agri-food private sector.

In managing our R&D programme we:

- maximise interaction in order to achieve value for money and to ensure that, where possible, multiple objectives can be addressed simultaneously;
- manage programmes flexibly to ensure that both short and long term goals can be achieved and delivered effectively;
- together with the customer, review our R&D programmes regularly to ensure that they:

- meet customer requirements;
- are conducted to the highest quality standards;
- address scientific opportunities;
- deliver agreed outcomes effectively and efficiently;
- develop relevant national and international collaboration;
- protect and manage any intellectual property that arises.

AFBI Innovations

AFBI secured an award of £990,000 from the Public Sector Research Exploitation Fund (PSRE) which is managed by the Department of Innovation, Universities and Skills (DIUS) on behalf of government. The award will be used over a period of three years to support the commercial exploitation of new technologies and commercial services originating from AFBI's science base.

The funds are being used to assess commercial opportunities and, where appropriate, to protect intellectual property and support opportunities to a point where they can generate commercial revenues. This support is being delivered through the newly created AFBI Innovations Unit within Corporate Services Division.

The role of AFBI Innovations is to support staff in developing commercial opportunities, this includes:

- Drawing out commercial opportunities from the research base
- Supporting in terms of IP protection
- Support staff in assessing and validating market opportunities
- Support in developing commercialisation plans
- Managing the exploitation of commercial assets

AFBI Innovations is also working with AFBI staff to promote commercial services to potential customers and acts as a gateway for potential customers contacting AFBI for the first time. AFBI's client list in the agri-food sector has grown significantly over the last year as more companies make use of its facilities and experts.

2.2 AFBI Divisions

AFBI has 3 main scientific divisions and a specialist economics branch:

Agriculture, Food and Environmental Science Division (AFESD)

AFESD undertakes basic, strategic and applied multidisciplinary research, relevant to achieving efficient and responsible practices in sustainable farming, food, fishing and aquaculture industries, whilst conserving and enhancing the terrestrial and aquatic environments and thus supporting Northern Ireland's rural communities.

Applied Plant Science and Biometrics Division (APSBD)

APSBD undertakes basic, strategic and applied research in the plant sciences which, taking into account implications for the environment, aims to underpin sustainable economic growth and development in the countryside of Northern Ireland. It also provides a professional Statistics and ICT service for the Institute as a whole.

Veterinary Sciences Division (VSD)

VSD undertakes basic, strategic and applied multidisciplinary research in animal health and food safety which aims to underpin sustainable economic growth and development of the agri-food industry in Northern Ireland.

Agricultural and Food Economics Branch (AFEB)

AFEB is a specialist unit within AFBI which provides a strategic socio-economic modelling, knowledge transfer and decision support service for a wide range of customers in government, NGOs and the private sector, nationally and internationally.

The following sections of the report provide examples of scientific and economic work carried out during the year and have been selected to provide an overview of the nature and extent of the science conducted by AFBI.

2.3 Science Articles

Salad varieties of potatoes

AFBI Crossnacreevy has been evaluating potato varieties with characteristics suitable for salads since 2003. Management of salad potatoes is different from that of First Earlies, Second Earlies and Maincrop varieties. Husbandry particular to salad varieties includes planting at a narrower spacing, (15 cm compared with at least 30 cm), removing the haulms much earlier to stop tuber growth at the desired size of < 90 mm in length and between 25 and 40 mm diameter, and leaving the potatoes for up to 6 weeks before lifting to allow the skins to set. Otherwise management priorities for salad varieties are similar to those for Second Early and Maincrop varieties: to ensure freedom from blight and other diseases which affect the skin and the flesh of the tubers and to minimise damage during and after harvest.

Salad varieties are evaluated over 3 years where possible with the agreement of the breeder or their agent. A total of 14 varieties have been evaluated for 3 years or more in trials to date. As well as weight and numbers of tubers in each grade – 25-35, 35-40, 40-45 and >45 mm – diseased tubers, defects – green, misshapen, cracked and mechanically damaged – are assessed at harvest. Eating quality – dry matter, disintegration, mealiness, presence of fibres, cooked flesh colour, type and strength of off-flavours – is assessed after harvest. Skin quality is important for marketing of all potatoes but particularly so in salad varieties where overall 'disease and blemish' and skin 'brightness and freshness' are assessed along with specific scoring of common scab, powdery scab, silver scurf, black scurf and skin spot. The presence of internal defects, namely, vascular discolouration, internal rust spot and anthocyanin pigmentation are checked. External tuber features – shape, shape uniformity, size

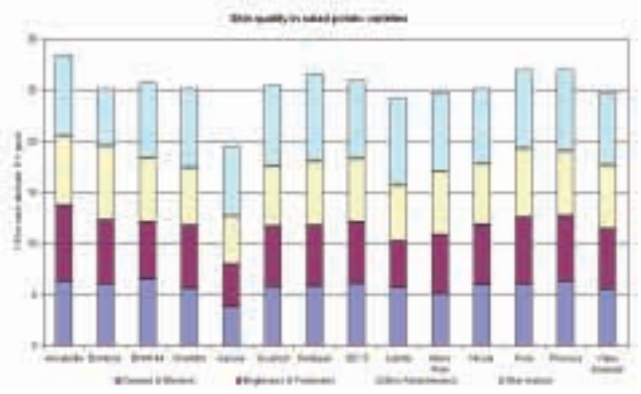
uniformity, skin attractiveness, skin texture and eye depth are also assessed to provide a complete picture of the varieties.

Yields in the 25-35 and 35-40mm grades are most suitable for the retail markets but since bulking up of the tubers can be manipulated by date of haulm destruction, yields in the larger grades are recorded and provided as an aid to management.

Skin quality is important in salad potatoes and a number of attributes are relevant. A summary of four attributes: disease & blemish, brightness & freshness, skin attractiveness and skin texture, shows that whilst varieties vary in each attribute, most have acceptable skin quality. Annabelle stands out with having excellent all-round skin quality whilst Gasore has poorer than average quality.

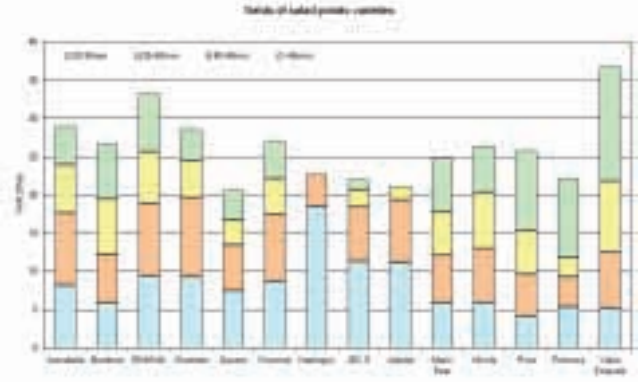
Performances of salad varieties with these and other characteristics are made available to the industry for use in their decision-making.

(a)



Performance of salad potatoes in (a) skin quality and (b) yield

(b)



The Bramley apple

The development of sustainable farming methods is a key aspect of AFBI's research programme. At AFBI Loughgall, new technologies based on engineering and agrochemical use will benefit both producers and consumers. For example; the use of tunnel sprayers (which significantly reduce pesticide loss into the environment) is currently being evaluated.

Tunnel sprayer in use in the high density trellis Bramley system

AFBI trials have shown that Bramley's on dwarf rootstocks planted at high densities can markedly increase the potential yield and profitability for local growers by increasing farm gate sales. AFBI had demonstrated in earlier tree density experiments that tree numbers per hectare could be considerably increased above the current industry norm with a corresponding increase in yield and profit. A major new experiment looking at Bramley growing on a wire trellis system has been established at Loughgall. The densities range from 1900 trees per hectare (790 trees per acre) to 3800 per hectare (1600 trees per acre). Monitoring the growth of the trees and yield development, against costs of establishment and production, will make it possible for the first time to determine the optimal planting density for Bramley apples grown under local conditions. The industry has identified the concentration on Bramley production as a potential strategic weakness and research is currently underway to broaden the range of apple varieties, thus increasing diversification within the rural economic base. The major apple breeders in Europe have agreed to release their material for trialling under local conditions. Of particular interest is the East Malling collection of new dessert apples which have been selected for disease resistance in addition to flavour and colour. This represents a major development

for the local industry as the reduction of locally grown dessert varieties has been the most significant loss to apple growers over the last fifty years.

Education programmes ensure that the research results are adopted by the farming community. This is achieved through co-operation between AFBI scientists and CAFRE technology transfer staff.

AFBI Loughgall is the only apple research unit in Ireland and AFBI and Teagasc have signed a "Memorandum of Understanding" for co-operation between the two organisations. Future apple research projects will be coordinated between AFBI Loughgall and Teagasc Kildalton, thus increasing the efficiency of delivery of the work for both sponsoring bodies.

The Northern Ireland farm business survey

The farm business survey (FBS) is an annual survey of commercial farm businesses which is conducted throughout all EU regions. The objective is to monitor changes in the economic performance of agricultural and horticultural producers in the EU regions, and in particular to assess the impact of EU policies on national economic farm performance and individual farms within member states.

While each EU region is free to conduct their own surveys to gather regional specific information, an EU-wide data standard specifies a minimum survey requirement for all member states so that economic comparisons can be made across states and regions. These statutory requirements are set by the Farm Accountancy Data Network (FADN) which defines the general methodology, the information to be collected, the farm enterprise types, and the minimum farm size. It also collates the data from member states into a central database.

In the British Isles separate regional surveys are carried out by England and Wales, Scotland, Republic of Ireland and Northern Ireland.

The Northern Ireland farm sample

In Northern Ireland annual the survey data from a minimum of 350 farmers make up the sample of participating farms. The holdings selected include a representative sample of typical farm businesses, chosen using a stratified random sampling design on the basis of each farm's main farming business type and economic farm size.

The sample includes mostly the same farms from year to year, so that annual changes can be accurately assessed.

Statistical Analyses and outputs

Statistical analyses and database tasks are performed using a suite of computer programs developed and maintained by AFBI Biometrics & Information Systems Branch.

Estimates of the Northern Ireland population means and totals are produced by applying statistical weights which are calculated using the ratio of the total known number of farms and the number of farms participating in the sample within each economic farm size group and farm business type.

The outputs include:

1. Farm level data of approximately 1000 selected data items per farm. These are used by the EU for further analyses showing regional comparisons.

2. Annual Review tables compare estimated mean figures of key items for the current and previous financial years for each farm business sector and across the whole Northern Ireland farm economy.

3. Current Year Tables are produced which show detailed farm business account level reports for a wide range of economic inputs and outputs for various farm business types.

4. A Farmer's account is provided for each participating farmer. This printed accounting report details the financial performance of each enterprise on the farm and can be used as part of the farmer's annual financial accounts.

AFBI provides statistical, operational and software support. Software changes are carried out regularly to modify the reports produced by the system. This is done in response to changes in requirements and/or agricultural policy changes in DARD or EU.

Published outputs

The resulting figures are used by DARD to inform farm policy by monitoring the average total annual farm income of different farm enterprises (e.g. Beef, Dairy). The survey is used to provide estimates of the profitability and economic margins of local farm enterprises through estimates of average annual net farm income and whether these have been affected by policy changes.

Results are published annually online and in various DARD publications. The results are also used by DEFRA, the agricultural industry and for further farming economic research.

Bees and agriculture

Bees contribute to agricultural production by two means. Honey and bee products (wax, royal jelly, propolis or bee resin) constitute marketable commodities in their own right and honeybees, bumblebees and solitary bees are essential pollinators in the agri-ecosystem. It is estimated that one-third of the human diet is derived directly or indirectly from insect-pollinated crops.

Pollination of apple blossom

Within Northern Ireland, beekeeping is mainly a hobby or cottage industry activity with around 800 participants. Few beekeepers operate on a wholly commercial basis. Nevertheless, bee products contribute an estimated £220,000 to the Northern Ireland economy, with Irish honey demanding a premium (more so with specialist honeys such as those from heather or hawthorn).

The economic value of bee products is dwarfed by the contribution of bees to the pollination of crops. In Northern Ireland, soft fruits, oilseed rape, tomatoes, clover and beans benefit from bee pollination. Given the value of these crops and their requirement for insect pollination, bees contribute an estimated £6 million to agricultural production. For the Bramley apple industry in Armagh and Tyrone, insect pollination is particularly important to ensure proper fruit development. The Bramley apple is a triploid variety, which means that its pollen is sterile. It therefore requires another compatible variety, termed a polliniser, to be grown in the same orchard. Consequently, although wind pollination does occur in orchards, insects are considered responsible for 90% of apple pollination.

Bees in agriculture are under threat from many sources: changes in agricultural practice, habitat loss, pesticides and imported pests and diseases. In addition to the honeybee, there are about 100 other species of bee in Ireland and approximately 30% of these are threatened.

Varroa mites on honeybees

Work in AFBI is mainly concerned with safeguarding honeybee health by providing scientific and laboratory support to beekeepers and DARD's bee health inspectorate. Typically, a sample of bees or comb is submitted by a beekeeper or inspector and adult bees are examined for the presence of varroa mite. This mite is a natural parasite of the Asian honeybee in South East Asia. It has since spread worldwide, where it causes major problems when it attacks the European honeybee. It was first detected in England in 1992, in Ireland in 1998 and Northern Ireland in 2002. The mite is comparatively large compared to its host and feeds directly on the bee's haemolymph (blood) as well as vectoring several viral diseases. If varroa is not controlled, colonies collapse within 1-3 years. Another development is that of insecticide-resistance in varroa mites, which could render control for this most devastating of parasites, ineffective.

Adult bees are then examined for the presence of acarine disease, which is also caused by parasitic mites (*Acarapsis woodi*). In this case, these are minute mites that live in the bees' trachea or airways. Diagnosis of this disease is by examining the primary trachea under the microscope. In infested bees, mites give the normally white trachea, a banded or 'bar-coded' appearance. Another common disease is nosemosis, caused by the microsporidian parasite *Nosema apis* (and more recently *Nosema ceranae*).
The disease causes increased mortality, poor honey yields, colony dwindling and is associated with bee dysentery. Diagnosis involves examining an abdomen extract under a compound microscope for the typical rice shaped spores.

Brood diseases, American and European foulbrood (*Paenibacillus larvae* and *Melissococcus plutonius*) are notifiable diseases under the *The Bee Diseases and Pests Control Order (Northern Ireland) 2007*. These are bacterial diseases that kill the bee larvae within the hive. As these diseases can result in colonies being compulsorily destroyed, proper identification is vital. This is done in the laboratory through visual inspection of the comb and infected larvae, coupled with microscope identification. Increasingly though, molecular and serological methods are being utilised.

These are only a few of the diseases which can affect honeybees, for example, many of the viral diseases are little known and have no treatments. Potential pests include the small hive beetle (*Aethina tumida*), which is native to Africa but has devastated honeybee colonies in the USA and Australia.

'Barcoding' on the trachea signifies the presence of acarine mites

Plant quarantine

Non-native plant pests and diseases represent a serious threat to Northern Ireland agriculture, horticulture, forestry and the local environment. While most pests and diseases are not regulated by government (non-quarantine pests), an increasing number of these organisms are subject to official quarantine controls. These plant quarantine pests include fungi, bacteria, viruses, insects or nematodes which are either absent or not widespread in a region and action to exclude, contain or eradicate them is co-ordinated across the European Community through Council Directive 2000/29/EC which sets out the necessary restrictions and protective measures.

Key to this process is the detection of the quarantine organisms and approved protocols must be followed to ensure that identification is accurate and effective. Working with DARD plant health inspectors, AFBI staff regularly receive plant material which is tested using a range of methods. Increasingly, identification of quarantine organisms is based on DNA analysis.

Detection of Phytophthora pathogens using real time PCR

Sudden oak death

Phytophthora ramorum is a fungal-like pathogen which is the causal agent of the woodland disease Sudden oak death. The pathogen, first found in the UK in 2002, was detected on established plants in a Northern Ireland garden during 2007. Imported plant material showing disease symptoms is routinely tested using microbiological methods and a DNA method known as real time PCR (polymerase chain reaction) which can detect and quantify very small amounts of pathogen in plant material. Recently, a related pathogen, *Phytophthora kernoviae*, was detected in Great Britain and the Republic of Ireland and AFBI staff also use PCR to monitor plant material for this organism.

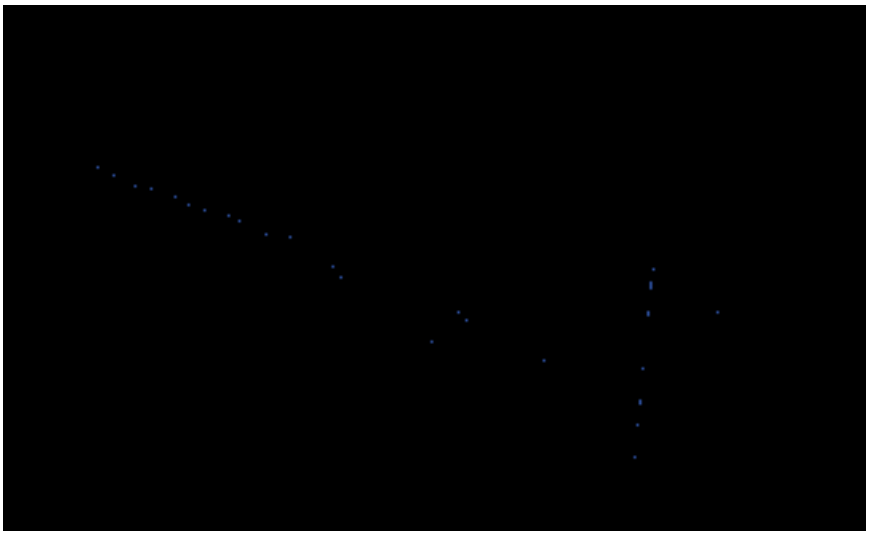
Forest insects

EU quarantine lists include a number of forest insect pests. These are often intercepted in imports of timber and timber products and they may cause damage to trees directly or by acting as vectors for other quarantine organisms. Identification using DNA methods is particularly effective as insect larval stages can be screened and identified without the need to wait for adult insects to develop. AFBI staff are currently developing DNA tests which will enable the rapid identification of native and quarantine forest insects.

DNA profiles of 10 forest insect species

Fireblight

Fireblight (*Erwinia amylovora*) is a serious bacterial disease of apples, pears, hawthorn, rowan and related trees and shrubs. The disease is native to North America, and was introduced to Europe in the 1950s. Although fireblight is now present in a large part of Europe including the UK, it is listed as a quarantine disease in order to prevent the disease moving, particularly into designated EU protected zones such as Northern Ireland which is still regarded as free from the disease. Regular monitoring of imported plant materials and suspect cases from the local countryside is essential to maintain Northern Ireland's fireblight free status.



Real time PCR indicates the presence and level of fireblight pathogen in plant samples. Sample PCR signals reaching a threshold level within 40 PCR cycles are regarded as positive for fireblight.

UK National Reference Laboratory for marine biotoxins

Marine biotoxins are a diverse group of chemicals, produced naturally by marine phytoplankton, which accumulate in the tissues of shellfish and which can cause a range of food-borne illness in man. The main toxin groups are those responsible for Diarrhoeic Shellfish Poisoning (DSP), Paralytic Shellfish Poisoning (PSP) and Amnesic Shellfish Poisoning (ASP).
In the UK National Reference Laboratory (NRL) services for marine biotoxins are provided by AFBI. In this role, AFBI is responsible for the co-ordination of the activities of the official control laboratories and the dissemination of information from the Community Reference Laboratory (CRL) and the competent authority. It also provides technical and scientific advice to the competent authority and undertakes to provide relevant services which fall outside the specifications of the contract.

Coordination of the activities of the UK laboratories is managed via the UK-NRL Marine Biotoxin Network.
Two examples of the issues initiated through the network meetings are the review of all NRL-issued standard operating procedures for biotoxin analysis and a report on the use of bivalve molluscs as an indicator species for the presence of biotoxins in gastropods. AFBI acted in an advisory role to Food Standards Agency Scotland on its review of marine biotoxin monitoring in Scotland, attending working group meetings in Aberdeen, Glasgow and Edinburgh.

AFBI has worked closely throughout the year with the CRL on the development of LCMS and HPLC methods for lipophilic toxins and paralytic shellfish toxins. AFBI successfully participated in all proficiency tests organised by the CRL and disseminated the results and reports to the UK NRL network. AFBI coordinated the collation of data on marine biotoxin testing in the UK for submission to the European Food Safety Authority and sat on the subsequent CRL working group on the EFSA report on lipophilic toxins.

Salmonid Alphavirus (SAV)

SAV is the causal of agent of pancreas disease and sleeping disease in farmed Atlantic salmon and rainbow trout respectively. These diseases are currently creating significant problems in European aquaculture. AFBI has a long and successful track record of work with this pathogen. AFBI, Stormont was the first laboratory in the world to isolate SAV and to confirm it as the cause of pancreas disease. Since then, work within an EU project led to the development of new diagnostic tools for virus isolation and detection of antibodies in recovered fish.

Based on these methods, AFBI has now amassed the largest collection of virus isolates in the world, and this in turn has allowed the largest study to date of strain diversity to be performed, identifying the existence of at least 6 different viral subtypes. Other research work has generated novel data on viral susceptibility to disinfectants and the biophysical properties of the virus, including susceptibility to extremes of temperature and pH and survival in different types of water. This in turn has been fed back to industry and has been incorporated into management strategies for control of infection, as well as providing novel data that support the hypothesis that infection is primarily spread horizontally between sites through water.

AFBI has also introduced real time RT-PCR for the rapid detection of virus. This molecular diagnostic method, accompanied by virus isolation and detection of antibody, is now offered commercially to the aquaculture industry and is increasingly becoming their standard for both diagnosis and routine surveillance of sites to detect new outbreaks. So far this has been used mainly by companies in Ireland and Scotland, but submissions from Norway are also increasing. In addition, the laboratory recently successfully applied real time RT-PCR testing to broodstock salmon as a pre-export requirement for the sale of eggs to Chile. Altogether this work has generated significant income to AFBI.

Tapeworm cysts in lamb carcases

Larval stages of the tapeworm *Taenia ovis* were detected in two lamb carcases. The carcases were part of a batch of lambs, several of which had been condemned at meat inspection. Numerous spherical caseous abscesses approximately 3 millimetres in diameter were seen throughout the musculature. A few of the lesions contained clear, fluid-filled cysts which could be removed by blunt dissection. Microscopic examination of these cysts revealed the scolex of a metacestode.

Taenia ovis is a tapeworm of dogs and wild canids. Sheep are the intermediate hosts and become infected when exposed to food or water contaminated by *Taenia ovis* eggs. About 4 to 5 weeks after consuming the eggs, the infective cysts develop in the myocardium and skeletal muscle. At about 3-6 months after ingestion, most of the cysts die and form caseous abscesses which can be detected as white spots at meat inspection. The larval cysts do not infect humans, but affected carcases are condemned at meat inspection.

Control is by regular worming of farm dogs with an effective anthelminthic, careful disposal of dog faeces and prevention of scavenging of sheep carcases by dogs.

Scolex of Taenia ovis

Emergency Response: PCB and dioxin contamination in cattle

PCBs (polychlorinated biphenyls) are a group of 209 closely related chemicals that have been used widely in industry, primarily in electrical transformers and as heat exchange fluids. Because of their toxicity and persistence in the environment, the manufacture and general use of PCBs is no longer permitted.

Dioxins are a group of 210 closely related chemicals that are not manufactured intentionally but occur as by products of some industrial processes and are formed naturally in various combustion processes including forest fires and the burning of fossil fuels. Dioxins are highly toxic and the EU has stipulated legal maximum levels in food for human consumption. Because of their stability and ability to accumulate in human and animal tissues these compounds pose a threat to the health of species at the top of food chains.

It is important to exclude these dioxins from animal feed so that they do not accumulate in the tissues animals and then in the tissues of meat-consuming humans. As both groups of chemicals have similar properties and tend to accumulate in similar locations. The presence of one is often an indication that the other compounds are also likely to be present.

On 6 December 2008, the authorities in the Republic of Ireland announced an immediate recall of all Irish pork produced since 1 September 2008. Routine surveillance had revealed high levels of PCBs in a sample of pork in November. The presence of high level PCB contamination triggered analysis for dioxins as both groups of chemicals are often found in similar circumstances. Dioxins were also found at high levels.

The normal level of surveillance sampling for PCBs required AFBI to analyse approximately 10 samples per week. However, given the seriousness of this feed incident, our

response was enhanced to cope with a potential of 50 samples per day. This was a major increase in capability and necessitated a concerted and sustained additional effort by AFBI staff. Samples of beef kidney fat, feed and milk were analysed for PCBs.

AFBI also coordinated the delivery of selected samples to the Central Science Laboratory (CSL), York, for dioxin analysis. CSL is one of the few laboratories in the British Isles accredited for analysis of both dioxins and PCBs in animal products. The results of PCB analysis produced by AFBI were in excellent agreement with results from CSL.

In a previous contamination incident in Belgium, the ratio of PCBs to dioxins was approximately 50,000. In this recent incident, this ratio was closer to 200. This meant that the identification of the most "at risk" samples by PCB analysis required detection to a lower limit of detection. AFBI developed a new analytical method capable of greater sensitivity (a change from 10 ppb (parts per billion) to 0.5 ppb) to identify contaminated samples using the PCBs, 138, 153 and 180.

Results showed that not only was there a significant impact on a number of farms in NI but also the potential for a serious impact on the environment in the disposal of slurry from farms affected by the contaminated feed.

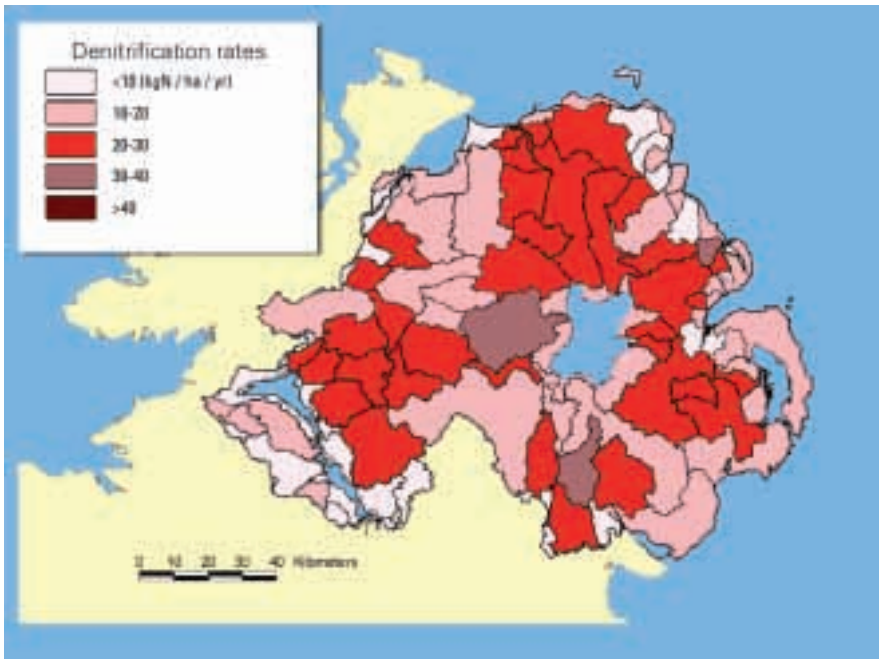
Over 150 slurry samples have been analysed by AFBI in an effort to assist DARD and NI Environment Agency in determining an appropriate means of disposal of several thousand tonnes of contaminated slurry. Soil samples are also being analysed to investigate any risk to the environment or the food chain from the use of slurry from animals which received the contaminated feed.

This incident had a substantial impact on the day to day running of the analytical laboratories at AFBI. Some 25 staff were diverted from normal duties at one time or another with a resulting impact on business continuity. However, with the commitment of AFBI personnel, temporary staff and the goodwill of other customers, the impact on service delivery was minimised. The "after shock" is anticipated to continue for some months to come. Nevertheless, this emergency has demonstrated that AFBI, through the dedication and professionalism of its people, has the capability to meet such unforeseen challenges.

Denitrification and nitrous oxide

Nitrous oxide (N_2O) is a greenhouse gas which absorbs 270 times more heat per molecule than carbon dioxide. The major source of N_2O emissions in the UK is from agricultural activities. Climatic and agricultural conditions conspire to ensure Northern Ireland soils have some of the highest rates of denitrification in the UK.

Microbes in our wet and carbon-rich soils reduce nitrate through the process of denitrification to produce two principal gaseous products, nitrogen (N) and N_2O, in the ratio of approximately 3:1. These gases are lost to the atmosphere. The nitrogen produced is not deleterious to the environment but the N_2O, a greenhouse gas, may contribute to global warming. AFBI research has shown that denitrification rates increase linearly with increasing rate of calcium ammonium nitrate (CAN) fertiliser applied. Loss rates as high as 3 kg N per hectare per day have been measured at AFBI Hillsborough, where the seasonal weighted mean N_2O emission factor for CAN was 3.93%, compared to the Intergovernmental Panel on Climate Change default factor of 1.25%.



Denitrification rates by major river catchment across Northern Ireland

Modelling of denitrification losses using the AFBI GIS predicts that around 7,500 tonnes of are N_2O are emitted annually from Northern Irish soils. This corresponds to around 5% of the current annual UK emissions of nitrous oxide. Northern Ireland accounts for 6% of the land area of the UK.

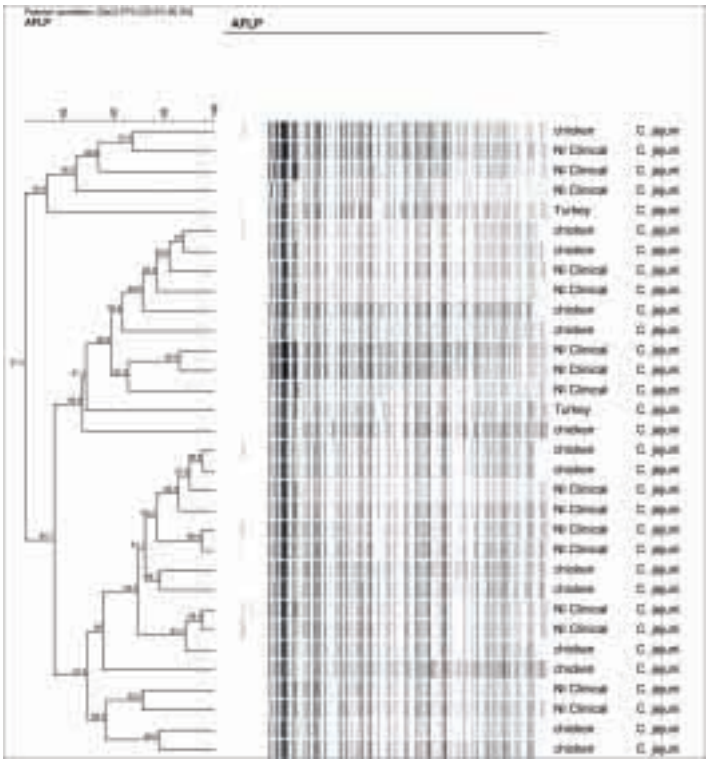
Current work by AFBI involves the use of inhibitors and stable isotopes to study the N cycle and how to manage it to minimise N_2O losses from fertilisers (both chemical and organic). In addition, AFBI in association with Teagasc and University College Dublin, have recently received Stimulus funding for a joint project to investigate opportunities to maximise the efficiency of slurry-N and urea-N utilisation by grassland, using nitrification and urease inhibitors as a strategy for environmental protection. The impact of these inhibitors on greenhouse gas emissions (N_2O, CH_4, CO_2), ammonia emissions and nitrate leaching are being quantified under contrasting soil and environmental conditions in Ireland to enable emission factors to be verified.

Campylobacter - finding and identifying a foodborne pathogen

In most developed countries *Campylobacter* species, especially C*ampylobacter jejuni* and *Campylobacter coli*, are the main causes of foodborne gastroenteritis. On average, anyone contracting these organisms can expect two weeks of illness, with significant losses resulting to the economy in terms of time off work, etc.

AFBI research has been undertaken in order to understand more about the sources and spread of campylobacters.

Campylobacters are fastidious organisms which require carefully managed conditions to grow, such as oxygen concentrations less than a quarter of those found in air. Air will kill campylobacters but a complete lack of oxygen will prevent growth. The organisms live on a limited range of nutrients; for example they cannot utilise any sugars or complex proteins but require specific amino acids to grow.



The banded patterns are AFLP 'fingerprints' of Campylobacter isolates from chicken turkey and people (NI Clinical). The two ellipses highlight clusters of identical isolates, i.e. they have greater than 90% similarity using the chosen analysis. Note how isolates from man and poultry are grouped together.

Therefore, isolating campylobacters from foods or animals requires the use of proven culture media and controlled atmospheres. Recent AFBI studies showed that incubation procedures specified by UK government bodies for the detection of campylobacters in foodstuffs were inappropriate, yielding campylobacters from only about 60% of positive samples.

These findings were recently published and recommendations were made for improvements to the International Standards Organisation's procedures for isolating campylobacters.

The identification of campylobacter species, has also been problematic due to their lack of biochemical activity, since such properties are normally used to define organisms to the species and sub-species level. This is essential to trace the path by which micro-organisms are spread. However, at the time campylobacters rose to prominence as a human pathogen in the 1980s, DNA-based techniques became available for identifying bacteria.

Initially, genotyping (identification procedures based on study of the bacterial DNA or genome) were complex, slow and expensive. AFBI staff were invited to join a European Union network which assessed a wide range of methods for genotyping campylobacters and led the group studying flagellin typing. The best available procedure was applied to study how piglets acquired campylobacters during their first 6 weeks of life. *Campylobacter coli* is common in pigs and causes no illness in them, unlike in man.

Campylobacters were isolated from a sow and her litter over 6 weeks, showing that the piglets acquired the mother's campylobacters within a week or so. But then, other campylobacters arrived, presumably from the environment beyond the litter's pen. It was also shown that the sow could acquire campylobacters from the litter and that neighbouring litters could add to the diversity of *C. coli* found. Unlike salmonellas, there was no dominant type which arrived and persisted in the animals therefore one pig could carry many genotypes of *C. coli* and, if care was not taken in the abattoir, pass them to raw meats. In such circumstances, and given the plethora of genotypes of *C. coli*, tracing back from human illness to a specific animal, or even a herd, would be impossible.

Newer genotyping methods, such as amplified fragment length polymorphism (AFLP) have been applied and genetic fingerprints of campylobacters produced by this method allow two significant goals to be achieved; they allow clustering of species and also permit grouping of isolates at sub-species level. Using this procedure, campylobacters obtained from human faecal samples throughout Northern Ireland were analysed and compared with isolates from raw poultry.

For *Campylobacter jejuni* it was seen that a wider range of genetic diversity was seen in isolates from man, than in poultry. For *C. coli* the reverse was true. This supports the view that only a narrow range of *C. coli* can infect man. However, overall 74% of poultry isolates gave AFLP profiles which were very similar (>80%) to those found in man.

Thus campylobacters forming part the normal flora of chickens are genetically almost identical to those causing illness in man. In order to control this organism, a major study was undertaken and risk factors on broiler farms identified. AFBI is currently working with broiler producers across Ireland in order to promote awareness of campylobacters, and possible control methods, in order to protect the interests of both farmers, and consumers.

Renewable energy research takes a step forward

The new AFBI Environment and Renewable Energy Centre at Hillsborough was opened in January 2009 by the Minister of Agriculture and Rural Development, Michelle Gildernew MP MLA.

The facilities include a 600 cubic metre mesophilic anaerobic digester generating biogas, mainly from cow manure, linked to a combined heat and power unit capable of generating 26 kW of electrical output on a continuous basis, and biomass boilers (320kW and 120kW) utilising a range of fuels and providing heating across the site through a district heating system.

These and other components (such as solar heat panels to provide additional hot water for the dairy parlour and a 3-bay on-floor drier and store for wood chips and similar materials) are providing the basis for 6 DARD funded research projects into the generation of renewable energy from agricultural materials.

Short Rotation Coppice and Miscanthus are being grown on-site in research on aspects of crop management including irrigation with farm dirty water, and establishment, harvesting and drying systems. Forest brash, which is currently a waste material left on the forest floor after round-wood harvesting, is being investigated as a source of renewable energy.

Greenhouse gas emissions (GHG) from livestock

Government plans to achieve an 80% reduction in greenhouse gas emissions by 2050 and agriculture, which contributes 21% of Northern Ireland's GHG emissions, must play its part in the achievement of this reduction target.

Over the last 15 years DARD / AFBI animal metabolism experiments have provided standard figures for methane and other emissions from dairy and beef cattle. From this base knowledge new AFBI research is seeking to identify ways in which these emissions can be reduced through improved feeding and management regimes.

Methane emission reductions of up to 18% have already been achieved and further progress is expected. AFBI is bringing together these with other GHG related AFBI research findings so that whole lifecycle carbon footprints can be developed for enterprises and food products. This information is important, not only to government, but also to industry and to consumers.

Anaerobic Digestion plant at AFBI Hillsborough

Defining the nutritive value of wheat for broilers

Wheat is extremely variable in terms of its nutritive value for broiler poultry. However, the traditional method of assessing the nutritive value through the bushel weight is unreliable. AFBI research (jointly funded by the Home-grown Cereals Authority and DARD) has developed a more accurate and rapid means of assessing nutritive value to ensure the formulation of optimum diets for broilers.

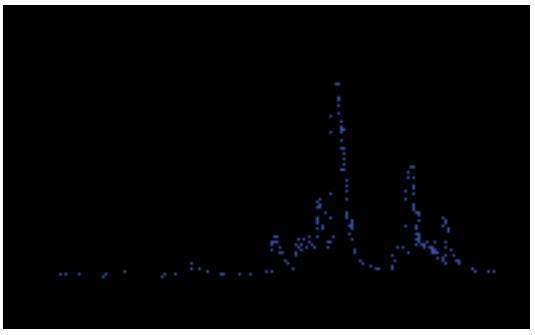
A wide range of wheat samples from across the UK was formulated into diets and offered to broilers in metabolism studies. The performance of the birds was assessed and the actual energy value and nutrient availability of the wheat determined. Each wheat sample was chemically analysed to determine the amount of fibre, energy, starch, fat, protein and amino acids, and also scanned using Near Infra Red Reflectance Spectroscopy (NIRS).

Robust NIRS validation equations for the prediction of the crude protein content of milled dried grain were obtained indicating that that NIRS can be used to accurately determine crude protein content in feed wheat. In addition, good predictions for broiler live weight gain and the ratio of gain to feed were achieved through the scanning of whole wheat. This finding is significant to the cereal and broiler industries, as potentially, a whole wheat sample can be scanned in a few seconds by NIRS and an accurate prediction of broiler performance obtained.

Monitoring programme explains cause of fish kill

AFBI maintains a network of remote oceanographic sensing equipment in the sea loughs, estuaries and coastal seas around Northern Ireland, providing access to fixed point sentinel monitoring of water quality in real-time as well as facilitating broader water body characterisation. These data are transmitted in real-time to the AFBI laboratories at Newforge and are also accessible via the AFBI website (www.afbini.gov.uk)

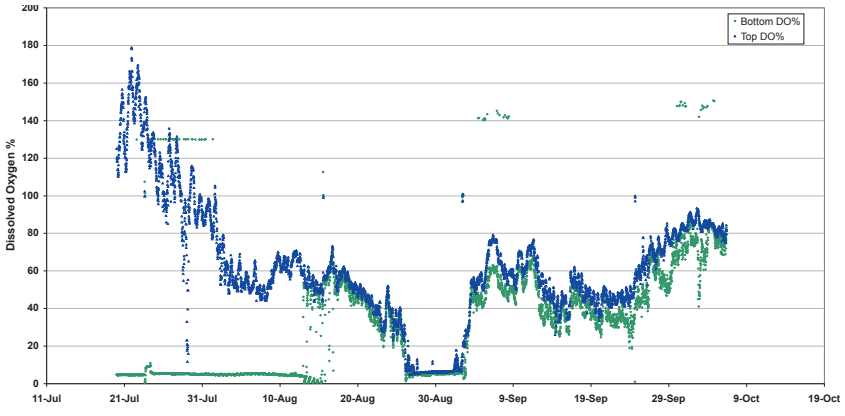
In 2009 "Northern Ireland had its wettest August since 1914, with 203.2 mm of rainfall" according to the Meteorological Office and 206.6 mm of rain was recorded at AFBI's Hillsborough weather station and 213.4 mm at AFBI's Newforge weather station with peaks of and 58mm (17/08/08 – Hillsborough) and 67.3 mm (16/08/08 – Newforge). This is reflected in the huge increase in river flow in the Annacloy river, which flows into the Quoile River and Pondage. A peak of 66 m^3s^{-1} was recorded on the 17 August 2008 with flow maintained above 50m^3s^{-1} for 50 hours 15 minutes from 16th – 18th. This huge influx of freshwater into the system can also be seen from the data captured at the AFBI monitoring buoy in the Quoile (right).



The present impoundment was created by the construction of a tidal barrier across the estuary of the River Quoile in 1957 to relieve flooding problems upstream. Colonisation of the former seashore has resulted in freshwater flora and fauna along the river, with some brackish water species resident. The impoundment has been identified as eutrophic and is typically nitrogen limited. After this the river and resulting pondage have been mostly fresh water, with some saltwater influence from water mixing underneath the barrage. The Quoile in normal conditions is salinity stratified. In the

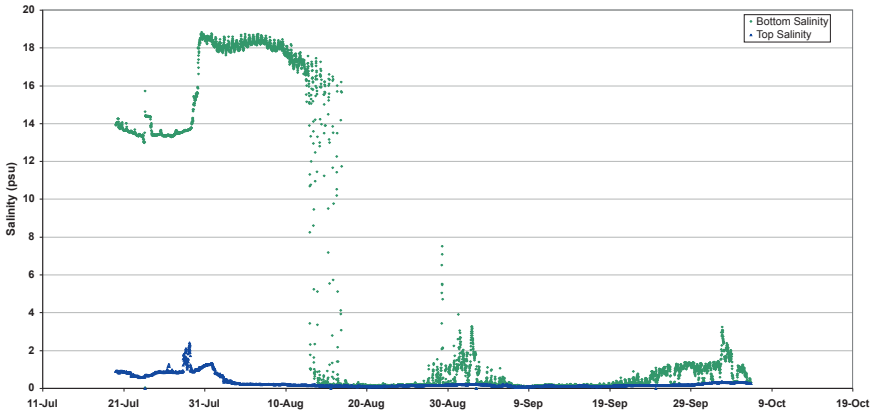
days before the heavy rainfall event, a mean of 12.6 psu (with a max 17.8 psu and min 0.17psu) from the bottom instruments and a mean of 0.17psu (max 0.20psu and min 0.12psu) from the top instrument clearly shows a marked salinity stratification. Because of this restricted mixing, the bottom water typically has a dissolved oxygen (DO) content approaching zero. However, fish are usually able to find sanctuary in the upper layers where oxygen is normally sufficient.

On the 17 of August, the salinity readings from the top instrument showed the salinity down to a low of 0.093psu and the readings from the bottom decreased dramatically to a low of 0.13psu. The mean salinity from 16-20 August was 0.12psu for the top and 0.68psu for the bottom. Following this, saltwater influence in the lower layer of water was not detected again until the 29 August when a high of 7.51psu was found. Clearly, the large amount of rainfall entering the system as freshwater has disrupted the salinity stratification and led to mixing of the water throughout the water column. An outcome of this water body mixing is the effect found



Dissolved oxegen data from the River Quoile Jul-Oct 09

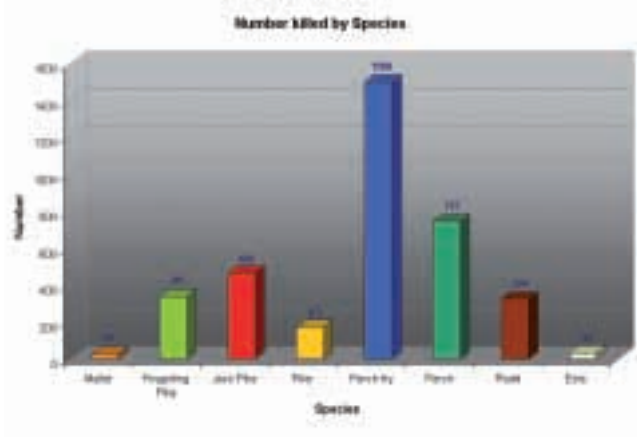
on the dissolved oxygen concentration in the water. As the salinity stratification is broken down by the excessive freshwater flow the water column becomes fully mixed allowing dissolved oxygen poor water to dominate until early September when the stratification began to be restored. This resulted in a massive fish kill.



Salinity data from the River Quoile Jul-Oct 09

Data from the AFBI mooring allowed the rapid understanding of the cause of the fish kill and it was possible to quickly rule out other sources of pollution. In future it may be possible to use these near real time data to put in place management solutions to prevent fish kills.

On the 30 August 2008 a fish kill was recorded in the Quoile Pondage. Over 3,600 fish (including one 1,500 perch fry) were counted as dead. (DARD fisheries).



Direct payments to farmers - the impact on conacre rents

It is widely recognised that financial support to farming has a positive effect on land values and rents. Recent reforms of the Common Agricultural Policy (CAP) have decoupled the main support payments to farmers by breaking the link between payments and levels of production.

It is important to determine if this policy reform impacts on land rents. This is of particular concern in Northern Ireland (NI) as approximately half of all farmers rent some land and conacre land accounts for over 30% of total land farmed. The greater the share of these payments that goes to land, and hence landowners, the less effective direct payments are as a means of supporting farmers' (as opposed to landowners') incomes.

AFBI has utilised econometric models to analyse the impact of both coupled and decoupled direct payments on NI conacre rents. The analysis used data from the annual Farm Business Survey for the period 1994 to 2002, predating the CAP reforms, on farms in the Less Favoured Areas (LFA).

It was found that different direct payments exerted different proportional impacts on conacre rents. Coupled direct payment linked to the beef sector, namely the Beef Special Premium and the Suckler Cow Premium, were only partially capitalised into conacre rents. It is likely that these coupled payments stimulated additional production which in turn lowered commodity prices and raised input prices, and thereby diluted the impact that the direct payments had on conacre rent.

In contrast, it was found that the entire value of the coupled Sheep Annual Premium (SAP) payment was capitalised into conacre rent. Although the SAP payment was fully coupled with production, in general, sheep farming in Northern Ireland uses few inputs (other than land) compared to beef farming,

consequently the landowner captured the total value of the SAP.

The decoupled payment investigated was the Less Favoured Area Payment (LFAP), an area-based payment that replaced the headage-based (i.e. coupled) Hill Livestock Compensation Allowance (paid for cattle and sheep in the LFA) in 2001. The economic modelling revealed that the LFAP was fully capitalised into rental values. Given the decoupled nature of the LFAP, input suppliers captured little or none of the direct payment; it was fully capitalised into conacre rent. Consequently, farmers who own all the land they farm capture all the agricultural support, while farmers who rent land have to share the financial support with the owners of the land they rent.

The introduction of the Single Farm Payment (SFP) in 2005 entailed bundling a range of headage-based (coupled) payments into a single decoupled payment. The conclusion can therefore be drawn that this CAP reform measure shifted the benefit of the financial support from those actively farming towards the owners of the land farmed.

International Renewable Energy Conference and Exhibition (IREC'08)

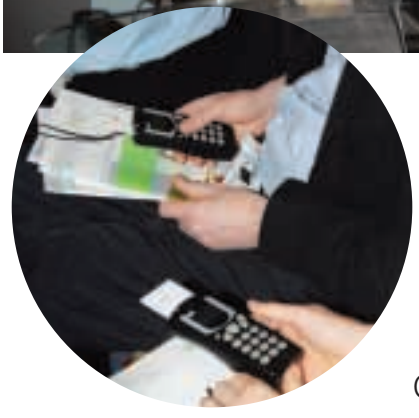
AFBI Innovations was officially launched at the International Renewable Energy Conference and Exhibition (IREC08) held at the Slieve Donard Hotel, Newcastle, Co Down on 29th and 30th October 2008.

The International Renewable Energy Conference (IREC'08) was opened by Minister Michelle Gildernew MP MLA and Junior Minister Gerry Kelly, MLA.

IREC08 showcased both technological developments in the renewable energy sector and the business opportunities that exist within Northern Ireland for developing renewable energy infrastructure and applications on a local community scale.

IREC08 - Global Challenges, Community Solutions brought together high profile speakers from Europe, Ireland, United States and Britain with over 200 delegates from the renewable energy industry as well as decision makers and stakeholders from the public sector.

The conference outlined the specific business opportunities that exist in Northern Ireland within the renewable sector and identified and shared best practice models for successfully delivering renewable infrastructure locally, nationally and internationally. It also highlighted how private equity, government and industry could successfully work together and act as a catalyst for the further development of renewable energy infrastructure.



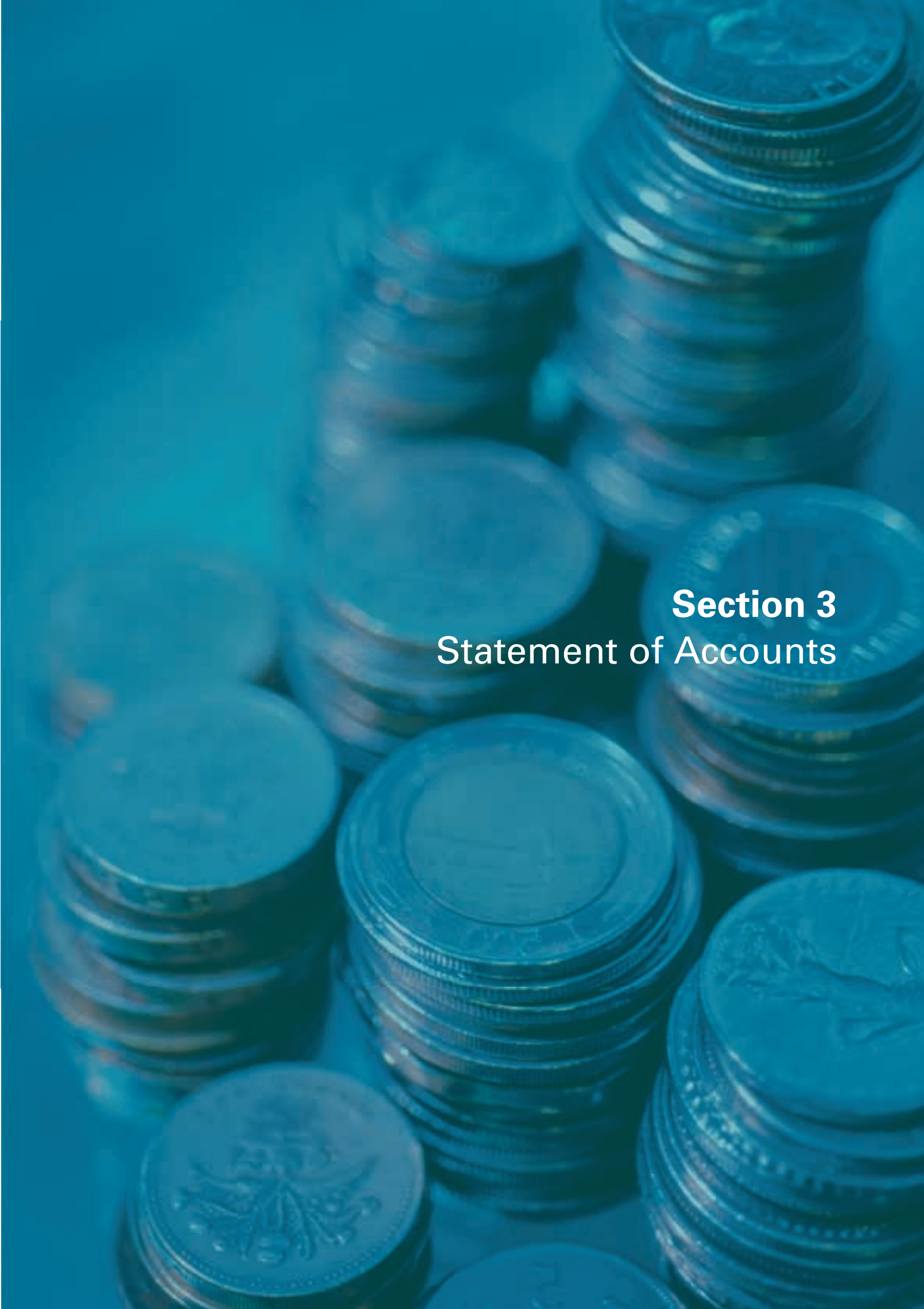
Delegates were given the opportunity to interact with scientific experts and debate contentious issues surrounding renewable energy and formed a consensus utilising interactive audience participation technology.

Guidance was provided from Government and regulators on current and future policies relating to Renewable Energy and

delegates were afforded the opportunity to network with leaders in specific areas and gain access to opinion formers.

The IREC08 exhibition attracted housed stands from 12 local companies and the AFBI Innovations business hubs in the main hotel and the exhibition area provided an environment for participating companies and delegates to discuss business in private. A report and DVD of the proceeding was produced and distributed to all delegates and speakers in January 2009.

The exhibition and main room at the International Renewable Energy Conference (IREC'08)



Section 3
Statement of Accounts

3.1 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 two or three 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

In 2008/2009, the remuneration of the members of the Board was as follows:

	2008/09		2007/08	
	Salary (to nearest £1,000)	Benefits in kind (to nearest £100)	Salary (to nearest £1,000)	Benefit in kind (to nearest £100)
Mr Sean Hogan, Chairman	25	-	24	-
Prof. David McDowell	10	-	10	-
Mr Kieran Campbell	7	-	6	-
Dr Michael Hollywood	6	-	5	-
Dr Christine Kennedy	5	-	4	-
Mr Nicholas Mack	4	-	4	-
Prof. Grace Mulcahy	4	-	4	-
Mr John McKinley	4	-	4	-
Prof. Stewart McNulty	4	-	4	-
Mr Jim Noble	4	-	4	-
Mr John Rankin	6	-	5	-
Mr Michael Walker	4	-	4	-

The following members completed their term of office on 31 March 2009, but as they are eligible for re-appointment, the DARD Minister announced that their term of office had been extended to 31 March 2012 effective from 1 April 2009.

Prof. David McDowell
Mr James Noble
Mr Michael Walker
Prof. Stewart McNulty
Prof Grace Mulcahy
Mr John Rankin

Sub-committees of the Board

The following sub-committees continued to operate during the year:

Audit Committee

The Audit Committee members were paid as follows for attendance at meetings during the year.

Dr Michael Hollywood, Chairman	£1,500
Mr Kieran Campbell	£1,500
Mr John Rankin	£1,500

Remuneration Committee

The Remuneration Committee members were paid as follows for attendance at meetings during the year.

Prof. David McDowell, Chairman *	-
Mr Kieran Campbell	£1,200
Dr Christine Kennedy	£1,200

** Prof David McDowell does not receive any remuneration for chairing the meetings of the Remuneration Committee*

The role of the Remuneration Committee is to advise the AFBI Board in respect of members of the Senior Management Team (SMT). 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, as described above, any proposed changes to the overall framework are also subject to review and scrutiny by this Committee.

Policy on Rewards to Staff for Exploitation of Intellectual Property

The Remuneration Committee reviewed the organisation's procedures for rewarding staff where their work gave rise to increased income from the exploitation of intellectual rights. A policy on rewards to staff, approved by the AFBI Board, was the subject of a detailed interaction with DARD and a business case is being prepared for submission to DFP.

Chief Executive and Senior Management Team

Remuneration Policy

At present, the remuneration of the Chief Executive Officer and the Deputy Chief Executive Officers is set in accordance with the Senior Civil Service (SCS) in Northern Ireland which, in turn, is set by the Prime Minister following independent advice from the Review Body on Senior Salaries. The pay award for staff in the Senior Civil Service is comprised of two elements – a base pay uplift and a non-consolidated bonus, both of which are entirely performance based.

At present, the remuneration of the Head of the Business Support Unit and the Head of the Chief Executive's Support, the remaining members of the senior executive team in AFBI called the Senior Management Team (SMT), is set in accordance with the pay award negotiated with the trade unions for all non-industrial staff in the Northern Ireland Civil Service.

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 until they reach the normal retiring age of 60. Policy relating to notice periods and termination payments is contained in the Northern Ireland Civil Service (NICS) Staff Handbook.

Duration of notice periods

At present, recruits or promotees to the analogous Senior Civil Service posts in AFBI are required to give three months notice of resignation. The Institute reserves the right to introduce a longer period of notice for individual posts up to a maximum of six months and incumbents will be notified accordingly. This may be likely where the recruitment of the replacement is likely to be a protracted process.

At the time of resignation, the Institute may, by agreement with the member of staff concerned, agree to waive the required notice.

Where the Institute is of the opinion that the appointee is unfit to continue in post or is incapable of adequately performing the duties of the post, it can terminate the appointment with due notice as per the NICS Staff Handbook/Terms and Conditions.

Termination payments

If for any reason other than disciplinary dismissal, the minimum period of notice cannot be given, the member of staff will receive compensation in lieu of the unexpired period of notice. Compensation is not payable when the date of leaving is mutually agreed, for example, in cases of flexible early retirement, approved early retirement, voluntary redundancy or where staff resigns before the end of the notice period.

Salary and Pension Entitlements

The following sections provide details of the remuneration and pension interests of the Senior Management Team of the Institute.

(a) Remuneration (Audited)

	2008/09		2007/08	
	Salary	Benefits in kind (to nearest £1,000)	Salary	Benefit in kind (to nearest £1,000)
Dr S G McIlroy, CEO	80 - 85	-	80 – 85	-
Dr M Camlin, DCEO	71 - 75	-	65 – 70	-
Dr S Neill, DCEO	65 - 70	-	65 – 70	-
Dr S Kennedy, DCEO	65 - 70	-	60 – 65	-
Dr R Boyd, Head CSD	60 - 65	-	60 – 65	-
Mr S Dolan*, Head BSU	30 - 35	-	50 – 55	-
Dr A Gilmour** DCEO (Acting)	35 - 40 (60 - 65 full year equivalent)			
Dr D Bryson*** DCEO (Acting)	15 - 20 (60 - 65 full year equivalent)			

*Mr S Dolan resigned on the 31st October 2008
**Dr A Gilmour was appointed as Acting DCEO from 10th September 2008.
***Dr D Bryson was appointed Acting DCEO form 15th December 2008.

Salary

Salary includes gross salary; performance pay or bonuses and any allowance that is subject to UK taxation. This report is based on payments made by the Institute and thus recorded in the accounts.

Benefits in kind

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

(b) Pensions (Audited)

Name	Real increase in pension	Real increase in lump sum	Pension at end date	Lump sum at end date	CETV at start date	CETV at end date	Employee contribs. and transfers in	Real increase in CETV funded by employer
	To nearest £'000				To nearest £		To nearest £	To nearest £'000
Dr G McIlroy	0-2.5	2.5-5	15-20	55-60	378	444	1253	35
Dr M Camlin	2.5-5	10-12.5	35-40	110-115	740	854	1067	89
Dr S Neill	0-2.5	0-2.5	35-40	105-110	802	835	1045	-17
Dr S Kennedy	0-2.5	0-2.5	20-25	70-75	430	466	989	2
Dr R Boyd	0-2.5	0-2.5	25-30	75-80	531	565	957	17
Mr S Dolan	0-2.5	0-2.5	15-20	45-50	277	307	473	6
Dr A Gilmour	0-2.5	2.5-5	25-30	80-85	609	651	526	24
Dr D Bryson	0-2.5	2.5-5	25-30	80-85	577	623	279	24

Accrued pension and lump sum as at 31 March 09

This is the pension the individual would receive if 31 March 09 were their last day of service. If the individual is in premium or nuvos then they will not receive an automatic lump sum and therefore there is no lump sum to disclose. The accrued pension and lump sum includes any benefits that have accrued from the individual buying added years, added pension or transferring in benefits from another scheme. If a member has a preserved award from a previous NI civil service employment, this is included in the calculations.

Real increase in pension and lump sum

This is the increase in the value of the pension over the year taking account of inflation. Members of premium and nuvos do not automatically receive a lump sum and so there is no disclosure in respect of this.

Members of classic and classic plus receive an automatic lump sum and this has been disclosed.

Cash Equivalent Transfer Values (CETV)

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 include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the Civil Service pension arrangements. They also include any additional pension benefit accrued to the member as a result of their purchasing additional pension benefits at their own cost. CETVs are calculated within the guidelines and framework prescribed by the Institute and Faculty of Actuaries and do not take account of any actual or potential reduction to benefits resulting from Lifetime Allowance Tax which may be due when pension benefits are drawn.

The factors used in calculating CETVs have been updated from October 2008. CSP will use new factors to calculate the opening CETV for 08//09 and as a result the figure may differ from the 07/08 closing CETV figure given last year.

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.

Civil Service Pensions

Pension benefits are provided through the Civil Service pension arrangements. From 1 October 2002, civil servants may be in one of three statutory based 'final salary' defined benefit schemes (Classic, Premium and Classic Plus). The schemes are unfunded with the cost of benefits met by monies voted by Parliament each year. Pensions payable under Classic, Premium and Classic Plus are increased annually with changes in the Retail Price Index. New entrants after 1 October 2002 may choose between membership of premium or joining a good quality 'money purchase' stakeholder arrangement with a significant employer contribution (partnership pension account).

Employee contributions are set at the rate of 1.5% of pensionable earnings for Classic and 3.5% for Premium and Classic Plus. 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 salary 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 in the same way as in Classic.

The Partnership Pension account is a stakeholder pension arrangement. The employer makes a basic contribution of between 3.5% and 12.5%, depending on the age of the member, into a stakeholder pension product chosen by the employee from a selection of approved products. The employee does not have to contribute but where they do make contributions, the employer will match this 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). Further details about the Civil Service pension arrangements can be found at the website www.civilservicepensions-ni.gov.uk.

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

Dr George McIlroy
Chief Executive and Accounting Officer

Date: 30/09/09

3.2 Statement on Internal Control

Scope of responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of AFBI's policies, aims and objectives, approved by the Institute's Minister, whilst safeguarding the public funds and the Institute's assets for which I am personally responsible, in accordance with the responsibilities assigned to me in *Managing Public Money Northern Ireland.*

The accountability arrangements within AFBI encompass stewardship, performance and compliance. Monthly Management team and AFBI Board meetings, together with quarterly Audit Committee meetings support the role of the Accounting Officer.

The purpose of the system of internal control

The system of internal control is designed to manage risk to a reasonable level rather than to eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness.

The system of internal control is based on an ongoing process designed:

- to identify the principal risks to the achievement of Institute policies, aims and objectives;
- to evaluate the likelihood of these risks being realised;
- to assess the potential impact should they be realised; and
- to manage them efficiently, effectively and economically.

This process has been in place for the year ended 31 March 2008 and up to the date of approval of the annual report and accounts, and accords with Department of Finance and Personnel guidance.

Capacity to handle risk

AFBI aims to manage risks at the lowest level at which they are controllable. To this end, the Institute has completed a review and revision of its Risk Management Strategy and introduced an improved process for managing risk. Appropriate procedures are in place to ensure that the Institute has identified its objectives and risks and determined a control strategy for each of the significant risks. Risk ownership has been allocated to the appropriate staff, and the Institute has set out its attitude to risk to the achievement of the Institute's objectives. The Senior Management Team has ensured that procedures are in place for verifying that aspects of risk management and internal control are regularly reviewed and reported on, and that these activities are appropriately linked into corporate planning and decision making processes. AFBI Internal Audit reviewed risk and control assessment procedures within AFBI before reporting on the year ending 31 March 2009.

The AFBI non-executive Board receives monthly exception reports of new risks or significant changes to existing risks. The Audit and Risk Committee receives and reviews the corporate risk register four times a year. Appropriate steps are being taken to manage risks in significant areas of responsibility and monitor progress on key projects. Risk management and reporting processes were further enhanced during the year, and on-going training was provided in this activity for all relevant AFBI managers.

The risk and control framework

AFBI Internal Auditor's operate to standards defined in the Government Internal Audit Manual. Annually, the Head of Internal Audit (HIA) provides me with a report on internal audit activity in the Institute. The report includes the HIA's independent opinion on the adequacy and effectiveness of the Institute's system of internal control with recommendations for improvement. AFBI has also documented its Risk Management Strategy. This document describes at a high level how AFBI will implement its approach to risk management. It sets out the necessary organisation roles and responsibilities, along with a framework of underlying principles of the control system. This document has been amended to include the management of information risks as an important component of the SIC process. The Strategy document has been made available to all the managers within the organisation to make them aware of their responsibilities in relation to risk management.

AFBI maintains a Corporate Risk Register. The generic areas which are reviewed include funding, procurement, human resource and operational issues. The format of the register is also reviewed and, when necessary, changes are made for more comprehensive and better presentation. In order to ensure the proper management of risk, a risk co-ordinator has been appointed charged with co-ordinating the work involved and with the maintenance of the register. A key component of the management of risk within AFBI is the role of the Deputy Chief Executive Officers. They hold regular meetings with their divisional management teams to review and assess risk management within the Divisions and any material changes to the status of any risk is brought to the attention of the Senior Management Team at their monthly meetings, and brought to the attention of the AFBI Audit Committee and ultimately the AFBI Board. The Corporate Risk Register is a standing item at the Senior Management Team meetings and the AFBI Board meetings.

The business planning process and more specific project planning processes take account of risks to the achievement of objectives and these risks are recorded in the appropriate risk register with mitigating and additional management actions allocated to a responsible officer.

Each of the Divisional Heads prepares a stewardship statement, twice a year, providing assurances to the CEO in support of the Statement on Internal Control. These statements give assurances that the necessary controls are in place in each of the business divisions.

Review of Effectiveness

As Accounting Officer, I have responsibility for reviewing the effectiveness of the system of internal control. My review is informed by the work of the internal auditors, the executive managers within the Institute who have responsibility for the development and maintenance of the internal control framework, and comments made by the external auditors in their management letter. I have been advised on the implications of the result of my review of the effectiveness of the system of internal control by the Management Board and by the Audit and Risk Management Committee and a plan to address weaknesses and ensure continuous improvement of the system is in place.

The HIA has provided me with a report on internal audit activity within the Institute during the year and an annual assurance statement. This indicates that, whilst overall there is a satisfactory system of governance, risk management and internal control in place, there are areas for improvement in relation to internet and e-mail usage, review of performance management, and the review of business continuity planning. The HIA states that his opinion is based upon both the direct audit work performed in 2008-2009 and an evaluation of the adequacy of the Institute's risk management process.

HR Connect

DFP Internal Audit conducted a review of the HR Connect payroll service prior to go live focusing on the documented operating procedures for shared service centre and NICS staff and provided a satisfactory level of assurance in these areas. However, Internal Audit has not undertaken any direct work since the HR Connect Service went live in November 2008.

The internal audit of the HR Connect service in 2008-09 was undertaken by the main contractor, in accordance with contractual provisions. A set of internal reports have been received from the main contractor, including a review of actual controls against expected controls in respect of the non-industrial payroll system. These have been reviewed by Corporate HR and DFP Internal Audit who are satisfied that although some weaknesses have been identified these are being addressed by Capita and Fujitsu. Corporate HR has also welcomed the establishment of a monthly forum at which Capita and Fujitsu will discuss progress on issues raised in these reports and will monitor progress on the implementation of recommendations. DFP Internal Audit will be conducting direct audit work in HR Connect during 2009-10.

Loss of PC

During the year, it was discovered that a PC was missing at AFBI, Omagh. Investigations by the Business Systems IT Manager revealed that there had been no loss of sensitive data as a result of this loss.

Significant Internal Control problems

During the period the HIA identified weaknesses in the following areas with specific areas of concern highlighted.

- Review of Internet and Email usage: specifically with the lack of provision of information to management on breaches in the acceptable use of email in terms of content filtering and management and the lack of formalised procedures for conducting the follow up of inappropriate and excessive internet usage including disciplinary procedures.
- Review of performance management: specifically the lack of a formal requirement for the divisions to submit their business plans for review by the CEO and the Senior Management Team and periodic reviews of divisional performance against targets in the business plan.
- Review of Business Continuity Planning: specifically the lack of appropriately tested and validated Business Continuity Plan for AFBI, the lack of Disaster Recovery arrangements in place for the AFBI managed IT systems and line of business applications.

I assigned responsible officers to prepare action plans and associated timetables to rectify these weaknesses. The implementation timetables are monitored by the Chief Executive's Office, subject to follow up reviews by Internal Audit and reported through SMT to the Audit and Risk Committee. I am pleased to report that the HIA's report identified that good progress was being made against a range of the audit recommendations. All the agreed recommendations will be implemented in the course of the coming year.

Dr George McIlroy,
Chief Executive and Accounting Officer

Date: 30/09/09

3.3 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 detailing the resources acquired, held, or disposed off during the year and the use of resources by the Institute during the year. The statement of accounts is 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, recognised gains and losses 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.

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*.

3.4 Audit Certificate

Agri-Food and Biosciences Institute

THE CERTIFICATE AND REPORT OF THE COMPTROLLER AND AUDITOR GENERAL TO THE NORTHERN IRELAND ASSEMBLY

I certify that I have audited the financial statements of the Agri-Food & Biosciences Institute for the year ended 31 March 2009 under the Agriculture (Northern Ireland) Order 2004. These comprise the Income and Expenditure Account, the Balance Sheet, the Cash Flow Statement and Statement of Recognised Gains and Losses 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 the Institute, Chief Executive and Auditor

The Institute and Chief Executive as Accounting Officer are responsible for preparing the Annual Report, which includes the Remuneration Report, and the financial statements in accordance with the Agriculture (Northern Ireland) Order 2004 and Department of Agriculture and Rural Development directions made thereunder and for ensuring the regularity of financial transactions. These responsibilities are set out in the Statement of Institute's and Accounting Officer's Responsibilities.

My responsibility is to audit the financial statements and the part of the remuneration report to be audited in accordance with relevant legal and regulatory requirements, and with International Standards on Auditing (UK and Ireland).

I report to you my opinion as to whether the financial statements give a true and fair view and whether the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Agriculture (Northern Ireland) Order 2004 and Department of Agriculture and Rural Development directions made thereunder. I report to you whether, in my opinion, the information, which comprises the Management Commentary and the unaudited part of the Remuneration Report included in the Annual Report is consistent with the financial statements. I also report whether in all material respects the expenditure and income have been applied to the purposes intended by Assembly and the financial transactions conform to the authorities which govern them.

In addition, I report to you if the Agri-Food & Biosciences Institute has not kept proper accounting records, if I have not received all the information and explanations I require for my audit, or if information specified by the Department of Finance and Personnel regarding remuneration and other transactions is not disclosed.

I review whether the Statement on Internal Control reflects the Agri-Food & Biosciences Institute's compliance with the Department of Finance and Personnel's guidance, and I report if it does not. I am not required to consider whether this statement covers all risks and controls, or form an opinion on the effectiveness of the Agri-Food & Biosciences Institute's corporate governance procedures or its risk and control procedures.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. This other information comprises the Foreword from the Chair, the Chief Executive's report and AFBI Science. I consider the implications for my certificate if I become aware of any apparent misstatements or material inconsistencies with the financial statements. My responsibilities do not extend to any other information.

Basis of audit opinions

I conducted my audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. My audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements and the part of the Remuneration Report to be audited. It also includes an assessment of the significant estimates and judgments made by the Institute and Chief Executive in the preparation of the financial statements, and of whether the accounting policies are most appropriate to the Agri-Food & Biosciences Institute's circumstances, consistently applied and adequately disclosed. I planned and performed my audit so as to obtain all the information and explanations which I considered necessary in order to provide me with sufficient evidence to give reasonable assurance that the financial statements and the part of the Remuneration Report to be audited are free from material misstatement, whether caused by fraud or error, and that in all material respects the expenditure and income have been applied to the purposes intended by the Assembly and the financial transactions conform to the authorities which govern them. In forming my opinion I also evaluated the overall adequacy of the presentation of information in the financial statements and the part of the Remuneration Report to be audited.

Opinions

In my opinion:

- the financial statements give a true and fair view, in accordance with the Agriculture (Northern Ireland) Order 2004 and directions made thereunder by the Department of Agriculture & Rural Development, of the state of the Institute's affairs as at 31 March 2009 and of its net expenditure, recognised gains and losses and cash flows for the year then ended;
- the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Agriculture (Northern Ireland) Order 2004 and Department of Agriculture & Rural Development directions made thereunder; and
- information, which comprises the Management Commentary and the unaudited part of the Remuneration report included within the Annual Report, is consistent with the financial statements.

Opinion on Regularity

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

Report

I have no observations to make on these financial statements.

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

7 October 2009

3.5 Accounts

Agri-Food and Biosciences Institute
Annual Report and Accounts
Income and Expenditure Account for the year ended 31 March 2009

	Note	2009 £000	2008 £000
Income			
Income from operating activities	2	11,933	8,240
Other finance income: Net Return on Employer Assets	12a	1,435	72
Total income		**13,368**	**8,312**
Expenditure			
Programme related costs	5	9,458	9,187
Administrative expenses			
Staff costs	3	26,153	30,093
Other costs	4	17,957	16,206
Notional cost of capital		226	258
Total expenditure		53,794	55,744
Net expenditure for the year		(40,426)	(47,432)

All activities derive from operating activities.
Notes 1 to 26 form part of the accounts.

Statement of recognised gains and losses for the year ended 31 March 2009

		2009 £000	2008 £000
Net (gain) / loss on the revaluation of tangible fixed assets	14/15	(413)	(173)
Actuarial loss/(gain) recognised for the financial year	12a	2,099	(892)
(Gain) / loss		**1,686**	**(1,065)**

Agri-Food and Biosciences Institute
Annual Report and Accounts
Balance Sheet as at 31 March 2009

	Note	2009		2008	
		£000	£000	£000	£000
Fixed Assets					
Tangible Assets	6	11,666		12,751	
Intangible Assets	7	191		221	
			11,857		12,972
Current Assets					
Stock	8	1,232		1,078	
Debtors	9	6,816		3,757	
Cash in hand	10	3		702	
		8,051		5,537	
Creditors: Amounts falling due within 1 year	11	(4,587)		(6,714)	
Net current assets			**3,464**		**(1,177)**
Total assets less current liabilities			**15,321**		**11,795**
Provisions for liabilities and charges	12		(7,582)		(6,254)
			7,739		5,541
Capital & Reserves					
General Reserve	13		6,408		4,364
Revaluation Reserve	14		1,159		960
Donated Assets Reserve	15		172		217
			7,739		5,541

Approved by the Board and signed on its behalf by

Chief Executive and Accounting Officer

Date 30/09/09

Agri-Food and Biosciences Institute
Annual Report and Accounts
Cash Flow Statement for the year ended 31 March 2009

	Note	2009 £000	2008 £000
Net cash outflow from operating activities	16.1	(44,511)	(37,620)
Capital Expenditure			
Payments to acquire tangible fixed assets		(1,458)	(2,390)
Payments to acquire intangible fixed assets		(83)	(44)
Receipts from sale of tangible fixed assets		533	2
Net Cash Outflow Before Financing		**(45,519)**	**(40,052)**
Financing			
Grant in Aid from DARD: Capital		1,322	2,792
Grant in Aid from DARD: Resource		42,816	39,200
Increase in Net Cash and Cash Equivalents		**(1,381)**	**1,940**
Movement in Cash Balances	16.2	**(1,381)**	**1,940**

3.6 Notes to the Accounts for the Year Ended 31 March 2009

1. ACCOUNTING POLICIES

Statement of accounting policies

These financial statements have been prepared in accordance with the 2008/09 Government Financial Reporting Manual (FReM) issued by DFP and the Accounts Direction issued by DARD on 19 April 2006. The accounting policies contained in the FReM follow UK generally accepted accounting practices for companies (UK GAAP) to the extent that it is meaningful and appropriate to the public sector.

Where FReM permits a choice of accounting policy, the accounting policy judged to be the most appropriate to the particular circumstances of the Institute, for the purpose of giving a true and fair view, has been selected.

The Institute's accounting policies have been applied consistently in dealing with the items considered material in relation to the accounts. The particular accounting policies adopted by the Institute are described below.

Accounting convention

These accounts have been prepared under the historical cost convention modified to account for the revaluation of fixed assets and livestock.

Tangible and intangible fixed assets

(1) The Institute does not own any land and buildings but leases them from DARD.

(2) Other non-property assets are stated at current cost using appropriate indices to account for the effects of inflation.

(3) The threshold for capitalisation is £5,000 excluding VAT. However, as the Institute is subject to irrecoverable VAT, the irrecoverable amount in relation to that asset is added to cost for capitalisation in accordance with Statement of Standard Accounting Practice 5 'Accounting for Value Added Tax'.

(4) The Institute does not capitalise fixtures, fittings and office furniture.

Donated fixed assets

Donated fixed assets are capitalised at their current value on receipt and this value is credited to the donated asset reserve. Donated fixed assets are valued and depreciated as described above for purchased assets. Gains and losses on revaluations are also taken to the donated asset reserve and, each year, an amount equal to the depreciation charge on the asset is released from the donated asset reserve to the income and expenditure account. Similarly, any impairment on donated assets charged to the income and expenditure account is matched by a transfer from the donated asset reserve. On sale of donated assets, the value of the sale proceeds is transferred from the donated asset reserve to the Income and Expenditure Reserve.

Depreciation

Assets in course of construction are not depreciated.
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. 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	2 to 10 years

Debtors

Provision is made where necessary for debts which are considered doubtful. Debts can only be written off when non recovery is considered certain and after the approval of senior management in accordance with the internal delegation limit.

Taxation

The Institute is not liable to corporation tax on income earned in the year.
Value Added Tax (VAT) is accounted for in accordance with Statement of Standard Accounting Practice 5 in that amounts are shown net of VAT except where irrecoverable VAT is charged to the operating cost statement or capitalised where it relates to the purchase of a fixed asset.

Provisions

The Institute makes provisions for liabilities and charges where, at the balance sheet 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, the Institute discounts the provision to its present value using a standard Government discount rate, which currently stands at 3.5%.

Pensions

Present and past employees are covered by the Principal Civil Service Pension Scheme (Northern Ireland) (PCSPS (NI)), which is a defined benefit scheme and is unfunded and non-contributory. The Institute 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 Income and Expenditure Account when incurred.

NILGOSC

The closure of the ARINI pension scheme raised a potential liability arising from a deficit in the former ARINI pensions fund and a cessation penalty imposed by the administrators of the scheme due to the loss of future contributions. A provision of £6m was included in the accounts for the year ended 31 March 2008 in respect of this potential liability. During the year, an options exercise was carried out so that the previous ARINI staff could make an informed decision as to whether to defer their pensions with NILGOSC or transfer them to PCSPS(NI). Based on this information, the provision has now been increased to almost £6.7m.

The Northern Ireland Local Government Superannuation Committee Scheme (NILGOSC) is a defined benefit statutory scheme, administered in accordance with the Local Government Pension Scheme Regulations (Northern Ireland) 2002, as amended. It is contracted out of the State Second Pension. This is fully funded defined benefit scheme that provides benefits on a final salary basis at a normal retirement age of 65. Benefits accrue at the rate of 1/80th of pensionable salary for each year of service. In addition a lump sum equivalent to 3/80th's of pensionable salary is payable on retirement. From 1 April 2006 all the former ARINI staff transferred to the PCSPS(NI), therefore were no contributions payable in the period and no further payments in future years.
An actuarial valuation was carried out at 31 March 2009 in accordance with Financial Reporting Standard 17 and Financial Reporting Manual (FReM) and the details of the valuation are shown in note 12a.
Actuarial gains and losses are taken to reserves and shown in the Statement of Total Recognised Gains and Losses.

• **Valuation method:**
The liabilities under the scheme have been valued using the projected unit method.

• **Financial assumptions:**
The principal financial assumptions used are shown in the table below.

Year ended:	31-Mar-09 % p.a.	31-Mar-08 % p.a.
Inflation / Pension Increase Rate	3.1%	3.6%
Salary Increase Rate	4.6%	5.1%
Expected Return on Assets	6.5%	7.3%
Discount Rate	6.9%	6.9%

The inflation assumption has been derived by considering the difference in gross redemption yields of traditional and index linked gilt edged securities at the year end.
Salary increases are assumed to be 1.5% more than price increases, in line with the assumption used in the latest formal valuation of the Fund.
The discount rate used is the return on a high quality corporate bond of the equivalent

term and currency to the liability.

• Expected Return on Assets

The expected return on assets is based on the long term future expected investment return for each asset class as at the beginning of the period. The assumed returns are net of investment expenses and allowances have been included in the cost of accruing benefits for administration expenses.

The following table shows the expected rate of return in respect of each class of asset.

Year ended	31 March 2009 % p.a.	31 March 2008 % p.a.
Equities	7.0%	7.7%
Bonds	5.4%	5.7%
Property	4.9%	5.7%
Cash	4.0%	4.8%

• Bulk transfers

A business case has been made to DFP recommending that the transfer should be on a bulk transfer basis. The terms of the bulk transfer have not yet been formally agreed. Accordingly, no assets have yet been transferred across to PCSPS(NI).

• Deferred Tax

No adjustment has been made for any deferred tax.

Recognition of Surplus / Deficit

The Institute has a 'constructive obligation' to fund any deficit allocated to its share of the Fund and it therefore fully recognises the whole of any deficit.

Early departure costs

The Institute is required to meet the additional cost of benefits beyond the normal PCSPS(NI) benefits in respect of employees who retire early. The Institute recognises n full for this cost when the early retirement programme is committed.

Grant in aid

Grant in aid represents net funding received from DARD and is credited to general reserves.

Income

Income from operating activities represents:

- Funding received from other organisations, including funding from the European Union.

Such income is matched against programme expenditure where possible;

- Other income receivable, principally, fees and charges for services provided.

Programme expenditure

Programme expenditure comprises the costs of undertaking activities in support of discharging the Institute's responsibilities and is accounted for on an accruals basis.

Administration expenses

Administration expenses reflect the cost of running the Institute.

Leases

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

Capital charge

A non-cash capital charge, reflecting the cost of capital utilised, is included in the Income and Expenditure Account and calculated using the average method. The charge is calculated at Government's standard rate of 3.5% in real terms on assets less liabilities.

Stock and work in progress

Livestock is valued at market value. Other stocks are valued at the lower of cost and net realisable value.

Contingent Liabilities

Legal claims are assessed together and a provision of 50% of the likely maximum claim value is made. The percentage will be reviewed periodically to ensure it represents a reasonable estimate of the expenditure on such claims.

2. Income

	2009 £'000	2008 £'000
Income from analytical, diagnostic work and research contracts	10,712	7,012
Sale of general produce and livestock	1,087	1,006
Charter of ship	125	215
Rents receivable	9	7
Total	**11,933**	**8,240**

Fees and charges

A detailed analysis of the required information is not provided as the full cost of each service provided does not exceed £1m and the income and cost of each service provided is not material to the accounts.

3. Staff Costs and Employee information

Permanently appointed staff.

	2009 £'000	2008 £'000
Salaries and wages	20,093	19,140
Social security costs	1,436	1,354
Other pension costs	3,391	3,297
Other staff engaged on objectives of AFBI		
Short term and casual staff	1,233	796
Adjustment to pension liabilities	-	5,506
	26,153	30,093

Permanently appointed staff

The average numbers employed during the year is as follows:

Board members (including Chairperson)	13
Administration*	108
Scientific*	605
Industrials	81
Short term and casual staff	64

*includes the grading of a number of Scientific posts into Administrative posts (Statistician and IT).

The Principal Civil Service Pension Scheme (Northern Ireland) (PCSPSS(NI)) is an unfunded multi-employer defined benefit scheme, which produces its own resource accounts, 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 2003 and details are available in the PCSPSS(NI) accounts.

For 2008/09, employer's contributions of £3,390,550.25 (2007/08 £3,296,556.72) were payable to the PCSPS(NI) at one of four rates in the range 16.5 to 23.5 percent (2007/08: 16.5 to 23.5 percent) of pensionable pay based on salary bands. The contribution rates reflect benefits as they are accrued, and reflect past experience of the scheme.

Employees joining after 1 October 2002 could opt to open a partnership pension account or a stakeholder pension with an employer contribution.

Employer's contributions were paid to one or more of a panel of four appointed stakeholder pension providers. Employer contributions are age related and range from 3 to 12.5 per cent of pensionable pay. Employers also match employee contributions up to 3% of pensionable pay. In addition, employer contributions of 0.8% of pensionable pay were payable to PCSPS(NI) to cover the cost of future lump sum benefits on death in service and ill health retirement of these employees.

4. Administrative costs: other

	2009		2008	
	£'000	£'000	£'000	£'000
Travel and subsistence		302		313
Computer support		166		179
Accommodation costs				
Lease of land and buildings	6,779		6,759	
Rates and water	1022		974	
Electricity	1361		858	
Oil	271		210	
Gas	936		676	
Repairs and maintenance	450	10,819	561	10,038
Postage, printing and stationery		168		185
Communications and marketing				
Telephone	245		270	
Marketing and advertisements	213	458	117	387
Internal consultancy and recruitment		61		36
Contracted out services		1,634		1,610
Hospitality		10		28
Training, conferences and library expenses		1,041		1,038
Legal costs and compensation		69		17
Increase in provision for legal costs		533		226
Increase in provision for early retirement costs		149		-
Irrecoverable VAT		1,891		1,568
Other expenses		248		130
Depreciation		314		382
Loss on disposal on fixed assets		4		-
Asset impairment		60		25
Audit fees		30		44
		17,957		16,206

5. Programme costs

	2009 £000	2008 £000
Livestock purchases adjusted for stock	133	(198)
Animal feed and veterinary expenses	652	624
Laboratory consumables	1,547	1,673
Plants, shrubs, fertiliser	157	145
Motor and tractor expenses	325	306
Laboratory equipment maintenance and other expenses	829	998
Apparatus, glassware and minor equipment	1,018	1,180
Protective clothing	75	75
Clinical and other waste disposal costs	556	560
Hire of plant and vehicles	158	97
Ship operating costs	1,657	1,737
Other expenses	348	327
Debt provision and charges	(123)	234
Depreciation	2,134	1,480
Loss on disposal of fixed assets	25	(2)
Loss on theft of livestock	21	-
Release from Donated Assets Reserve	(54)	(49)
	9,458	9,187

6. Tangible fixed assets

	Plant & machinery £'000	Information Technology £'000	Transport Equipment £'000	Donated assets £'000	Assets under construction £'000	Total £'000
Cost or valuation						
At 1 April 2008	20,522	1,638	3,403	268	584	26,415
Additions	899	170	389	-	-	1,458
Disposals	(726)	(20)	(27)	-	(490)	(1,263)
Revaluations	922	-	152	11	-	1,085
Impairments	-	(127)	-	-	-	(127)
Net transfers in	-	94	-	-	(94)	-
At 31 March 2009	21,617	1,755	3,917	279	-	27,568

	Plant & machinery £'000	Information Technology £'000	Transport Equipment £'000	Donated assets £'000	Assets under construction £'000	Total £'000
Depreciation						
At 1 April 2008	(11,524)	(992)	(1,099)	(49)	-	(13,664)
Charge for the year	(1,726)	(214)	(353)	(54)	-	(2,347)
Disposals	666	16	20	-	-	702
Revaluations	(585)	-	(83)	(4)	-	(672)
Impairments	-	79	-	-	-	79
At 31 March 2009	(13,169)	(1,111)	(1,515)	(107)	-	(15,902)
Net book value						
At 1 April 2008	8,998	646	2,304	219	584	12,751
At 31 March 2009	8,448	644	2,402	172	-	11,666

7. Intangible fixed assets

Intangible fixed assets comprise software licences.

	£'000
Cost or valuation	
At 1 April 2008	358
Additions	83
Disposals	-
Revaluations	-
Impairments	(28)
At 31 March 2009	413

	£'000
Depreciation	
At 1 April 2008	(137)
Charge for the year	(101)
Disposals	-
Revaluations	-
Impairments	16
At 31 March 2009	(222)

Net book value	
At 1 April 2008	221
At 31 March 2009	191

8. Stock

	2009 £000	2008 £000
Livestock and sundry stock at Hillsborough and VSD	1,104	952
Stores at Newforge and Stoney Road	128	126
	1,232	1,078

9. Debtors

	£000	2009 £000	£000	2008 £000
Amounts falling due within one year				
Trade debtors	4,653		1,867	
Less: Bad debt provision	(139)		(268)	
		4,514		1,599
Other debtors		78		187
Prepayment and accrued income		2,224		1,971
		6,816		3,757
Amounts owed by Central Government bodies		2,730		1,893
Amounts owed by bodies outside Central Government		4,086		1,864
		6,816		3,757

10. Cash in hand

	2009 £000	2008 £000
Bank No 1 Account	-	699
Petty cash	3	3
	3	702

11. Creditors

	2009 £000	2008 £000
Amounts falling due within one year		
Bank overdraft	682	-
Vat	262	286
Other taxation and social security	25	11
Trade creditors	734	2,750
Capital creditors	69	99
Accruals and deferred income	2,815	3,568
	4,587	6,714
Amounts owed to Central Government bodies	2,133	2,586
Amounts owed to bodies outside Central Government	2,454	4,128
	4,587	6,714

12. Provisions

	NILGOSC £000	Other £000	Early departure costs £000	TOTAL £000
Balance at 1 April 2008	(6,000)	(254)	-	(6,254)
(Additions) / Deductions	-	(533)	(149)	(682)
Payments	-	-	18	18
Actuarial Gain / (Loss)	(2,099)	-	-	(2,099)
Income	1,435	-	-	1,435
Provisions	(6,664)	(787)	(131)	(7,582)

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

NILGOSC

The closure of the ARINI pension scheme raised a potential liability of £6 million at 31 March 2008 arising from a deficit in the former ARINI pensions fund and a cessation penalty imposed by the administrators of the scheme due to the loss of future contributions. Further advice, from the Government Actuary Department, received by the Institute indicates that the provision should be revised to £6.664m at 31 March 2009.

Other

These relate to legal cases due to come to the tribunals in the coming year. Legal claims are assessed together and a provision of 50% of the likely maximum claim value is made. This percentage is to reviewed on an ongoing basis to ensure it continues to represent a reasonable estimate of the expenditure on such claims.

12a Pensions Provision: NILGOSC

Analysis of Amount Charged to Operating Profit

	Year to 31 March 09		Year to 31 March 08	
Amount charged to operating profit	£000	% of Payroll	£000	% of Payroll
Service cost	-		-	
Past Service Cost	-		-	
Curtailment and Settlements	(1,435)		-	
Decrease in irrecoverable Surplus	-		-	
Adjustment to opening provision and cessation adjustments	-		-	
Total Operating Charge (A)	**(1,435)**	0.00%	-	0.00%
Amount Credited to Other Finance Income				
Expected Return on Employer Assets	**(679)**		684	
Interest on Pension Scheme Liabilities	**679**		(612)	
Net Return (B)	-		72	
Net Revenue Account Cost (A) - (B)	**(1,435)**		(72)	

Analysis of Amount Recognised in Statement of Total Recognised Gains and Losses (STRGL)

	Year to 31 March 09 £000	Year to 31 March 08 £000
Actual Return Less Expected Return on Pension Scheme Assets	(2,158)	(1,015)
Experience Gains and Losses arising on Scheme Liabilities	-	380
Changes in Assumptions underlying the Present Value of Scheme Liabilities	-	1,527
Actuarial Gain / Loss in Pension Plan	(2,158)	892
Increase/(Decrease) in Irrecoverable Surplus from Membership Fall and Other Factors	59	-
	-	-
	(2,099)	**892**

Movement in Surplus / Deficit during the year

	Year to 31 March 09 £000	Year to 31 March 08 £000
Surplus/Deficit at the Beginning of the year	(6,000)	(1,458)
Current Service Cost	-	-
Employer Contributions	-	-
Contributions in respect of Unfunded Benefits	-	-
Other Income	-	-
Other Outgo (e.g. expneses, etc.)	-	-
Past Service Costs	-	-
Impact of Settlements and Curtailments	-	-
Net Return on Assets	1,435	72
Actuarial Gains / (Losses)	(2,099)	892
Surplus/(Deficit) at End of Year	(6,664)	(494)
Adjustment as a result of proposed bulk transfer	-	(5,506)
Balance as per note 12	(6,664)	(6,000)

Balance Sheet Disclosures as at 31 March 2009

	31 March 09	31 March 08
Price increases	3.1%	3.6%
Salary increases	4.6%	5.0%
Pension increases	6.5%	7.3%
Discount rate	6.9%	6.9%

Assets employed

	Long Term Return at Year to 31 March 09		Long Term Return at Year to 31 March 08	
	% per annum	£000	% per annum	£000
Equities	7.0%	5,470	7.7%	7,987
Bonds	5.4%	1,049	5.7%	1,174
Property	4.9%	525	5.7%	822
Cash	4.0%	450	4.8%	157
Total		7,494		10,140

Net Pension Asset as at

	Year to 31 March 09 £000	Year to 31 March 08 £000
Estimated Employer Assets (A)		
Present Value of Scheme Liabilities	7,494	10,140
Present Value of Unfunded Liabilities	(8,158)	(10,081)
Total Value of Liabilities (B)	(664)	59
Impact of Irrecoverable Surplus	-	(59)
Net Pension Asset (A-B) before cessation adjustment	(664)	-

13. General Reserve

	2009 £000	2008 £000
Balance at 1 April 2008	4,364	8,541
Grant in Aid from DARD	44,138	41,992
Net operating cost	(40,426)	(47,432)
Actuarial gain/(loss) (see note 12a)	(2,099)	892
Transfer from Revaluation Reserve	205	113
Cost of capital	226	258
Balance at 31 March 2009	6,408	4,364

14. Revaluation Reserve

	2009 £000	2008 £000
Balance at 1 April 2008	960	900
Arising on revaluation in the year	404	173
Transfer to General Fund of realised element	(205)	(113)
Balance at 31 March 2009	1,159	960

15. Donated Assets Reserve

	2009 £000	2008 £000
Balance at 1 April 2008	217	-
Additions during the year	-	266
Transfer to Income Statement	(54)	(49)
Arising on revaluation in the year	9	-
Balance at 31 March 2009	172	217

16. Cash flow statement

16.1 Reconciliation of operating deficit to net cash outflow from operating activities

	Note	2009		2008	
		£000	£000	£000	£000
Net operating cost			(40,426)		(47,432)
Adjustments for non-cash transactions					
Depreciation		2,394		1,862	
Impairment of Fixed Assets		60		25	
Release on donated assets		(54)		-	
Profit on disposal of fixed assets		29		(2)	
(Decrease) / Increase in provision of legal costs		533		226	
(Decrease) / Increase in provision for early retirement costs		149		-	
Cost of capital		226		258	
Net adjustment to pension provision		(1,435)		5,434	
(Decrease) / Increase in bad debt position		(123)		234	
Total non-cash transactions movement			1,779		8,037
Adjustments for movement in working capital other than cash					
(Increase) / decrease in stock		(154)		(500)	
(Increase) / decrease in debtors		(2,930)		(854)	
Increase / (decrease) in creditors		(2,780)		3,129	
Total movements in working capital other than cash			(5,864)		1,775
Net cash flow from operating activities			(44,511)		(37,620)

16.2 Analysis of movement in cash balances

	2009	2008
	£000	£000
Cash in bank at 1 April 2008	702	(1,238)
Net cash (outflow) / Inflow	(1,381)	1,940
Cash in bank at 31 March 2009	(679)	702

17. Capital commitments

The Institute has no capital commitments at the year end.

18. Commitments under leases

The Institute had no material operating lease obligations in 2008/2009. At the year end commitments existed in respect of annual rentals of £6,720,000 per annum for the foreseeable future.

	£'000
Within one year	6,720
In the second to fifth years	26,880

19. Finance leases

The Institute had no finance leases during 2008/2009.

20. Commitments under PFI contracts

The Institute had no PFI contracts during 2008/2009.

21. Contingent liabilities

There are no contingent liabilities at the year end.

22. Financial Instruments

The Institute 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 the Institute in undertaking its operations.

Liquidity risk

The Institute'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 the Institute'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 Institute's assets and liabilities are denominated in sterling so it has no exposure to currency risk.

Fair values

The book values and fair values of the financial assets and liabilities at 31 March 2009 are not considered to be materially different.

23. Losses and special payments

a) Losses statement

There were no cases where significant losses had been incurred.

b) Special payments

There was one case of ex-gratia payment amounting to £1,000 to a retired member of staff who was experiencing financial hardship while the ARINI NILGOSC pensions exercise was being completed.
There were no extra-statutory payments.

24. Related party transactions

The Department of Agriculture and Rural Development is the parent Department of the Institute with which it had various material transactions during the year and is regarded as a related party.

In addition the Institute had some transactions with other government departments and other 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 and DEFRA.

	2009 £'000	2008 £'000
Debtors (amounts due within one year) (Note 9): Balances with other central government bodies	2,730	1,893
Creditors (amounts due within one year) (Note 11):	2,133	2,586

25. Third party assets

The Institute does not hold any third party assets.

26. Post Balance Sheet events

There were no events after the Balance sheet date which would require adjustment to the financial statements.

afbi Agri-Food and Biosciences Institute

Our Vision is to be an internationally recognised and successful centre of excellence for scientific research and services in the biosciences.

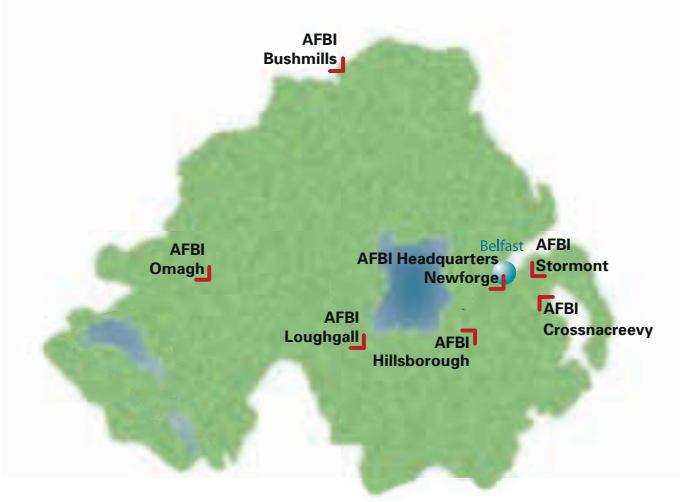
AFBI's mission is to deliver effective, high quality scientific services to local, national and international public and private sector customers.

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 sites throughout Northern Ireland

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; oceonography; 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.

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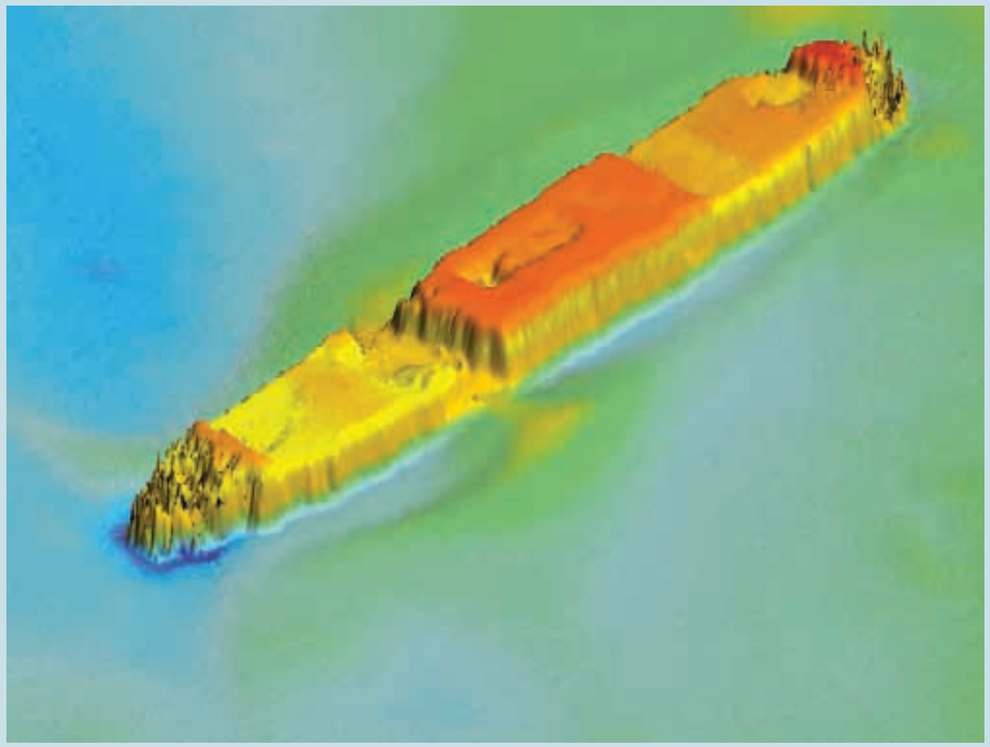

The SS Neotsfield was built in 1906 by Furness & Withy of West Hartlepool. She grossed 3,821 tons, 2488 net, and measured 340 x 47.1 x 27.4ft. and was powerd by a 3 cylinder triple-expansion steam engine which generaled 317 h.p. and was fitted with a 4 inch stern gun.
She was torpedoed by UB-64 whilst carrying 4,158 tons of coal, 808 tons of coke from the Clyde to Naples.
Scanned with a Multibeam Sonar system by AFBI Marine Aquatics Team in 2008.