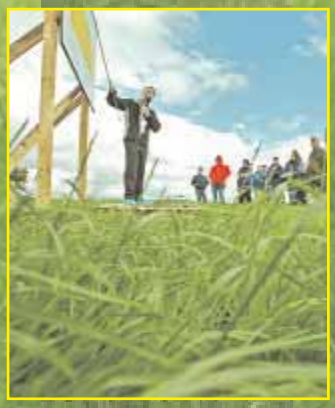
RESEARCH

KNOWLEDGE



IMPACT

Annual Report 2005

and financial statements

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teagasc

Agriculture and Food Development Authority

TEAGASC ANNUAL REPORT 2005
AND FINANCIAL STATEMENTS

To the Minister for Agriculture and Food

Pursuant to Section 13 of the Agriculture (Research, Training and Advice) Act, 1988, the Teagasc Authority herewith presents its report for the period January 1, 2005 to December 31, 2005.

An Irish language version of this report is also available.

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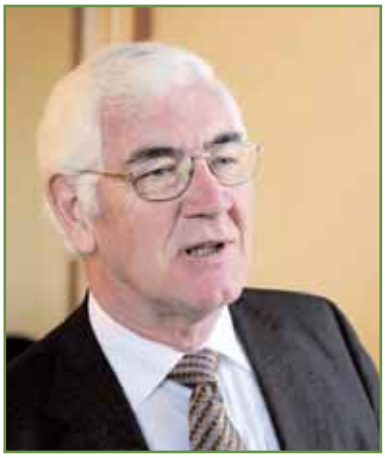
Mission Statement

To generate and apply new knowledge for the sustainable development of agriculture and the food processing industry to enable it to respond profitably to consumer demands and requirements and contribute to a vibrant rural economy and society.

Chairman's Statement



Fundamental policy changes impacted on Irish agriculture in 2005. The Luxembourg CAP reform agreement was implemented from the start of the year. The biggest and most profound development was the decoupling of farmers' direct subsidies from production. This removed the obligation on farmers to produce in order to qualify for their subsidy payments. Instead, a single payment was made in December and the business emphasis has been placed back firmly on what the market can return for products.

It has been a year of change in Teagasc too, as the organisation responded and adapted in a planned and measured way to this changing farming environment. The reorganisation of our education and training courses, along with the restructuring of our advisory services, position the organisation to better service the needs of our clients in the future.

Our investment in new biotechnology research facilities positions us at the cutting edge of both food and agricultural research. Research is a driving force within Teagasc and within Irish agriculture. Our agriculture research programmes are firmly focused on improving efficiencies on farms. Our food research programmes will increasingly focus on food for health and innovation in the food industry. As farming and the agri-food industry become more market-driven, Teagasc research is providing solutions in this new environment.

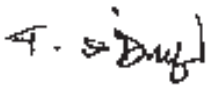
During the year, Teagasc worked closely with a number of public bodies, organisations, individuals and companies in the agri-food sector. These linkages are vital to ensuring effective and efficient delivery of our services to clients and stakeholders. In particular, the organisation worked well with a number of co-operatives and food companies on a range of joint programmes. These links with the commercial sector are important and further strengthen our ability to meet the needs of our customers. Our co-operation with universities and research institutions, both in Ireland and abroad, is critical to sharing information and increasing the overall knowledge base within the organisation.

I acknowledge the assistance and support of the Minister for Agriculture and Food, Mary Coughlan TD, and that of the two Ministers of State in the Department, John Browne TD, and Brendan Smith TD. I wish John Browne well in his new portfolio as Minister of State in the Department of Communications, Marine and Natural Resources. To Mary Wallace TD, I offer my congratulations on her appointment as Minister of State at the Department of Agriculture and Food, and I look forward to continuing our good working relationship with her.

The Secretary General of the Department of Agriculture and Food, Tom Moran, and his officials provided invaluable assistance to the organisation over the course of the year on a range of issues.

The most important asset that Teagasc has is its staff and the knowledge they possess individually and collectively. I want to express my appreciation to the Director, Jim Flanagan, the management team and all the staff for their dedication and commitment to their work during the past year.

Finally, to my colleagues on the Authority, I want to record my appreciation for the time and commitment they have given the organisation in 2005.



Dr Tom O'Dwyer
Chairman

Director's Review

Significant progress was made in 2005 in achieving the goals and objectives of the organisation as laid out in the Statement of Strategy 2005-2007. In particular, the research efforts in agriculture and food will underpin further improvements in the competitiveness of the industry. The focus in both dairy and beef research was on increasing profitability through better management and cost control. A particular emphasis was placed on developing better breeding programmes.

Moorepark has demonstrated that using high EBI cows will increase profits on farms by reducing costs and improving the productivity of animals over their lifetime. Grange Research Centre undertook two major studies to validate the Irish Cattle Breeding Federation (ICBF) Beef Breeding Index.

Our sheep research programme has pointed the way towards higher birth weights and earlier drafting of finished lambs through a well-managed outdoor winter feeding system.

The decoupling of subsidies in the cereal sector has revealed how transparently low the margins in the sector are. Our research in Oak Park has shown that winter wheat yields in a low input system can match those of a conventional input system, leaving a higher margin for the grower.

Two new potato varieties were patented during the year, one with excellent blight resistance, which could have a significant role to play in the future, particularly on organic units.

The Advisory Directorate has been restructured to allow for greater specialisation and greater integration with the Research and Training Directorates. Advisory staff have been allocated to four services: Business and Technology; Good Farming Practice; Rural Development; and Adult Education. A new structure with 18 Area Managers has replaced the old county divisions. This will better position the organisation to service the needs of our growing client base, whose numbers increased by 20% to 40,700 last year.

2005 marked the introduction of the Single Farm Payment System, which involved a major campaign to inform our farmer clients of the details of the scheme and to assist them in establishing and claiming their entitlements. Great credit is due to our staff for the professional delivery of this important service.

Demand for REPS3 planning services continued to grow. Our Options for Farm Families Programme assisted over 2,500 farm families to weigh up their opportunities and take firm decisions for their future.

Development Units in forestry, pigs and horticulture were established in 2005. These new units involve the research and advisory staff working more closely together to provide an integrated service to our customers.

A review of the education and training programmes was undertaken and the resulting recommendations are being implemented. The need for greater flexibility in delivering our training programmes to meet the changing requirements of customers was clearly identified. Specifically, this involves integrating training with the advisory and research functions. The need for shorter work placements for students, along with the acquisition of work experience on the home farm, were among the key changes recommended.

Innovative Food Research

Exciting and innovative developments occurred in food research in 2005. Moorepark Food Research Centre (MFRC) and Ashtown Food Research Centre (AFRC) operated as part of the same directorate. Consumers are becoming increasingly conscious of the role that food plays in maintaining health. A new research initiative, 'Foods for Health', was started and is part of a new 'Vision' programme for research in the organisation. A study examined the potential health benefits arising from Conjugated Linoleic Acid, a component of milk fat, in a range of foods like cheese, pork products, and beef.

A new research programme commenced with the aim of developing technology to formulate foods targeted at the obese.

Two cheese projects will assist the dairy industry in identifying opportunities to diversify away from the traditional cheeses, such as cheddar and mozzarella. One study involves an analysis of the UK market for opportunities for high volume value added cheeses. This project is being funded from the Dairy Research Trust.

Much of the technology transfer from MFRC and AFRC was achieved through commissioned research by food companies and there was increased use of Moorepark Technology Ltd by food companies, particularly in the dairy industry.

The new biotechnology centre in Moorepark was officially opened, marking a significant step in our determination to continue at the cutting edge of research. MFRC has formalised a strategy for its animal biotechnology programme. The centre holds a large DNA depository, including samples from over 3,500 cows, 220 progeny tested bulls and 180 pigs.

A food safety and hygiene training course was delivered in Russian, Latvian and Polish, reflecting the mix of nationalities now working in the horticultural industry.

Sustainable Agriculture

The environment advisory programme focused on improving the efficiency and delivery of services to REPS clients. Particular attention was given to water quality by promoting efficient nutrient use and better manure management.

Teagasc staff prepared 4,500 REPS 3 plans last year and assisted clients in claiming €107 million in REPS payments during the year. A new web-based REPS planning system, eREPS, was developed and introduced in June.

More than 1,050 farm waste management schemes were processed, along with 500 dairy hygiene schemes. Together, these plans supported clients in claiming €15 million in grants and are an indication of the commitment of those

Director's Review contd.

involved in farming to their businesses in the future. Recent research has shown that phosphorous could be reduced without compromising grass yields. These results were used to support the preparation of Ireland's action programme for the implementation of the Nitrates Directive.

Differences between soil types were found to be a key issue in relation to the use of phosphorous and nitrogen for grassland. The outcome of this research will allow further efficiencies to be achieved in the use of these nutrients.

Teagasc has linked up with UCD on a research project to map the habitats of the Burren. Using satellite imagery, a map of the broad habitat types in the Burren has been successfully created. This has provided the first estimate of the area affected by scrub encroachment.

Viable Rural Areas

A major government aim is to build a competitive and environmentally sustainable rural economy. Teagasc's Rural Economy Research Centre, with the National University of Ireland, Maynooth and University College Dublin, undertook a foresight study to determine if this objective could be achieved in the current climate. The research found that unbalanced regional development and the impact of globalisation threaten the economic viability and long-term sustainability of rural areas. It concluded that this would manifest itself in the continued decline in the number of full-time farmers and in a restructuring of the agri-food sector.

The National Farm Survey showed that the average family farm income in 2004 increased by 5.4%, to €15,537. On full-time farms, income increased by 8%, to €30,650, with the highest returns being generated by dairy farmers. On 78% of farms, the farmer and/or spouse had other sources of income, leaving just 20% of farms dependent on farming solely for their income.

The Rural Economy Research Centre carried out research on the competitiveness of Irish agriculture and showed that the competitive position for milk production was very positive when compiled on a total cash costs basis. However, there were warning signs for the average sized Irish dairy farm when total economic costs were considered.

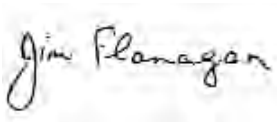
A Modern Organisation

Teagasc is committed to providing a high quality service to its customers and I acknowledge the current excellent service provided by our staff. Last year a Customer Charter was published outlining the standards of service our customers can expect. Thirteen commodity teams were established to provide advice and feedback on the organisation's research and advisory services and their input is incorporated into the 2006 business plans.

The organisation established a staff training and development unit to ensure staff maintain a high level of service.

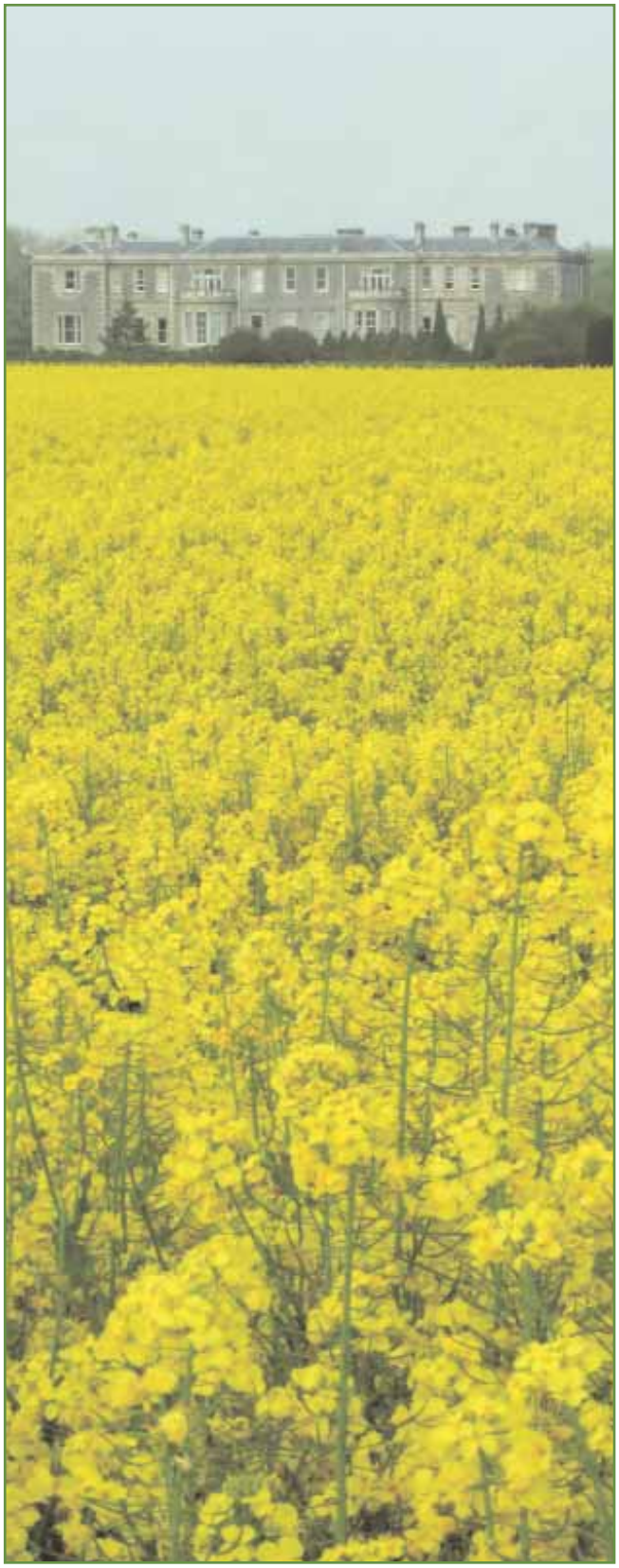
During 2005, a number of properties that were not required for core programmes were disposed of. The €6.5 million obtained was reinvested to improve facilities and infrastructure. When State Grant-in-Aid was included, a fund of €8 million was available and used to build a new conference and training facility at AFRC, office facilities at Johnstown Castle, additional offices in Athenry, new laboratory facilities in Oak Park and new milking and research facilities in Moorepark. An investment of €4.5 million was used to improve the ICT infrastructure.

These investments will equip Teagasc to continue to acquire and deliver knowledge to the agriculture and food sectors into the future.



Jim Flanagan
Director

About Teagasc



Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities. It was established in September 1988 under the Agriculture (Research, Training and Advice) Act, 1988.

The organisation is funded by State Grant-in-Aid; the National Development Plan 2000 to 2006; fees for research, advisory and training services; income from national and EU competitive research programmes; and revenue from farming activities and commodity levies.

Teagasc is governed by an eleven-member Authority. The Chairman and five ordinary members are appointed by the Minister for Agriculture and Food and the remaining members are appointed by the Minister following nominations from designated organisations.

In 2005, research services were delivered at eight dedicated centres covering food, dairying, beef, sheep, arable crops, horticulture, environment, economics and rural development.

Independent advice to farmers and rural dwellers was provided by local advisors and regional specialists from a network of regional, county and local centres. Training for young entrants, adult farmers, rural dwellers and the food industry was provided by teachers and technicians at eight colleges, as well as at local training and research centres.

In 2005, Teagasc employed 1,579 staff, including permanent and contract staff. This comprised 762 professional, 221 technical, 279 administrative/clerical and 317 farm/domestic staff.

Teagasc Headquarters, Oak Park, Carlow.

Teagasc Authority Members

Dr Tom O'Dwyer
Chairman, held a number of key positions in the EU Commission in Brussels, including Director of Livestock Products, Director General of Education, Training and Youth and Chef de Cabinet to two EU Commissioners.

Mr James Beecher
Assistant Secretary with the Department of Agriculture and Food.

Mr James Brett
Managing Director, Brett Group, Callan, Co. Kilkenny.

Mr Ruaidhri Deasy*
Farmer and Deputy President of the Irish Farmers' Association

Mr Joe Fitzgerald
Farmer and member of the Dairy Committee and National Council of the Irish Creamery Milk Suppliers Association.

Mr Stephen Flynn
Technical Officer with Teagasc at Ashtown Food Research Centre, Ashtown, Dublin, representing Teagasc staff.

Professor Patrick Fottrell
Former President of the National University of Ireland, Galway. Chairman, Science Foundation Ireland.

Mr Jerry Henchy
Chief Executive, Dairygold Co-operative Society Ltd.

Mr Patrick J. Kelly
Farmer and former National Chairperson of Macra na Feirme.

Ms Anna May McHugh
Managing Director, National Ploughing Association.

Mr Michael O'Dwyer
Farmer and former President of the Irish Co- Operative Organisation Society.

* Since 2006 replaced by Derek Deane, Deputy President of the Irish Farmers' Association.

Membership of Teagasc Authority Committees

Remuneration and Property Committee
Dr Tom O'Dwyer (Chairman)
Mr James Beecher
Mr James Brett
Ms Anna May McHugh

Audit Committee
Mr Michael O'Dwyer (Chairman)
Mr James Beecher
Mr Jerry Henchy
Dr Tom O'Dwyer
Mr Ronan Tierney (Advisor to Committee)

Advisory and Training Committee
Mr Joe Fitzgerald (Chairman)
Mr Ruaidhri Deasy
Mr Stephen Flynn
Mr Patrick J. Kelly
Ms Anna May McHugh
Mr Michael O'Dwyer

Personnel and Finance Committee
Dr Tom O'Dwyer (Chairman)
Mr James Beecher
Mr James Brett
Professor Patrick Fottrell

Research Committee
Professor Patrick Fottrell (Chairman)
Mr James Beecher
Mr Ruaidhri Deasy
Mr Stephen Flynn
Mr Jerry Henchy
Mr Patrick J. Kelly

Teagasc Senior Management

Mr Jim Flanagan
Director

Mr Pat Boyle
Head of Advisory Services Directorate

Mr Donal Carey
Head of Training and Development Directorate

Dr Seamus Crosse
Head of Agriculture Research Directorate

Dr Liam Donnelly
Head of Food Research Directorate

Mr Tom Kirley
Head of Administration Directorate

Mr Peter Seery
(Deceased March 2006)
Head of Management Services Directorate

Teagasc in 2005

Advisory SFP Campaign

Teagasc assisted a record number of farmers in completing their applications for the Single Farm Payment Scheme in 2005. The organisation played a vital role in helping farmers to secure their entitlements and draw down payments worth €1.3 billion. Overall, the organisation increased its number of advisory clients by 20% in 2005, to 40,700.

Using Grass to Improve Cost Efficiency
Further progress was achieved in improving the competitiveness of dairy and beef production through better utilisation of grazed grass. Research has shown that increasing the amount of grazed grass in the diet by 10% can reduce the costs of milk production by 2.5 cent per litre. On beef farms, grazed grass can support over 70% of the lifetime gain of the beef animal. For each extra day animals are at grass, costs are reduced.

eCollege Set Up
Teagasc has established an eCollege in response to the increasing demand from students for more flexible ways of completing their training. This is just one of the measures that emerged from a comprehensive review of the provision of training and education in the organisation. E-learning is the way of the future and Teagasc is set to expand its offering in the area.

Moorepark Biotechnology Centre Opened
The Minister for Agriculture and Food, Mary Coughlan TD, officially opened the Moorepark Biotechnology Centre in May. This development represents a new phase of development at the Moorepark Food Research Centre. The new laboratories can accommodate up to 40 researchers working on areas such as functional foods, food quality and safety, and on the development of molecular genetic tools for animal breeding.

National Food Residue Database Developed
The Food Safety Department at the Ashtown Food Research Centre developed an online national food residue database. The database provides a single source for data on chemical residues in Irish food. To assist users in the interpretation of the data, an extensive library of information is accessible via the website, including details on regulations, specifications and norms relating to residues in food.

Pictured at the launch of the NFRD database are (from left): Dr Liam Donnelly, Head of the Food Research Directorate, Teagasc; Dr. Michael O'Keeffe, Teagasc; Dr. Clare Thorpe, Department of Agriculture and Food; and Dr. Iona Pratt, FSAI.

Dairy Focus on EBI
A number of initiatives were continued to improve profits through better dairy breeding, in particular, the continuation of support for the EBI 100 competition. The twenty-five contestants short-listed for a farm visit were all high EBI herds with a common profit that is 1.8 c/litre higher than the average Teagasc client. Further initiatives in the area included successful open days at Moorepark and on the winner's farm in Cappagh, County Waterford.

Options for Farm Families
The Minister for Agriculture and Food, Mary Coughlan TD, officially launched the Options for Farm Families Programme, at the National Ploughing Championships. Designed to help

Teagasc in 2005 contd.

farmers and their families look at the challenges that lie ahead and evaluate the best opportunities open to them, the Programme assisted over 2,500 farmers in 2005.

New Training Facilities
Additional investment was made in upgrading training and educational facilities in a number of colleges. An Taoiseach, Bertie Ahern TD, officially opened new lecture rooms and computer training laboratories at Kildalton College in September. A new conference and training facility was built at the Ashtown Food Research Centre.

European Food Safety and Nutrition Conference
Ashtown Food Research Centre organised a major European conference on the science of food safety and nutrition, which was held in Croke Park in December. The conference was part of a series of six events organised under the auspices of an EU Sixth Framework Programme project (European Union Risk Analysis Information Network (EU-RAIN)).

Nitrates
During 2005, Teagasc provided advice and information to the Department of Agriculture and Food and the Department of the Environment, Heritage and Local Government in drafting the Statutory Instrument implementing the Nitrates Directive in Ireland.

An Taoiseach Bertie Ahern TD, officially opening the new facilities in Kildalton.

Pictured at the European Food, Safety and Nutrition conference are (from left): Declan Troy, Head of Ashtown Food Research Centre; Blaithin Maunsell and Declan Bolton, conference organisers; and John Treacy, Chief Executive of the Irish Sports Council, Dublin (and Olympic medallist), who spoke on the importance of sport and physical activity for health.

Introduction

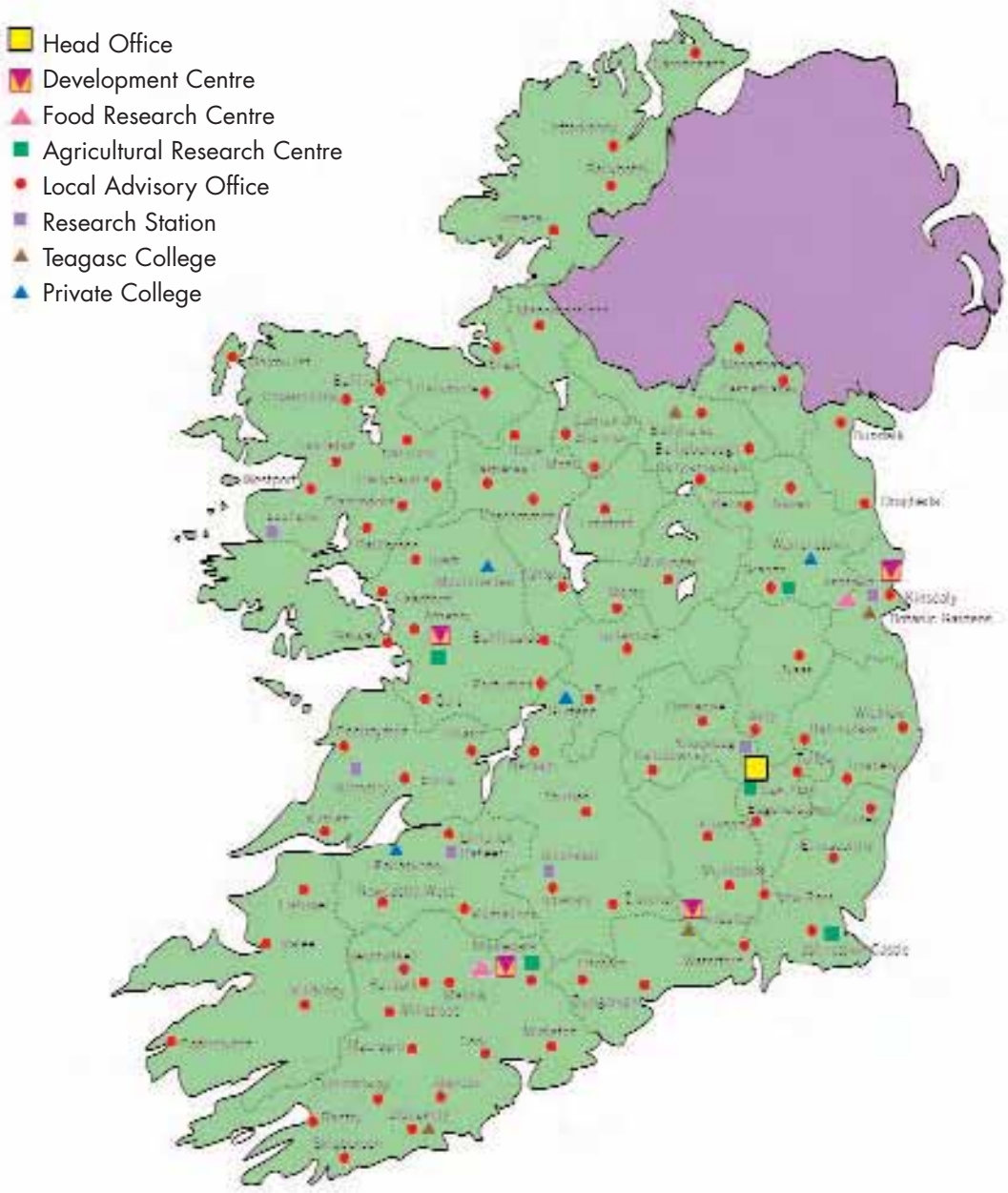
Increasingly, government policy identifies knowledge-based support as the key dimension to maintaining Ireland's competitiveness in all sectors of the economy, including the agriculture and food industries. In line with this, public support will increasingly focus on the provision of support to education, training and research & development as the way of ensuring the comparative advantage of Ireland's agri-food sector on world markets.

As the largest provider of knowledge-based services to the agri-food sector, Teagasc occupies, through its scientific reputation and impartiality, a leadership position in the industry's development. In line with the national vision for the creation of an innovation driven culture, the organisation will aim to strengthen its own capability and performance, as a basis for raising the technological absorptive capacity of the industry.

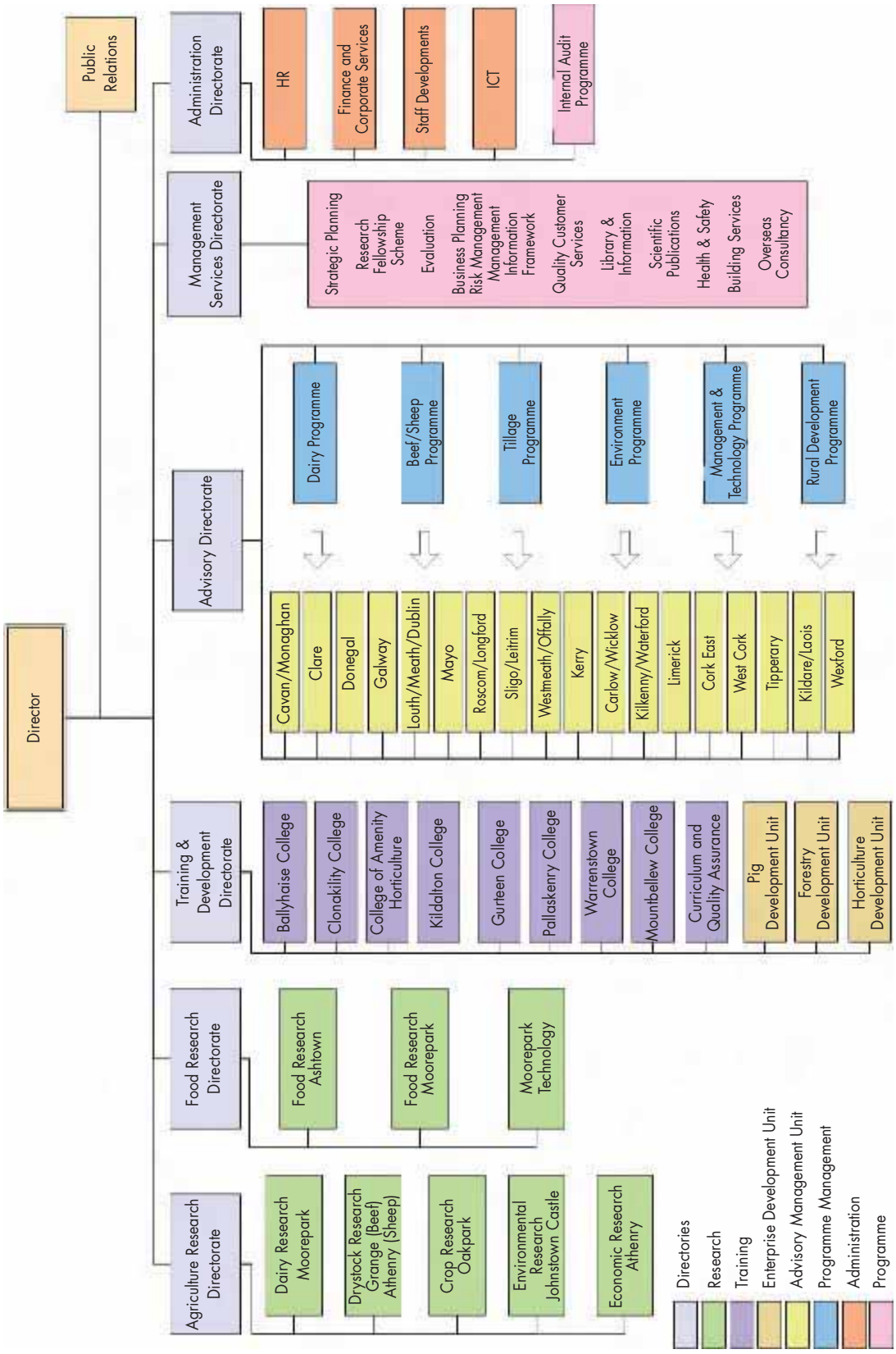
The 2005 Annual Report is based on the goals set out in Teagasc's Statement of Strategy 2005-2007. Highlights of the 2005 achievements in the areas of research, training and advisory services are summarised in the following pages, while progress under performance indicators is set out in Appendix 2.

Map of Locations

Teagasc Centres



Organisation Chart



Goal 1

Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

To achieve this goal, Teagasc implements research, advisory, education and training strategies for the development of primary agriculture, including horticulture and forestry.

The research strategies focus on generating scientific information and technologies for a range of farm enterprises designed to achieve improved productivity, reduced costs of production and increased value of output.

Third-level and vocational-level training courses aim to equip young entrants to agriculture and horticulture with best practice skills for modern farming.

The advisory strategies focus on transferring the latest cost-reduction technologies and production blueprints from research and modern farm management practices to the commercial farming sector.

Agriculture Research

Dairying

EBI revised

Researchers at Moorepark contributed to the development of the revised Economic Breeding Index (EBI) launched by ICBF. The index contains three new sub-indexes: calving performance, beef performance and health. Calving performance relates to the ability of the animal to produce viable offspring with minimal calving difficulty and short gestation length. High beef performance identifies animals whose progeny deliver heavier carcase weights of optimal conformation and fat score. Health traits relate to both lameness and mastitis. The relative weightings in the new revised EBI index are: milk production, 48%; fertility and survival, 31%; calving performance, 8%; beef performance, 7%; and health, 6%.

High EBI cows

Results from Moorepark showed that high EBI cows result in increased farm profit due to reduced costs and improved animal life-time productivity. Over five years, a high EBI herd achieved a pregnancy rate to first service, six week in-calf rate and overall pregnancy after 13 weeks of artificial insemination (AI) of 62%, 74% and 93%, respectively. An economic analysis of the study showed that the high EBI herd generated almost €9,000 more profit than a lower EBI herd on a 50,000-gallon quota. At farm level, the most efficient way that dairy farmers can achieve high rates of genetic progress is through the use of high EBI sires.

Extended lactation

The use of AI, in conjunction with intensive genetic selection programmes, has resulted in a marked increase in milk production of dairy cows. However, this increase has been associated with a marked reduction in reproductive performance, which represents a major source of financial loss. A study was undertaken at Moorepark to evaluate the role of extended lactation in reducing the cost of high empty rates in seasonal spring calving herds. Average milk production in first lactation (up to December 1) was 6,254 kg of milk, 467 kg of fat plus protein (4.04% fat and 3.42% protein) in 264 days, while in the extended lactation an additional average milk production of 4,932 kg of milk, 406 kg of fat plus protein (4.35% fat and 3.87% protein) was recorded in 330 days.

White clover on grassland

Moorepark researchers have developed a low cost approach to introducing and maintaining white clover in permanent grassland. This involves over-sowing clover seed onto silage stubble after first cut silage. Over the last two years, this approach has been tested on 30 farms around the country. Overall success rate has been around 70%.

White clover propagation in glasshouse facilities at Oak Park. Pictured is Walsh Fellow, Melanie Febrer.

North-South research initiative

In 2005, a new research initiative was agreed between Moorepark Dairy Research Centre, the Teagasc Advisory Service, the Agricultural Research Institute of Northern Ireland, Greenmount College, School of Agriculture, Food Science and Veterinary Medicine at University College Dublin and Queen's University, Belfast. The focus of the programme is on identifying the critical factors necessary for profitable dairy farming both North and South. The research will aim to highlight the underlying causes of variation in farm profits, which are common to both a fixed quota environment (as in the south of Ireland) and also to a quota-leasing scenario (as in Northern Ireland). The data generated from the study will be used to benchmark existing performance against targeted performance on a monthly basis and provide clear direction as to where increases in profitability can be achieved.

AI survey highlighted breeding challenge

A supplementary survey within the National Farm Survey was carried out in 2005 to investigate the reason for the low level of AI use within the Irish dairy herd. It is estimated that the rate of genetic increase within the herd at present is approximately €5/cow/year; using an optimum breeding programme, it could be five times higher. The main reason for this low rate of genetic progress is the low use of AI. Currently, it is estimated that only 35% of replacements entering dairy herds were bred from AI sires. The survey highlighted that the most important criterion used by farmers to select AI sires was the EBI index.

Agriculture Research contd.

Temporal trends in milk quality
The tiered milk payment system in Ireland penalises farmers supplying milk with high somatic cell count (SCC) and/or high total bacterial count (TBC). Bulk milk SCC and TBC values across years 1994 to 2004 from three Irish milk processors were analysed. Bulk milk SCC decreased between years 1994 (317,701 SCC/ml) and 2000 (228,411 SCC/ml), after which it increased at an annual rate of 5,000 SCC/ml to 250,913 SCC/ml. The proportion of milk collections with SCC>250,000 SCC/ml increased from 0.44% to 0.51% between 2000 and 2004. There was a general tendency for TBC to decrease over the period of the study.

Beef

Current payment for a beef carcass is based on the EUROP/Fat classification grid. However, a different payment method, such as that based on meat yield or weight of specified joints, may better reflect the true commercial value of a carcass. Grange Beef Research Centre is currently undertaking a study where up to 500 carcasses are selected from the EUROP/Fat classification grid and fully dissected. In conjunction with the Food Centre, Ashtown, some carcasses are being scanned, using X-ray computer tomography (CT), in an effort to predict carcass composition. Preliminary results showed that a one unit increase in carcass conformation, on a five-point scale, at the same fat score, increased carcass value by 19 c/kg. This resulted from an increase in carcass meat by 4.1%, reduced fat by 1.8% and reduced bone by 2.3 %. A one unit increase in fat score, on a five-point scale, reduced carcass value by 7.5 c/kg.

Beef Index System
Two major studies are underway at Grange to validate the recently launched ICBF beef index system. In the first study, over 120 male animals from 20 sires (10 high and 10 low beef index) were sourced from farms at the weanling stage and brought to Grange. The animals are being reared in either bull or steer production systems. Feed intake, growth rate and a range of skeletal and live animal measurements are being undertaken. At slaughter, full carcass dissection data will be collected and the theoretical carcass output based on their beef index will be compared with the actual carcass results. In the second study, using calves from the dairy herd, 130 progeny from sires with either high or low beef index for growth rate are used. These male animals will be reared to beef. The data from both studies will thus be used to validate the new beef index system.

Winter Feeding
Winter feeding costs are major components of the economics of beef production. Concentrate price is a significant component of these costs. The composition of the concentrate rations has a major influence on price, with a big difference being seen between simple and complex rations and mixtures. In a major study looking at concentrate type, where four types of ingredients were used, it is concluded that regardless of whether rations were based on barley, or maize or pulp, or combinations of these, similar performance was achieved. This result was similar whether the rations were fed on a restricted or *ad libitum* basis. The implications from this study are that producers have additional scope to procure cost-effective rations and that similar performance can be achieved with these rations.

Profitable Production Systems
Following decoupling of premia from animals, beef production systems must be profitable without premia, but systems will need to be more flexible than heretofore. For beef production where calves come from the dairy herd, it is concluded that Aberdeen Angus x Friesian cattle can be acceptably finished off pasture if all carcass weights exceed 250 kg. Hereford x Friesian cattle can also be finished off pasture, but with greater difficulty than the Angus crosses, and all carcass weights need to exceed 270 kg. Belgian Blue crosses are difficult to finish off pasture and, even when conventionally finished indoors, carcasses are low in fatness.

Agriculture Research contd.

Sheep

In sheep production, ewe management practices during winter can have a large effect on lamb birth weight, the latter being of major economic importance. The option of keeping sheep outdoors during the winter in a controlled grazing system has been examined for the past few years. One feature of this system has been the increased lamb birth weight associated with the outdoor winter grazing system. Comparisons of housed ewes that were either shorn at housing or unshorn showed that birth weight was 0.6 kg heavier when ewes were shorn at housing. Winter grazing of unshorn ewes had the same effect on lamb birth weight as shearing of housed ewes. These differences in birth weight led to differences of about 2 kg in live weight at weaning. The latter difference would result in lambs being ready for drafting 14 days earlier. This finding has the potential to be of major economic value to sheep producers.

Crops Research Programme

The crops research programme consisted of 35 research projects and produced 20 refereed publications and 86 technical and popular contributions. Two major open days were organised and a national crops conference was held in Carlow. Two patents were awarded for new Oak Park potato varieties and six new research investigations were commissioned by industry.

Generally, the season was less favourable for tillage crops and the yields of the main tillage crops were significantly reduced, partly due to weather constraints. Cereal yields were reduced and grain quality was much more variable compared to previous years. Spring barley yields were hardest hit, with a combination of factors reducing average yields. Potato yields were also reduced and disease pressure from potato blight was severe.

Work is continuing on the development of more efficient crop production systems designed to increase competitiveness and improve product quality and safety, while at the same time facilitating long-term sustainability of production. Trials designed to develop reduced cost systems for cereals performed well. The use of lower levels of inputs in winter wheat production systems resulted in significant cost savings and improved production margins relative to traditional input systems. Wheat yields in the low input systems matched those of conventional inputs resulting in an improved production margin of €98/ha.

Yield responses of four to five tonnes per hectare to disease control programmes were obtained in winter wheat, with a margin over costs of €190 to €250 per hectare.

Biotechnology

The plant biotechnology programme concentrated on developing molecular-based techniques that will enhance the effectiveness of the successful breeding programmes in grass, clover and potatoes. The potential effects of genetically modified crops on the environment were also studied and the work was used in the compilation of co-existence guidelines for Ireland that will enable both GM and non-GM plants to co-exist with minimum risk.

Organic Farming

Studies with organic farming systems continued successfully in 2005. Results showed that winter wheat yielded 6.4 t/ha, while oat crops yielded 6.0 t/ha. Setanta, a new Teagasc-bred potato variety with excellent blight resistance, yielded 41.4 t/ha and offers good future potential for organic farmers.

Biofuels

Studies on non-food uses of crops showed that farmers could make a significant contribution to Ireland's national energy supply and that for every 1% of farmed land devoted to biofuel production, approximately 1% of the national energy requirement could be fulfilled. Studies concentrated on liquid and solid biofuels and their potential.

Harvesting of the energy crop miscanthus, or elephant grass, at Oak Park.

Training and Education

The Education and Training Forum completed a review of the education and training provision in 2005. The main recommendations were to:

- Shorten work placements through the introduction of a well-structured home farm placement delivered and supported by a group of hosts.
- Replace the current 100-hour and 80-hour courses for students with a non-agricultural Level 6 qualification based on a programme leading to an Advanced Certificate in Farming, incorporating home farm placement and proficiency testing.
- Integrate Teagasc training function with advisory and research functions.
- Extend the role of colleges by leveraging the college infrastructure to support other Teagasc functions and to utilise the college infrastructure to facilitate the delivery of programmes by other agencies and organisations.
- Provide work-based training for operatives, particularly focused on those engaged in the pig, horticulture and forestry sectors. In addition, develop programmes focusing on the education and training needs of foreign workers.

An implementation plan has been prepared and the recommendations are being implemented.

eCollege

The organisation established an eCollege at Kinsealy and four staff were assigned to provide online courses in agriculture, horticulture, and food production. Over 240 students are currently completing courses. In addition to the four core staff, 24 eTutors have been trained to provide support for students. The college has formed a link with Carmarthenshire college in Wales, which now provides the Virtual Learning Environment (VLE) for all online courses.

Immediate plans for the eCollege include a significant increase in numbers on the online 180-hour agricultural training programme, with a full complement being enrolled for January 2006. Future developments will include the roll out of online discussion groups, the development of online horticultural courses and collaboration with the Ashtown Food Research Centre in the delivery of food safety training.

Mary Durnin, Administrator; Mairead Kirk, eCollege Coordinator; An Taoiseach, Bertie Ahern TD; Thomas Harty and Carmel Finlay, eCollege Development Officers at the launch of the new Teagasc eCollege in November.

Adult Farmer Training

In 2005, 8,884 adult farmers completed training programmes (17% female) and, of these, 5,782 were awarded FETAC certificates. The largest category was the REPS training courses, with 4,218 participants. The 100-hour Certificate in Agriculture was completed by 781 participants, who went on to complete the 80-hour Certificate in Farm Management. Two hundred and eighty completed the programme online through the eCollege.

The Vocational Certificate in Agriculture for part-time farmers was delivered at 14 centres, with 447 participants. These programmes were mainly delivered at nights and weekends and at local centres to facilitate the needs of part-time farmers.

Adult training modules were delivered in the following areas: technology and business, rural viability, health and safety, forestry, alternative enterprises, information technology and pesticides.

Education and Training of Young People

Training programmes were delivered at eight colleges and at a number of local centres in agriculture, horticulture, horse

Frank Murphy, College Principal at Kildalton College, addressing a group of students at the careers open day.

breeding and training and forestry. Specialised advanced courses were also provided in dairy herd management, machinery and crop management, farm management, drystock management and agricultural mechanisation. Four hundred and fifty six students enrolled in 2005 in further training programmes, giving an overall participation of 2,640 students.

Teagasc is also involved in delivering eleven higher level training programmes in conjunction with Institutes of Technology. These programmes cover such areas as: agriculture, horticulture, agricultural science, agri-business, equine studies and agricultural mechanisation. Two hundred and thirty seven students enrolled in 2005, while the total number participating was 670.

Access, transfer and progression are key components of all the above programmes. Participants in further training programmes can transfer on to higher level courses if they achieve a merit or distinction, and all higher level students can progress right up to Level 8 (honours degree level) on the National Qualifications Framework, and beyond, if they so wish.

Teagasc obtained a FETAC Quality Assurance Agreement as a training provider in 2005.

Development Units

Forestry, pig and horticulture development units were established in 2005 to provide integrated research and advisory services. These services were previously delivered as separate services by research and advisory directorates, respectively.

Forestry thinning technology transfer in action in Feakle, Co Clare.

Forestry Development
The forestry development programme promotes the planting and management of sustainable farm forests and the profitable production of quality timber and other products.

The forestry research programme included work on the selection and improvement of Irish Birch, agroforestry, improving Ash and veteran tree conservation. A two-year silvopasture trial, incorporating cattle and trees, was completed at Johnstown Castle.

During 2005, approximately 1,000 landowners established approximately 10,000 hectares of new farm forest.

Almost all courses run by Teagasc now contain a forestry module; for example, REPS and the Vocational Certificate in Agriculture courses.

The National Farm Survey has been reviewed to include forestry as a mainstream farm enterprise, with enterprise analysis undertaken similar to that for dairy and cattle production. The further integration of forestry into the National Farm Survey is ongoing.

Monitor Farm Forests were developed (in line with monitor farms for other enterprises) to demonstrate to farmers the benefits of thinning and sustainable forest management from the first thinning stage onwards. REPS farmers were shown that they gain extra benefits from establishing sustainably managed woodlands.

Advice, training and promotion activities were undertaken on wood fuel and related issues and their potential in increasing incomes from farm forests was promoted.

Pig Development
The pig development programme comprises an integrated research, advice and training programme tailored specifically for the sector. The objectives are to reduce the unit cost and improve the quality of pigmeat production, while reducing the environmental impact and improving animal welfare.

The pig research programme covers a wide range of topics related to nutrition, management and meat quality, with a continued emphasis on animal welfare, food safety and the minimisation of the environmental impact of production.

A study of poor growth rates of pigs on commercial farms was carried out in collaboration with INRA (Institute National de la Recherche Agronomique) in France and a project on varying feed to influence the number of muscle fibres at birth, hence affecting meat quality, was carried out with the Royal Veterinary College in London.

The assessment of *Salmonella* control measures on 12 commercial pig farms continued. Farms using supplementation of diets with organic acids appear to be most successful in reducing the proportion of *Salmonella*-positive pigs.

The provision of a business and technology service to contracted clients was the main advisory activity. The PIGSYS data processing system of performance monitoring is the basis of most business decisions. Analysis of records showed that pig producers using the system continue to perform strongly.

The 11th Annual Teagasc Pig Farmers' Conferences were held at three locations (Kilkenny, Longford and Fermoy).

Horticulture Development

A research project at Kinsealy focused on the nutrition of strawberries.

Four commodity teams representing the industry, the Department of Agriculture and Food and Bord Bia, were established and have been involved in leading the implementation and evaluation of the 2005 programme and planning the 2006 programme.

The total number of growers in Ireland is 1,012, producing product with a farm gate value of €276m. Teagasc has advisory contracts with 71% of these.

Horticultural advisors completed 140 business plans for grant aid applications. The major investment was in mechanisation, bringing about increased efficiency and improved facilities to comply with quality assurance standards. The total planned investment was €17m.

Mushrooms

While the number of mushroom producers declined from 177 to 130 in 2005, overall value of output remained constant at approximately €110m. The top 10% of growers are now achieving mushroom yields of 340kg/tonne of compost and some growers have reached 400kg/tonne of compost. These yields compare favourably with the best European producers.

Research projects are focused on quality and pathology issues with ongoing support being provided by the mushroom specialist advisors. Research at Kinsealy on compost ingredients and the incorporation of biological control measures has resulted in a commercial development with a major compost supplier. Substantial quantities of spent mushroom compost are now being incorporated in new compost formulations. A large contracted client is supported by the combined efforts of the mushroom team.

Nursery Stock

The nursery stock team has produced virus and bacteria-free nursery stock resulting in new healthy stocks of plants being available to the sector. Trials on the evaluation of laurel cultivars are being conducted in Warrenstown College, while an economic benchmarking exercise on nurseries has been completed. The national specialist advisor provided a consultancy service to the Kildare Growers, and also inputted to a discussion group and organised the national nursery stock conference and open day.

Twelve new plants were introduced by the owners of some of Ireland's leading nurseries at the national Teagasc/Bord Bia nursery stock conference. These new plants will increase the range of shrubs available to the landscape sector and improve returns for the nursery stock producer.

Soft Fruit

The Soft Fruit Specialist coordinated a research project at Kinsealy focusing on the nutrition of strawberries, combining this role with advising the Wexford Fruit Growers' Producer Group.

Integrated Pest Management (IPM) is now a key requirement of the fresh produce protocols for the major retail outlets. Teagasc put in place a nationwide pest forecasting system which was made available to 150 growers. The information is available on a weekly basis and is downloaded by growers using the internet and text messaging.

Vegetables

The main feature of the growing medium market is the increased resistance to the use of peat and the increasing interest in organic horticulture. A research project is underway on the evaluation of a range of materials as substitutes or partial substitutes for peat. The effects of adding possible disease inhibitors and growth enhancers e.g., *Bacillus subtilis* to growing media, were studied.

The use of a fungal parasite of the insect larva *Metarhizium anisopliae* to control vine weevil and *Sciarid* flies was investigated. The results of this project have been applied in the formulation of compost by the commercial sector.

Advisory

John Maher, Dairy Specialist Moorepark, speaking at the EBI winner open day in West Waterford.

Considerable progress was made in refocusing the Advisory Service to meet the changing needs of farmers and rural dwellers. In 2005, it was decided to increase the level of specialisation by allocating staff into the following programme areas: Business and Technology; Good Farming Practice; Rural Development; and Adult Education.

A new management structure of 18 Area Management Units (AMUs), as opposed to 28 counties (two in Cork and Tipperary), was fully implemented in 2005. This resulted in greater efficiencies and critical mass being achieved.

Client numbers increased by 20% to 40,700. Applications for the new Single Farm Payment Scheme and REPS 3 planning made up a substantial part of advisory activities. The newly launched Options for Farm Families Programme was mainstreamed into advisory activities and proved to be successful in engaging farmers and farm families in producing a strategy and plan for their future.
The service organised a number of major national events, including the National Economic Breeding Index (EBI) farm walk in Waterford, an ICT event in Kildalton and Single Farm Payment joint meetings with the Department of Agriculture and Food (12,000 attendees at 50 meetings).

Analysis of the Cattle Profit Monitor data shows that increased efficiency accounted for all of the 12.5-15% per annum increase in profits of the participating farms. This supports the need for a strong business and technology advisory programme for the cattle industry.
The major impact in 2005 on tillage farms resulted from the focus on reducing fixed costs, namely reducing conacre and land leasing costs. Teagasc advisors promoted the consolidation of entitlements. Conacre costs were reduced by

Advisory contd.

25%. This alone contributed €14m to tillage farmers' margins.

The delivery of a REPS service to 19,800 farmer clients had a significant impact on profitability and farmers' skills and ability to combine commercial farming activities with environmental enhancement.

An intensive advisory programme was implemented on cattle monitor farms with a view to increasing the number of monitor farms achieving unit cost of €1.30 per kg or less; 44% achieved that target (41% of suckler farms and 49% of non-breeding farms).

Advisors assisted 34,000 farmers on a one-to-one basis with Single Farm Payment Scheme applications. Overall, 44,761 farmers were assisted during the application period; 6,804 required further assistance with follow-up consultations on inheritance, over/under claims, errors, consolidation, etc.

Commodity Teams

With the objective of maintaining the relevance of programmes and the improved integration of advisory and research, seven commodity teams were set up in 2005, representing dairy, beef, sheep, crops, environment, rural development and farm management. This restructured programme development and implementation process had, as its starting point, a common research and advisory commodity team and finished with an implemented business plan.

The commodity teams provided the basis for programme development; they reviewed existing programmes and provided critical and constructive evaluation of research and advisory programmes. Up to eight farmers, from different advisory management units, six to eight industry executives, Department of Agriculture and Food staff, Directors of Advisory and Research, a Head of Research Centre, and an Advisory Programme manager made up the teams. All seven commodity teams met in the October/November period, when recommendations were worked on by the Joint Programme Development Teams. These teams consisted of representatives of research managers and staff and advisory managers and staff who refined the commodity team issues into actions within the relevant business plan.

Dairying

Dairy farm numbers continued to decrease, resulting in an average quota size increase to 222,700L. An improvement of 19% in profit was seen, as indicated by the Dairy Profit Monitors completed on monitor farms. An improvement in EBI of €6/cow was achieved.

There are 100 dairy monitor farms across the country. These farms were extensively used in 2005 for farm walks, discussion groups, training of advisors, evaluation of performance and evaluation of future options for farmers.

Over 5,000 farmers attended two open days in Moorepark and 2,000 attended a farm walk at the EBI winner's farm in Waterford. Over 1,100 farmers attended the National Dairy Conferences in Waterford and Cavan.

A new breeding chart was developed and sent to over 3,000 farmers; over 1,000 were returned for analysis. Over 900 cost control planners were issued and this should lead to an increase in the number of Dairy Profit Monitors in 2006 and in individual farm profits.

Drystock

Cattle and sheep production systems in Ireland from 1993 to 2004 were largely influenced and heavily dependent on animal-based direct payments. Product prices were stable or falling and production costs were increasing, so the challenge to maximise margins was a combination of optimising direct payments, while maintaining efficient production systems. At national level, the National Farm Survey shows that the profitability on cattle farms remained static from 2001 to 2004. However, drystock farms completing the Drystock Profit Monitor in 2005 increased profit by 44% over the same three

Advisory contd.

year period. The annual increase in profit on Profit Monitor farms ranged from 12.5% to 15% since 2001. The profit increase was obtained from a combination of more efficient premia capture and improved production efficiency. All of the 14.4% profit increases from 2003 to 2004 was obtained from increased production efficiency.

Almost 60% of the Drystock Profit Monitor farms achieved a very respectable profit of €600 per hectare or higher in 2004. Common costs (excludes labour, interest and land rental) per kg beef live weight have reduced by 9% over the period 2001-2004. Almost 60% of Drystock Profit Monitor farms achieved the target of common costs of €1.30 per kg or less in 2004.

The changeover to the Single Farm Payment in 2005 provided an incentive to drystock farmers to redeploy their management efforts exclusively towards better exploitation of grass and animal breeding and husbandry and to focus on production in line with market requirements. Efficiently run sheep systems that were at a disadvantage with the animal-based premia, compared with cattle systems, will have the advantage post-decoupling, as sheep can generate a higher margin excluding premium. Over 36% of sheep flocks with profit monitors achieved a gross margin in excess of €500 per hectare in 2004 and almost two-thirds of sheep enterprises retained 100% or more of premia receipts as profit in 2004.

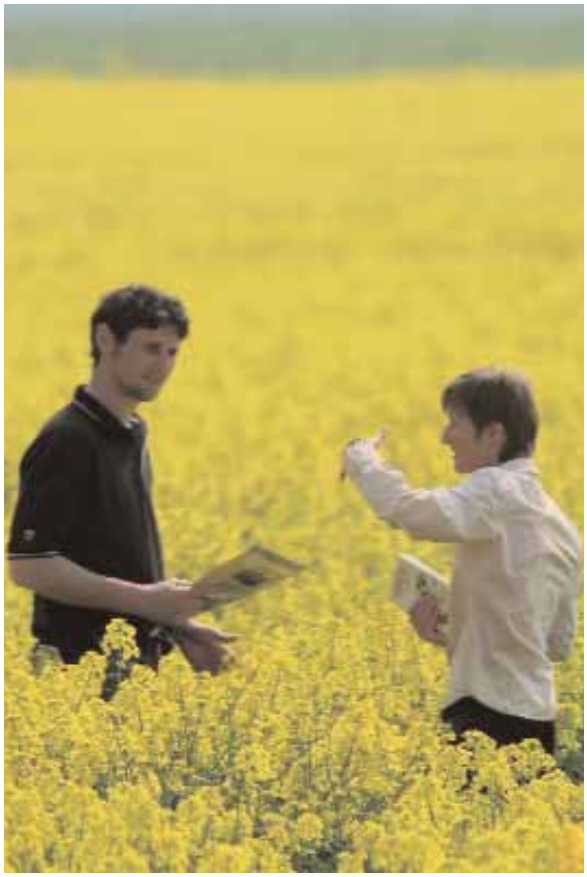
The National Farm Survey showed that the weaning rate for sheep increased by 5% in survey farms and 7% on sheep profit monitor farms.

Joint programmes continued with Dawn Meats Partnership, Wexford Marts, Galway Livestock Marts, GVM Livestock & Property Sales, and Monaghan Quality Cattle Group.

On profit monitor farms, 44% of cattle farms reached a target unit cost of €1.30 per kg or less. 49% of sheep farms achieved a weaning rate of 140% or more. Profit monitors were completed for 303 cattle and 109 sheep farms – data from 227 cattle and 66 sheep farms were included in a comparative analysis and results were published in September 2005.

Cattle specialists and ICBF worked together in the development of new calving reports and beef performance reports, which were made available online to clients who signed up for animal events recording. It is possible for the advisor to generate calving and beef production reports for individual clients and this data is very useful in providing individual advice and conducting discussion group meetings and farm walks/demonstrations. Almost 2,000 suckler clients signed up to animal events recording in 2005 and 1,300 had calving reports as of June 2005. Over 2,400 hits on the ICBF beef reports section were recorded by beef advisors in 2005.

Tillage



Teagasc researchers Paul Flanagan and Mary Coffey in an oilseed rape field at Oak Park. There has been a renewed interest in the use of land for crops for biofuels.

2005 was a difficult production year, with cereals yielding well below expectation and resulting in the production of 1.9 million tonnes. One hundred profit monitors indicated that tillage margins decreased due to decreased yields. In addition, decoupling of payments resulted in transparently low margins from grain production. Reform of the sugar regime indicated that sugar processing in Ireland faced a difficult future, but possibilities existed for bioethanol production and a reasonable compensation package.

Advisory contd.

There was renewed interest in new land uses, particularly for bioenergy. Oilseed rape for biofuels was evaluated and production guidelines and fact sheets were published. There was a drop in the number of potato growers, but remaining growers experienced increased profitability.

The priorities for the tillage crops advisory programme in 2005 included helping growers to optimise their Single Farm Payments and achieving top yields and quality at as low a cost as possible. Best practice technology and financial assessment was promoted and demonstrated on monitor farms and communications bulletins.

A computerised crop recording programme - e-crops - was developed and piloted on 60 farms. This will also provide useful data for the Profit Monitor programme.

The 10-day BASIS Plant Protection Course qualified 21 participants with FETAC certificates.

The Irish Grain Assurance Scheme (IGAS) was supported and promoted. Approximately 85% of grain traded is now certified as assured under IGAS. Close on 6,000 out of a total of 16,000 producers are now in the scheme.

Goal 2

Competitiveness, Innovation, Safety and Quality in Food

To support the development of a market-oriented, competitive and innovative food sector that meets the highest standards of quality and safety, particularly in the growing 'foods for health' sector.

The organisation implements research strategies spanning a range of science and technology areas for the food industry, particularly in meat, dairy and food ingredients and food safety and also provides a technology transfer service and training courses for the industry.

Food Research

The Food Directorate, embracing Moorepark Food Research Centre (MFRC – formerly The Dairy Products Research Centre) and Ashtown Food Research Centre (AFRC - formerly The National Food Centre), undertakes a comprehensive range of activities, including public and private research, training, consultancy and technical services. Programme themes include food safety, food ingredients, meat technology, prepared foods, dairy products and functional foods.

2005 was the first year in which the two food centres operated as part of the same directorate and it marked the beginning of a process of greater integration of the programme, focusing in areas of greatest common interest, namely, food safety, bioscience, food marketing, food ingredients and technology transfer.

The directorate devoted considerable time to strategic planning in 2005. A major new research initiative in 'Foods for Health' was prepared as part of Teagasc's new 'Vision' programme for research. The directorate co-ordinated two integrated project proposals for EU Framework Programme funding, namely 'Milk Bioactives' and 'ProSafeBeef'. Moorepark Technology Ltd. progressed a new development involving the construction of on-site customer modules to facilitate long-term users of the company's pilot plant services.

The minister for Agriculture & Food officially opened Moorepark Biotechnology Centre. The new centre will focus on the following research areas: foods for health, food flavour and food safety.

The laboratories also accommodated a new programme in molecular genetics to assist in the selection of improved livestock. Two of the new laboratories accommodate researchers from the Alimentary Pharmabiotic Centre – an SFI-funded joint programme with University College Cork.

Meat Research

Beef PACCP management system

The AFRC is testing a quality management system for the delivery of consistency in the eating quality (palatability) of Irish beef. The palatability of beef is a function of production, processing, and cooking method. At Ashtown, consumer trials started on palatability based on the Meat Standards Australia programme. The aim is to develop a Palatability Assurance Critical Control Point (known as PACCP) plan for the Irish beef industry taking on board what is already known, testing some emerging points and embracing new technologies which may contribute to the measurement of PACCPs.

Hot boning - the striploin is removed from the carcass within two hours of stunning.

Lamb

AFRC developed an automated method of bioimpedance analysis for the assessment of lamb carcass value. Both fat free lean weight and percentage fat were well predicted using this method. A provisional patent was filed and a consultant was engaged to study the market potential for the grading equipment. X-Ray CT is being investigated for its ability to measure lamb carcass composition in high lean meat index and control lambs and to determine the relationship between EUROP grades and carcass lean and fat content.

Food Research contd.

Healthier Pork Products
Ashtown Food Research Centre and Moorepark Pig Production Unit conducted two studies designed to increase Conjugated Linoleic Acid (CLA) levels in pork. CLA is a novel fatty acid with health-enhancing properties. One study involved producing sausages from lean and fat from pigs on diets supplemented with CLA. The second study involved adding CLA during the production process as part of the fabrication of sausages.

Value-added Meat Products
Strategies were developed for the optimisation of processing of added-value meat products. This has involved using under-utilised muscles, incorporating functional ingredients, physical pre-treatment of muscles, re-forming of muscles, 'heat & serve' processing regimes and packaging of products. These activities have been carried out in close collaboration with SME processors.

Traceability
Through collaboration with UCD, research to date has shown that stable isotope technology has potential in discriminating beef based on its dietary history and geographical location.

Dairy Products Research

Cheese
The Irish cheese industry continues to be dominated by Cheddar and low moisture Mozzarella production. Both of these are high volume commodity-type cheeses and, while they will likely remain the cornerstone of the industry into the future, there remains a need to diversify the product range into more specialised, high value cheeses. To this end, two projects were started during 2005. The first phase of each is geared towards an analysis of the UK market to identify cheese types with the greatest potential. One of these projects, funded through The Dairy Research Trust, is investigating the market for potential development in the area of high volume value added cheeses. Surveys of the UK market have been undertaken and opportunities for Cheddar variants have been identified. The second project, which is in collaboration with Coleg Menai in Wales, and which is funded by the Irish/Wales Interreg IIIA programme, will investigate the market for niche speciality meat and cheeses, in particular, in the UK.

Research has highlighted the need to diversify into more specialised, high value cheeses.

Food Safety
In June 2005, the AFRC launched the National Food Residue Database website and made it freely available to scientists, the food industry, regulatory personnel and the general public. The database serves as a source of data for use in establishing the residue status of food and may be used in risk assessment activities.

Mycobacterium avium paratuberculosis (MAP) is the cause of Johne's disease in cattle and is thought to be linked to Crohn's disease in humans. It is of concern within the dairy industry, because of evidence that it may survive the pasteurisation process. Research at the MFRC found that it is unlikely to do so.

Enterobacter sakazakii has recently been identified as a causative agent of neonatal meningitis. A new EU regulation, soon to be published, will require foods to be free of this pathogen. A Real Time Polymerase Chain Reaction (RT-PCR) method for identifying the organism was developed by MFRC in 2005.

A project aimed at providing support on quality-related issues to farmhouse cheese manufacturers was run. A FETAC-certified course on cheese manufacture was developed and run using the technical expertise and pilot plant facilities at MFRC.

E. coli O157:H7

Quantitative microbial risk assessment models give an assessment of the public health risk posed by a food-borne pathogen and determines how to strategically manage that risk in the food chain. In 2005, AFRC, in conjunction with University College Dublin, completed the first national risk assessment on a food-borne pathogen in Ireland (*E. coli* O157:H7 in beef burgers produced in the Republic of Ireland). Key stakeholders in the management of beef safety can now use the model outputs in the management of the risk posed by this pathogen.

Cattle are considered to be the main source of *E. coli* O157. However, recent research at AFRC shows that sheep (2.4%) and pigs (0.24%) are also carriers of this pathogen. The phage types (PT32 and 8) and initial genetic profiling for known and putative virulence factors indicate that they are potentially capable of causing human illness.

Research on factors affecting survival and transmission of *E. coli* O157:H7 in cattle have shown that the inoculation dose for *E. coli* O157:H7 is low and that the properties of the pathogen are changed following passage thorough the animal gut, leading to enhanced survival, which aids in the transmission and persistence of these bacteria on the farm.

A further finding of major significance was the detection of numerous non-O157 cytotoxic VTEC serovars not found previously in Irish cattle, or in the environment. These were also shown to be multi-antibiotic resistant. This discovery has implications regarding the true incidence of disease from cytotoxic *E. coli* in Ireland and may have future public health implications.

Functional Foods

Conjugated Linoleic Acid (CLA) is a naturally occurring component of milk fat with beneficial health properties. The MFRC has been active in research on the compound for many years. In 2005, probiotic microbes were genetically engineered to produce CLA – a process that has been patented. In addition, a high CLA cheese was produced. An Italian university is using this cheese in the first major human trial of its type to investigate the health effects of CLA.

At MFRC, work was also carried out on the use of prebiotics in infant formula. Prebiotics are non-digestible carbohydrates that promote the growth of bifidobacteria in the intestine.

A new research programme commenced during the year, which aims to develop the technological base for manufacture of formulated foods targeted at the obese.

Researchers at AFRC, in collaboration with Grange Research Centre, have focused on improving the health-giving properties of Irish beef. Grazing cattle supplemented with a combination of sunflower oil and fish oil, in conjunction with Vitamin E, has been shown to result in highest levels of CLA in the striploin. A high-CLA minced beef product has been prepared for feeding to ob-ob mice - a rodent model of human obesity, diabetes and insulin resistance. This is being incorporated into mouse feed for comparison with mouse feed fortified with synthetic CLA and vaccenic acid.

Other Food Products

Gluten-free Breads

Intolerance to gluten in humans is known as coeliac disease. Previous studies have shown that gluten-free breads have a short shelf-life. Using a novel amylase enzyme from Switzerland, researchers at AFRC were able to increase crumb softness by about 50% and extend the shelf-life of the bread by up to four days.

Dr Eimear Gallagher, Ashtown Food Research Centre, is involved in gluten-free bread and organic products research.

Fish

Supplies of conventional fish species are dwindling and under-utilised species are becoming more important. A project which looked at adding value to under-utilised species via freeze-chilling and modified atmosphere packaging showed that this combination is suitable for extending the shelf-life of pre-packaged portions of several fish species.

Developments in Biosciences

Nucleic acid analyser at Moorepark used to measure DNA quality.
Pictured is Olivia McAuliffe, Research Officer in the Biotechnology Department.

In 2005, MFRC finalised a strategy for its animal biotechnology programme, which resulted in the integration of scientists from both centres on the Moorepark campus.

Large numbers of animals have been screened for genetic variants using a variety of conventional and non-conventional techniques. Several novel Single Nucleotide Polymorphisms (genetic markers), potentially associated with important phenotypes, such as body score and mastitis susceptibility, have been identified.

MFRC has also been looking at gene expression, for example, during a mastitis episode, using RNA techniques. The centre has optimised the technique for a variety of sample types, including blood, tissue and milk somatic cells. The centre holds a large DNA depository, including samples from over 3,500 cows (five different commercial breeds), 220 progeny tested bulls and 180 pigs.

The use of a probiotic culture (*Lactobacillus lactis*) for mastitis treatment as an alternative to the use of antibiotics was investigated.

Meat Biosciences

A Molecular Biology and Meat Quality Research Programme has been established at AFRC. Progress has been made in the application of new biotechnological techniques to meat quality research. Molecular signatures in the muscle associated with the delivery of consistent quality meat are being investigated. Genes for tenderness, intramuscular fat and water holding capacity were selected and cDNA libraries were created, which will be used to identify and confirm genes associated with quality. This research is part of an ongoing collaboration with UCD and the National Diagnostic Centre (NDC), Galway. DNA markers continue to be examined both for genotype frequency and for associations with eating quality in the Irish herd. Proteomics studies have revealed potential biomarkers for quality. These markers may form the basis of future immuno-based diagnostic tests for quality. An immunoassay for one potential marker of beef tenderness was also developed in conjunction with the NDC.

Consumer Research

As part of a 39-partner programme across the EU, the AFRC team examined consumer concerns about animal welfare, the type of information demanded, and effective communication and information strategies.

The AFRC continued work in the consumer lifestyle area with a study of Food Related Lifestyle (FRL) segments in the speciality food markets in the UK. The FRL is a tool that is used to segment food markets on the basis of consumer attitudes to the purchase, preparation and consumption of food products.

Technology Transfer and Training

Much of the technology transfer from MFRC and AFRC was conducted through confidential commissioned research by food companies. MFRC engaged in numerous biotechnology contract activities with national and international food and ingredient companies.

Use of Moorepark Technology Ltd., which spearheads MFRC's technology transfer programme by food companies, increased. Most of this was accounted for by multinational companies and the dairy industry.

AFRC continued to provide a specialist technical training programme for the food industry and food regulatory organisations. In 2005, over 1,500 personnel were trained, mostly at management level.

Staff developed new training courses in food legislation and completed training for the FÁS Meat Industry Training Standards for the pork sector. Work commenced on a training programme for the sheep and lamb sector. HACCP and Food Safety Auditor training was provided for over fifty inspectors from the Department of Agriculture and Food in the areas of dairy, poultry and animal feed. This training was provided for the purpose of implementing new EU legislation, the Hygiene Package (EC 852/853), which applies from January 2006.

The AFRC developed a food safety and hygiene training course for the horticulture sector in Russian, Latvian and Polish. The course was also made available to other food sectors employing non-nationals.

Staff actively participated in technical committees at the following organisations: NSAI, FSAI, FÁS, Bord Bia and Enterprise Ireland.

The Food Research Directorate produced a large number of publications and reports, including 104 publications in international scientific journals, of which two from MFRC appeared in the prestigious journals *Proceedings of the National Academy of Science* and *Nature Reviews*.

Goal 3

Sustainable Systems of Agriculture

To develop systems of agriculture and food production that are sustainable in terms of the environment, animal welfare, occupational safety and the work environment.

Teagasc Research strategies aim to generate and transfer new scientific information and technologies to the agriculture sector, enabling farmers to farm in an environmentally sustainable manner, promote the preservation of the rural landscape, improve the welfare of farm animals and contribute to the development of a safe and healthy working environment.

Best practice in relation to occupational safety, animal welfare and environmentally sustainable farming practices are included in all training courses.

Advisory strategies are undertaken to support the development of sustainable farming through the provision of a REPS planning and support service, nutrient management planning and farm waste management planning services, and the transfer of technologies from research.

Agriculture Research

Nutrient Efficiency

Agronomic and environmental research on phosphorus (P) and nitrogen (N) is directed towards maximising nutrient efficiency to allow farmers to achieve economically optimum yields with minimal losses to the environment. Recent research findings suggest that agriculture could make further reductions in P usage without compromising grass yields. Results of a national four-year soils trial suggest that P requirements on seven out of the eight soil types are very low in Index 3. The experiment showed that soil types varied in their yield response to the level of P fertilisation. However, if both grass yield and herbage P level were taken into account, one could derive fertiliser P advice for different soil P levels which would be sustainable from both the agronomic and environmental viewpoint. These research results were used to support the preparation of Ireland's Action Programme for implementation of the Nitrates Directive.

The outcome of the nitrogen research is less certain, as the quantity and timing of nitrogen released from soils by mineralisation was found to be very dependent on both soil type and microclimate. The capacity of soils to supply background N was classified into three broad groups as follows:

(i) soils with high capacity that can mineralise and supply an average of 165 kg/ha of N;

(ii) soils with a medium capacity to supply background N levels of 140 kg/ha of plant available N; and,

(iii) soils with low capacity to supply background N levels averaging 115 kg/ha based on the 50% lowest releasing soils.

This classification will be considered as a basis for new recommendations in the next edition of the Teagasc nutrient advice manual.

Differences between soil types was found to be a key issue in relation to the use of phosphorus and nitrogen for grassland and the outcome of this research will enable further efficiencies to be achieved in the use of these nutrients.

Greenhouse Gases

Research on greenhouse gas emissions showed that grassland is a sink for carbon and this could become an important factor in Ireland's greenhouse gas accounting. Research has continued to highlight the importance of urine patch deposition in autumn when there is reduced uptake by grass and, consequently, there are increased nitrogen fluxes to air and water.

Agriculture Research contd.

Nutrient Losses to Water

The importance of green cover on tillage ground during autumn and winter has been demonstrated through reduced nitrate leaching and potential utilisation of sequestered nitrogen in spring. Preliminary research has begun to evaluate the role of soil in protecting drinking water supplies from pathogenic microorganisms and, in high risk situations, there is a real possibility of pathogen transfer to drinking water.

Landscape Enhancement and Biodiversity

The Burren, Co Clare is Ireland's most extensive tract of limestone grassland.

Collaborative research between UCD and Teagasc has, for the first time, successfully used satellite imagery to survey and map the extent of broad habitat types within the Burren, Co. Clare. The map also provides the first estimate of the area of the Burren affected by scrub encroachment – this being one of the most significant threats to the EU priority habitats in the region. Comparisons between this survey and similar ones in the future will allow changes in habitats in the Burren to be measured.

Research has helped to identify and select quantitative environmental attributes for a monitoring programme that may be integrated into an environmental evaluation of REPS. Such data would assist the evaluation process in its effort to identify the extent to which the scheme objectives are being fulfilled and identify any changes that may be required to bridge the gap between policy aims and policy outcomes or impacts. Demonstrating that agri-environmental payments produce the intended level of environmental benefits is necessary to demonstrate value-for-money to national and EU taxpayers who fund the schemes and to provide evidence of the environmental effectiveness of such schemes.

Education and Training

Farm safety

The 2005 Farm Safety Advisory and Training Programme sought to enable farmers to adopt best practice farm safety standards and comply with statutory health and safety requirements.

A national seminar on occupational health and safety was held in Ennis, Co. Clare, in conjunction with the Health and Safety Authority and the Centre for Safety and Health at Work, University College Dublin.

A new farm safety project was launched in November in conjunction with the Health and Safety Authority. The project will support the National Farm Safety Plan objective of cutting farm accidents by 50%, and will run for a three-year period. The initiative aims to ensure that farmers with three or less employees complete and implement a new comprehensive 'user-friendly' farm risk assessment, as required by new legislation.

Farm safety was featured at a number of major Teagasc events and at the National Ploughing Championships. Farm safety specialists organised a range of awareness activities and relevant training was delivered to about 4,350 young and adult farmers. Specialists participated in the activities of the Health and Safety Authority (HSA) statutory advisory committee on farm safety. A specialist acts both as the chair of the committee and of an engineering and workplace design sub-committee.

Advisory

In 2005, the environment advisory programme focused on improving the efficiency and delivery of services to REPS clients and maximising the number of scheme participants. Particular attention was given to water quality protection by promoting efficient nutrient use and better manure management. The maintenance and enhancement of biodiversity also received special attention.

Though services concentrated primarily on clients, a significant 'public good' programme geared to providing practical information on 'good agricultural practice' and raising environmental awareness among farmers generally was also delivered. This was achieved through public events, the farming press and local radio. Teagasc environmental expertise was also made available to a wide range of governmental and non-governmental organisations.

REPS

During the year, the REPS planning services supported clients in claiming an estimated €107m in REPS payments. A record 23,000 clients availed of intensive environmental services. There were 19,800 REPS participants - an increase of 2,000 on 2004. The organisation prepared 4,500 REPS 3 plans and a further 3,000 farmers received specific services relating to nutrient and manure management and the protection of natural heritage. Over 4,000 clients attended over 130 REPS 20-hour training courses.

The national REPS conference was held in November and focused on the consultative process that will determine the shape of REPS 4. REPS 3 is due to finish at the end of 2006. REPS 4 will be expected to deliver more in terms of environmental enhancement. Clearly, new thinking is necessary to come up with innovative measures that will attract sufficient funding to maintain the current level of interest among farmers. Teagasc undertook a major internal consultative process and presented its submission on REPS 4 to the Department of Agriculture and Food in December.

A new web-based REPS planning system – eREPS – was introduced in June. Teagasc developed the system in conjunction with the Department of Agriculture and Food and provided training for 140 staff, who are now using the system.

A Teagasc hedgerow planting demonstration.

Nutrient Management

The 2005 programme focused on minimising nutrient losses from agriculture to water. More than 1,050 Farm Waste Management and 500 Dairy Hygiene schemes were processed, which involved advice on farmyard and building design, manure management and planning control. In addition, 280 nutrient management plans were prepared for clients to meet the requirements of agricultural bye-laws, local authority planning conditions and the scheme for accelerated capital allowances for pollution control works.

The preparation of Farm Waste Management and Dairy Hygiene scheme plans supported grants worth an estimated €15 million to clients. Improvement in river water quality, first reported by the EPA in 2000, was sustained in recent reports. Advisors provided fertiliser advice to 5,000 REPS and non-REPS farmers in 2005 on foot of laboratory analysis of more than 40,000 soil samples.

Environmental cross compliance, including with the Nitrates Directive, has implications for the great majority of farmers into the future. A major programme objective was to raise

Advisory contd.

farmer awareness of the new environmental implications and requirements and provide specific assistance. One hundred and twenty business and technology advisors received specific training to enable them to facilitate discussion on these issues at farm walk and discussion groups. These activities served as a basis for more thorough work required to enable clients to avail of the new Farm Waste Management Scheme in 2006.

The development of low cost wintering and slurry storage systems is of considerable interest to farmers, particularly those who wish to increase the scale of their businesses. The application of these systems was monitored at farm level in conjunction with the Research Directorate.

Countryside Management Programme

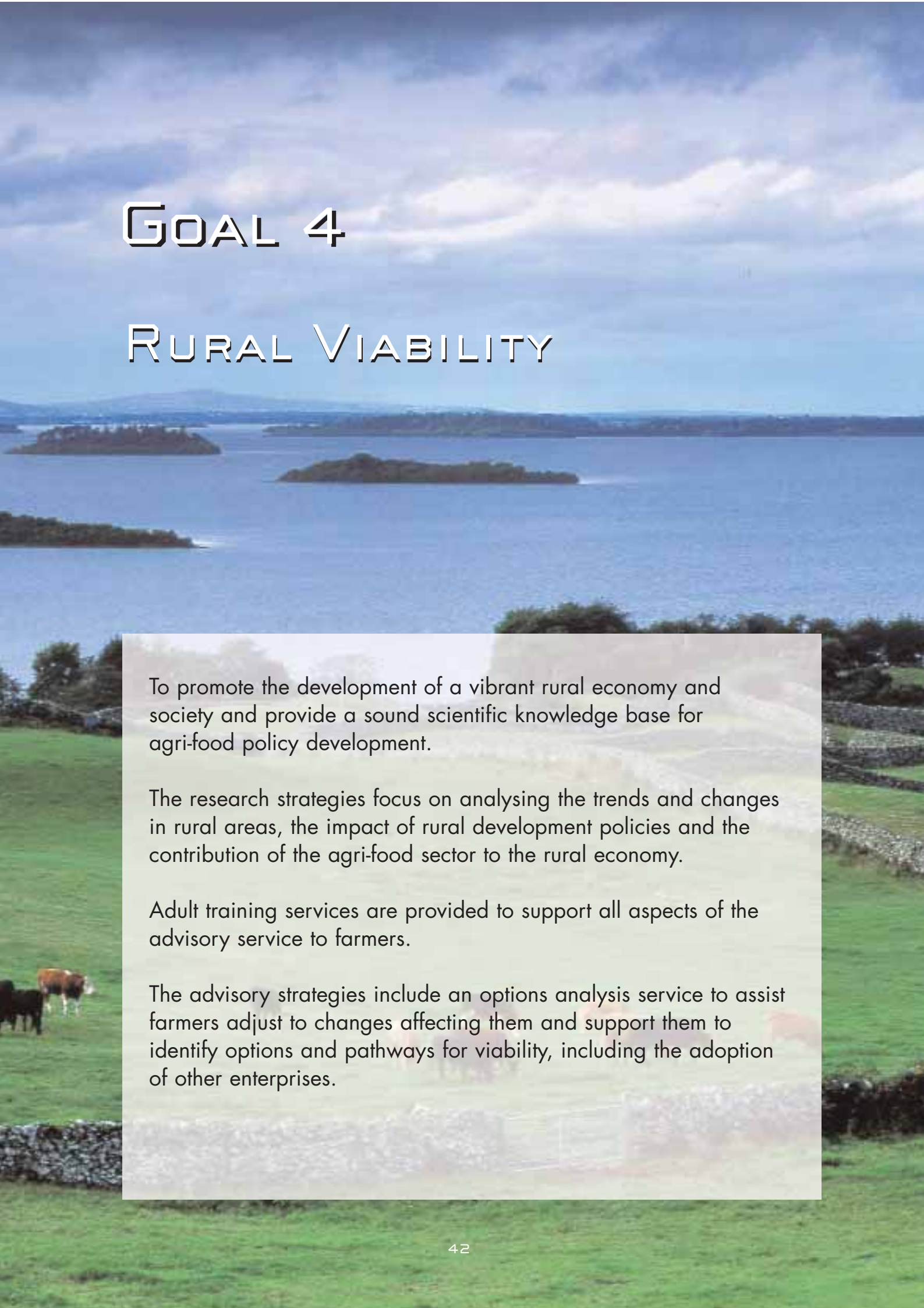
The National Biodiversity Plan has highlighted the need for natural heritage protection. The compulsory biodiversity sections in REPS 3 reinforce this in a practical way. The programme, including countryside management activities, underpinned the continuation of sustainable farming by promoting complementary income-generating activities, including participation in REPS.

Countryside management activities undertaken in the 2005 programme included:

- The Burren LIFE Project – This is a major five-year environmental project awarded to the National Parks and Wildlife Service (NPWS), with Teagasc as principal partner;
- The Termoncarragh LIFE Programme was completed. A seminar involving all partners reviewed the programme findings in September. Six advisory leaflets were developed;
- The Shannon Callows Study on prescription costings was completed for NPWS;
- Teagasc participated on the LINNET (REPS Supplementary Measure) Working Group;
- Teagasc participated in the Networks for Nature Hedgerow Survey Steering Group;
- The implementation of the REPS Biodiversity Options was monitored at farm level;

The REPS 3 programme included compulsory biodiversity sections.

- Four agricultural Colleges held Mechanical Hedgecutting Courses for contractors; and,
- A Teagasc planning team was trained for the new NPWS Compensation Scheme.



Goal 4

Rural Viability

To promote the development of a vibrant rural economy and society and provide a sound scientific knowledge base for agri-food policy development.

The research strategies focus on analysing the trends and changes in rural areas, the impact of rural development policies and the contribution of the agri-food sector to the rural economy.

Adult training services are provided to support all aspects of the advisory service to farmers.

The advisory strategies include an options analysis service to assist farmers adjust to changes affecting them and support them to identify options and pathways for viability, including the adoption of other enterprises.

Rural Economy

National Farm Survey

Results from the National Farm Survey showed that average family farm income increased from €14,765 per farm in 2003 to €15,557 in 2004, an increase of 5.4%. However, the income on full-time farms increased by 8% in 2004 to €30,650. As in previous years, dairying generated the highest returns, with an average income of €34,421 per farm, compared to €10,966 and €7,286 per farm on sheep and beef rearing farms, respectively. Direct payments continued to underpin farm incomes, contributing 87% to family farm income in 2004. Direct payments, as a percentage of farm income, ranged from 31% on specialist dairy farms to 137% on sheep farms and 164% on farms with other beef systems. The incidence of off-farm employment increased from 50% in 2003 to 52% in 2004 and, overall, on 78% of farms, the farmer and/or spouse had some other source of income, resulting in only 20% of farms being soley dependent on farming solely for their livelihood. The 2004 survey showed that, on average, women contribute 12% to total labour input in farming, ranging from 5% on tillage farms to 14% on dairy farms.

Competitiveness

Results from ongoing research on the competitiveness of Irish agriculture showed that the position for milk production, compared to other EU and international milk producing countries, was very positive when total cash costs were considered. However, as the opportunity costs of owned resources are not included in 'cash cost' calculations, the competitive position can only be considered to be valid in the short to medium term. Total economic costs, which include imputed charges for owned resources, should really be considered to examine the longer term outlook for the competitiveness of the sector. Using this measure, the competitive ranking for the Irish dairy sector slipped relative to the other countries. These findings could be considered as a warning signal for the future competitive performance for the average sized Irish dairy farm. However, the larger Irish dairy farms did manage to maintain their competitive position even when total economic costs were considered.

Rural Enterprises

Government policy aims to build a competitive and environmentally sustainable rural economy. It seeks to develop vibrant sustainable communities, with a quality of life that will make them attractive places in which to work and live. A foresight study undertaken by Teagasc, in conjunction with the National University of Ireland, Maynooth and University College Dublin, sought to assess whether these goals were achievable, given current trends, and identify initiatives that could enable Ireland to reach these objectives. The research found that current trends, particularly globalisation and unbalanced regional development, threaten the economic viability and long-term sustainability of rural areas. This will manifest itself in the continued decline in the numbers of full-time farmers and restructuring of the agri-food sector. The absence of employment opportunities in rural areas will result in long-distance commuting on the part of rural dwellers to maintain their economic viability. This trend will, however, have negative social and environmental consequences. The report recommended that existing strategies, including the National Development Plan and the National Spatial Strategy, be implemented in full.

Furthermore, the report stressed the necessity of establishing a Rural Policy Implementation Group to facilitate efficient resource use in developing a competitive and sustainable rural economy, the development of regional innovation and research systems to support the development of a knowledge-based rural economy and provision of education and training programmes to raise the human resource capabilities of rural businesses, and of rural populations generally.

The foresight study highlighted the need for the provision of education and training programmes to raise the human resource capabilities of rural businesses.

WTO Reform

Teagasc economists conducted an analysis of the impact of a possible World Trade Organisation (WTO) agreement on Irish agriculture. The analysis showed that, when compared to a continuation of current policy, WTO reform would lead to lower agricultural output prices, lower volumes of agricultural output and a drop in agricultural sector income in Ireland. With WTO reform, the total value of agricultural output produced in Ireland by 2015 is projected to be 8% lower than it would otherwise be. The value of cattle sector output would decline 13% and that of dairy sector by 12%. With WTO reform, it is projected that by 2015, agricultural sector income becomes more dependent on subsidies. Irish agricultural sector income would be reduced by 11% and by that stage subsidies would account for over 84% of income.

Adult Farmer Training

A rural viability course was completed by 961 participants, 343 of whom were female. The Advisory Service provided a variety of open days, short courses, 25-hour courses, 50-hour courses, seminars and discussion groups, covering diverse areas including: organic farming, rural tourism, business planning, free range poultry, sport horse production, goat and deer. Over 3,000 attended these courses.

Organic Farming

The concentration was on developing 14 organic demonstration farms. A number of open days were held and attended by 842 organic farmers, or farmers interested in converting to organic.

Three courses of 25-hour duration were held during the year to help farmers develop an organic system and, in one case, to demonstrate and teach better methods of organic production. A booklet on organic farming, dealing with different systems, management and organic practices, was published.

Pictured examining a top quality perennial ryegrass/white clover sward, which is being grazed by Jimmy Mulhall's organic dairy herd, are (from left): Ger Shortle, Johnstown Castle; Fintan Monahan, Teagasc, Co. Laois; Jimmy Mulhall, host farmer (standing); Eddie McAuliffe, Department of Agriculture and Food, Organic Unit, Johnstown Castle; and John Twomey, Teagasc, Co. Cork.

Rural Tourism

Rural tourism has been undergoing major change, with growth now confined to providers who can offer a niche product, such as a real farm experience or walks. During 2005, the major achievement of the service, in partnership with LEADER and the Department of Social and Family Affairs, was to bring together all of the organisations representing rural tourism under a single banner - the Rural Tourism Federation. Three 25-hour courses were conducted for product providers, attended by 59 participants. Inputs were provided to LEADER and County Enterprise teams.

Business Planning

This was a new initiative during 2005 and has been very successful. The service focused on farm families who had indicated during the Options for Farm Families Programme that they wanted to start a small business. Those families were invited to a 25-hour course, where each analysed their business idea and were assisted in producing their own business plan. Five courses were held, attended by 103 participants.

Minority Enterprises

Two 25 hour courses were provided for 26 people who wanted to start a poultry enterprise. Four short courses were provided for 32 farmers to enable them qualify for the Bord Bia quality mark and to provide produce to farmers' markets. The Poultry Specialists also provided visits and consultation in an advisory capacity to poultry producers where demand was forthcoming.

The objective of the equine production programme was to improve the skills of producers and add value to the product. Fifteen 25-hour modules of training on the management of a sport horse enterprise were delivered to 348 farmers. Three skills courses were conducted over 50 hours each, where 39 farmers brought horses to learn new skills and those farmers will be able to train their own horses in subsequent years. Eight major seminars were held, attended by 1,200 farmers.

The goat production programme focused on development visits and the production of three newsletters. One 25-hour course was provided on management practices to 25 people.

The deer programme focused on the 200 deer producers. Four groups, comprising 39 deer farmers, completed the Options for Farm Families Programme. Nine groups met in discussion to promote management practices and a major drive was conducted with the three processing and marketing outlets in an effort to put venison production on a sound basis. Producers are now registered in the Quality Assured Venison Scheme.

Advisory

The Options for Farm Families Programme attracted 2,538 farmers and encouraged them to look at alternative enterprises.

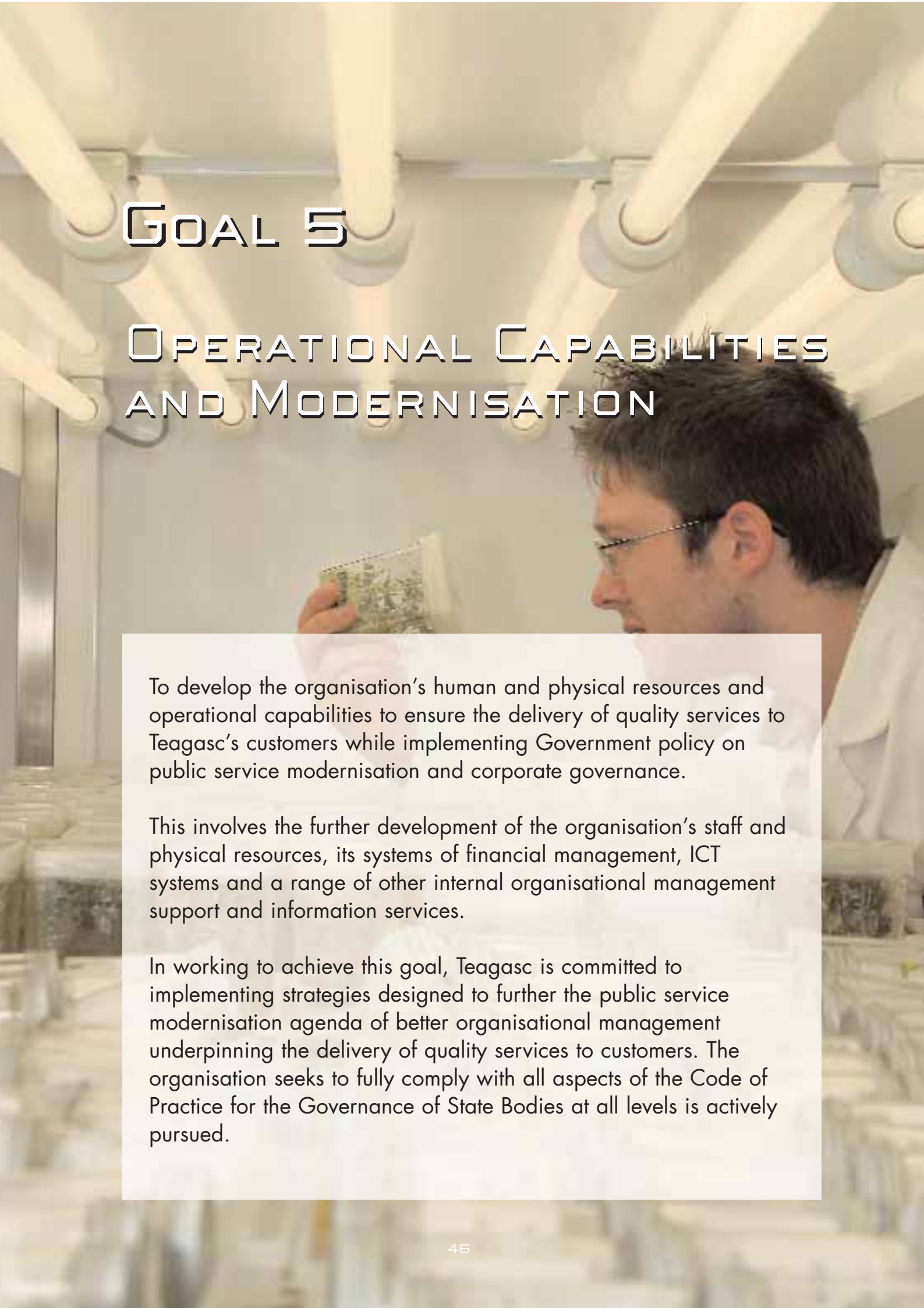
The advisory strategies undertaken in 2005 supported the development of sustainable farming through the provision of REPS planning and support services, nutrient/animal manure management planning services and the transfer of environmental technologies from research.

The Options for Farm Families Programme attracted 2,538 farmers (previously called Planning Post Fischler Programme), of whom 1,562 produced a business plan. Twenty-five per cent of those farmers planned to change or improve their financial management and 32% took steps to improve enterprise efficiency. Five per cent of participating farmers opted to develop a forestry enterprise, while 27% were either in REPS or agreed to join REPS. Four per cent undertook to develop a specific supplementary farm enterprise and 7% agreed to seek out either a full-time or part-time job.

In a new North-South cooperation venture, a further five courses were provided to 150 families in the border counties to prepare participants to avail of grant aid for small businesses under the EU Peace and Reconciliation Programme. Eighty-two families from southern border counties submitted business plans for small business ideas and have been sanctioned for grant aid. Mentoring in starting up a business is also provided as a follow on to the business course. In addition, three major networking seminars were held to foster relationships on both sides of the border; these were attended by 600 people. Advisory personnel from the Republic of Ireland and Northern Ireland attended six events to encourage even greater involvement in the initiative.

Quality of Life

Research was undertaken to establish a baseline measure of the quality of life of farm families who are participating in the Options for Farm Families Programme and to compare the quality of life of farm families with that of non-farm families. To complement this research, a series of 17 case studies was compiled in 2005. These included studies of farm families involved in all the major farm enterprises, full-time and part-time farming and farms with various supplementary businesses. The studies outlined the families' situation, their concerns, their plans and their experiences of the programme.



Goal 5

Operational Capabilities and Modernisation

To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

This involves the further development of the organisation's staff and physical resources, its systems of financial management, ICT systems and a range of other internal organisational management support and information services.

In working to achieve this goal, Teagasc is committed to implementing strategies designed to further the public service modernisation agenda of better organisational management underpinning the delivery of quality services to customers. The organisation seeks to fully comply with all aspects of the Code of Practice for the Governance of State Bodies at all levels is actively pursued.

Human Resource Strategy

Following the transfer of the Head Office from Dublin to Carlow, Teagasc has reorganised its Human Resources (HR) Department. The HR Strategy produced in 2004, provided the blueprint for the reorganisation.

The HR Department initiated a HR business process improvement programme, covering recruitment processes, employment contracts, monitoring of increments, work flows and document management. In addition, the department published an 'Invitation to Tender' for a modern integrated HRIT and Payroll System.

The Department established an Employee Assistance Programme (EAP) at the end of 2005. This service is provided on contract by an external provider and is available on a national basis. Through the EAP service, free professional counselling and information services are available to employees and their families.

On the industrial relations front, the restructuring of the organisation and certain services resulted in six Labour Court hearings during the year and a number of referrals to the Labour Relations Commission, Rights Commissioners and the Employment Appeals Tribunal.

Partnership

Under the terms of Sustaining Progress, Teagasc is committed to extending and deepening the partnership process in the workplace. Partnership is the coming together of staff representatives, management and unions to share information, discuss present and future issues and plans, reach consensus and make recommendations for the resolution of problems.

To achieve this, a national Partnership Committee was established with the aim of managing change, achieving higher performance and bringing about a better workplace. The process is centred on a Partnership Committee and is driven by a Partnership Officer. Training was provided for the Partnership Committee and an action plan agreed and progressed. Nine sub-groups have been established, as required, to deal with specific issues. A comprehensive series of meetings was held throughout the country at which members of the Partnership Committee explained to staff the role of Partnership in the organisation.

Staff Training and Development

Teagasc established a new Staff Training and Development Unit at the beginning of 2005. It has responsibility for monitoring and supporting the operation of the Performance Management and Development System (PMDS) under the Modernisation Agenda. A key objective for the Unit in 2005 was to support a full and more uniform operation of PMDS and to better integrate the PMDS process with the staff training process. As a result, close to 2,000 training proposals were referred from the process and integrated into the training plans.

Each of the six directorates takes responsibility for the development of staff training plan for its area of responsibility. These plans take into consideration the strategically important training requirements of the directorate and the training requirements referred from the PMDS process.

Training plans consist of a combination of medium to longer term training and upskilling of staff. This is to ensure that plans meet the future requirements of the organisation, combined with the acquisition of the skills and training for new applications and systems necessary to carry out normal duties in a more effective manner.

Induction training, work organisation, management development, PMDS facilitation, IT training, health and safety, customer care and financial management/good governance, all featured in the training programmes. Third-level degree and diploma courses were supported for over fifty staff.

A Partnership Committee was set up with the aim of managing change, achieving higher performance and bringing about a better workplace.

Quality Customer Services

Significant progress was made in developing the initiative, including the publication of a Customer Charter and a Customer Service Action Plan. The charter outlines the commitments the organisation is making to its customers regarding the standards of service they can expect; the Action Plan includes the measures the organisation is taking to ensure these commitments are met.

In 2005, the organisation established thirteen commodity teams, involving farmers and industry representatives, to cover the dairy, sheep, tillage, cattle, environment, rural development, management and technology, pigs, forestry, fruit, mushroom, nursery stock and vegetables commodity areas. These teams provide a stakeholder input to the organisation's programme development and review processes in agriculture research and advisory services. They, therefore, influence the strategic direction of business plans, programme content and delivery, evaluation and quality of customer service.

Thirteen hundred staff attended Quality Customer Service workshops, providing feedback on how customer service can be improved. Area Management Units are incorporating this feedback into their 2006 business plans.

Business Planning

Teagasc implements an internal business planning process. All directorates and management units prepared business plans in 2005 based on the organisation's Statement of Strategy 2005-2007. These plans were analysed and the templates on which they were based were revised for 2006 to achieve a more consistent format, better integration of business objectives with the Statement of Strategy and the incorporation of actions to meet statutory and corporate governance guidelines. All managers received training on the use of the revised templates.

Risk Management

Risk management was incorporated into business planning in 2005 for the first time. Each business unit compiled a risk register, identifying the major risks in achieving its planned objectives. The risk management measures in place were documented and additional measures identified to better manage the risks.

The Management Committee identified the most serious corporate level risks facing the organisation and the strategic control actions to be implemented. The Authority approved the corporate level risk register.

Finance

The organisation delivered the 2005 financial statements within the 28 February deadline and received a clean audit report from the Comptroller and Auditor General. Payroll was relocated from Kinsealy to the new Head Office at Oak Park during the year. The number of staff and suppliers paid electronically increased following a major campaign in the last quarter of the year.

Finance staff took a leading role in the development of the payroll element of the new HR and payroll project, which got underway in 2005.

Building Programme

The new conference and training facilities at Ashtown Food Research Centre.

Teagasc has an extensive property portfolio, some of which is no longer required for its core programmes. During 2005, the research farm and offices at Ballinamore, Co. Leitrim and offices at Bailieboro, Co Cavan, Cork city, Wicklow and Loughrea, were sold. These sales realised €6.5m, which was reinvested in improved facilities and infrastructure elsewhere in the organisation in order to improve services.

A fund of over €8m was made available from the State Grant-in-Aid (€4.5m) and from the sale of assets to improve facilities. The greater part (€6.5m) went towards a new conference and training facility at AFRC, office facilities at Johnstown Castle, additional office facilities for research and advisory services at Athenry, new office and laboratory facilities for crops research staff at Oak Park and new milking and ancillary research facilities at Moorepark.
Associated private colleges were allocated €0.5m for improvements to training facilities. The remaining €1m was spent on 50 small capital development and maintenance projects.

Information and Communications Technology

Following the completion of an ICT strategy in 2002, Teagasc developed an ICT plan aimed at addressing the serious shortcomings identified. As part of this plan, €4.5m was spent on Information and Communications Technology (ICT) services and capital investment in 2005. The ICT Unit has a close working relationship with all other areas of the organisation. The Unit reports to an overall ICT Committee, which oversees and approves all major projects, and a Managers' ICT Forum, which ensures that the needs of all the different groupings in the organisation are recognised. Amongst the major projects advanced during the year were:

- The design and development of a robust and secure infrastructure, using industry standard components, to service the needs of the organisation's staff, students and postgraduate researchers located at 100 offices and centres throughout the country.

- The first stage of the implementation of the infrastructure was carried out through pilot projects involving the complete updating of all ICT infrastructure at Kinsealy and Moorepark. These were completed during the year.

- Major ICT systems in business areas, including a Laboratory Information Management System (LIMS) in both Grange and Johnstown Castle Research Centres, ICT support for the selection of an integrated HR and payroll system, selection of a business partner for the redevelopment of the corporate websites and the advancement of the new National Farm Survey System.

- Of particular note was the completion of a new electronic system to support REPS planning (eREPS), which was led by Teagasc and funded by the Department of Agriculture and Food. This system was rolled out in July 2005 and has been of major assistance to both Teagasc and private REPS planners.

Public Relations and Customer Communication

The Public Relations and Communications Department supported and promoted an extensive range of events and activities during the year. The good relationship that Teagasc has developed with the agricultural, business and food press was further enhanced, with good coverage of over 50 events and 99 press releases issued. These were supported by regular one-to-one communication with the key people in the media.

A nationwide pool of photographers was established to cover the numerous events organised by staff around the country. Conferences, farm walks and other public events played an important role in getting detailed material out to our target audiences and provided a forum for feedback to flow from our customers.

The national tillage conference and the two dairy conferences attracted large attendances and important messages were communicated to our customers. Two major information campaigns were conducted in 2005 on the Single Farm Payment and on the Options for Farm Families Programme. Both were new concepts for customers and both required strong communication campaigns to get the key messages across.

Today's Farm magazine carried relevant technical advice on the various farm enterprises to an ever-increasing client base. Six editions were produced during the year. The public website provided an outlet for all of the organisation's press releases, along with key corporate publications. The site is an increasingly popular means of communicating and work has commenced on upgrading the website.

Performance Evaluation

The Evaluation Unit completed two evaluation projects in 2005. The first, an evaluation of the programme of investment in biotechnology over the period 2000 to 2005, was undertaken by an external consultant. The second was an evaluation of the nutrient research programme. Ongoing projects included a programme evaluation report for the Vocational Certificate in Agriculture Level II Education Programme, an evaluation of the effectiveness of the Advisory Technology and Business Service Advisory Service and a response to a request from the Comptroller and Auditor General for an update on the Value for Money Examination conducted in 1999.

Internal Audit

Three Audit Committee meetings were held in 2005 and audit reports were completed in the areas of research, advisory and administration/finance. Two audit assignments were commissioned and carried out by external consultant auditors in the area of training and in purchasing and procurement.

Research Support Services

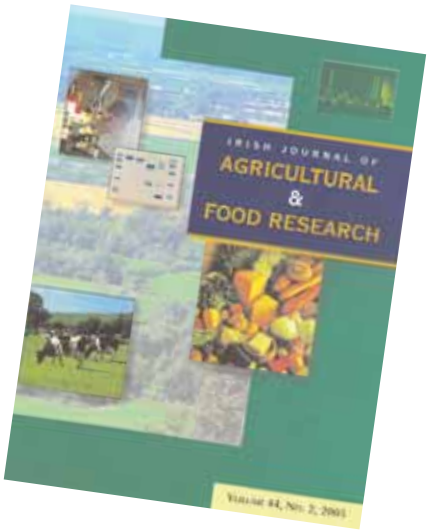
A draft Intellectual Property Policy was completed and approved by management during the year. This policy sets out the organisation's position in relation to the protection and commercialisation of inventions arising from research undertaken by staff members and details the benefits and responsibilities in respect of the organisation and staff members.

Science Communications

A new staff member was recruited to the role of Scientific Writer/Editor, who will provide a wide range of scientific writing and editorial services in support of the organisation's dissemination activities. Amongst the many duties, are responsibility for the production of the *Irish Journal of Agricultural and Food Research* and the development of a new research publication to replace *Farm and Food*.

Library Services

Library services are provided at all main research centres. In 2005, a cataloguing system was implemented and library staff at the research centres added or updated over 250 new records. Contact was made with suppliers of electronic journals and subscription management services and a trial of their services was carried out. A supplier will be selected in 2006.



Key Linkages

Teagasc is committed to working in partnership with all sectors of the agriculture and food industry at home and abroad in the delivery of its services. This partnership approach ensures that the organisation's resources are used to best effect. The organisation has an active PR and Customer Communications Department, which ensures the dissemination of scientific information, smooth running of all public events and the provision of information to the media and the general public. The organisation maintains a public website (www.teagasc.ie), along with a client website (www.client.teagasc.ie) and an intranet site for communicating with staff (www.tnet.teagasc.ie). During 2005, linkages continued to be fostered and enhanced with the following organisations and agencies.

www.teagasc.ie

Department of Agriculture and Food

Teagasc worked closely with the Department to ensure that its programme of activities met the needs of the sector and was consistent with government policy. For example, the Advisory Directorate worked very closely with the Department on the Single Farm Payment, farm partnerships, the reform of the sugar regime and on issues arising from the Nitrates Directive.

www.client.teagasc.ie

Other Government Departments

Teagasc's mandate extends across areas covered by several government departments. In partnership with the Department of Social and Family Affairs and LEADER (EU-funded initiative for rural development), the organisation succeeded in bringing together under a single entity all of the organisations representing rural tourism, known as the Rural Tourism Federation.

Teagasc held a national nursery stock conference, in association with Bord Bia, which was attended by over 200 people. The Pig Development Unit maintained its links with meat plants, Bord Bia and the Department of Agriculture and Food.

Food Research Directorate staff actively participated in technical committees at the following organisations: NSAI, FSAI, FÁS, Bord Bia and Enterprise Ireland. The Food Directorate was also active in partnership with Enterprise Ireland in the development of a national strategy for functional foods innovation.

International Linkages

A successful application was made in 2005 by a consortium involving Teagasc to provide consultancy services to develop a Rural Development Programming System for Serbia and Montenegro.

A number of international collaborative research projects were carried out in 2005. For example, a study of poor growth rates of pigs on commercial farms was carried out in collaboration with INRA (Institute National de la Recherche Agronomique) in France and a project on varying feed to influence the number of muscle fibres at birth, hence affecting

Key Linkages contd.

meat quality, was carried out with the Royal Veterinary College in London.

A research project commenced at AFRC, in collaboration with Coleg Menai in Wales and is funded by the Irish/Wales Interreg IIIA programme. It will investigate the market for niche speciality meat and cheeses, in particular in the UK.

An Italian university is using a high CLA cheese produced at Moorepark in the first major human trial of its type to investigate the health effects of CLA.

Links were developed with the Technical University of Munich where expertise exists on foods targeted at the obese. A new project in this area commenced during the year.

North-South Co-operation

In a new North-South cooperation venture, advisors from south and north of the Border teamed up to assist families in border counties with applications for small business grant aid under the EU Peace and Reconciliation Programme.

A new research initiative identifying the critical factors affecting dairy farming was agreed between the Advisory Service, Moorepark Dairy Research Centre, the Agricultural Research Institute of Northern Ireland, Greenmount College, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin and Queen's University of Belfast.

Higher Education

The Walsh Fellowship Scheme continued to foster relationships between Teagasc and higher education institutions. The scheme provides grants to selected postgraduate students to work on projects relevant to the Teagasc Research Programme, while studying for a higher degree. These fellowships not only provide research training opportunities for young scientists, but facilitate liaison with third-level colleges, introduce new science into Teagasc and increase the organisation's research capacity.

At the end of 2005, 155 students were undertaking research projects under the scheme. Of these, 71 were new fellowships awarded in 2005, with 84 ongoing fellowships. Twenty-five students completed their research in 2005.

Teagasc continued to work with research partners at UCC in the Alimentary Pharmabiotic Centre.
Teagasc eCollege has formed a link with Carmarthenshire College in Wales, which will provide the Virtual Learning Environment (VLE) for all online courses.

Stephen Kildea, Walsh Fellow at Oak Park Crops Research Centre, performing disease assessments.

Industry Representative Bodies

Teagasc maintained ongoing liaison with the various agri-food representative bodies. The organisation strengthened commodity working groups, which are representative of stakeholders and staff and involved them in developing and monitoring overall programmes of research, education/training and technology transfer for their commodity areas.

Joint Programmes with Industry

The Advisory Service continued to work closely with industry partners through formal and informal linkages.

Whilst researchers at Moorepark contributed to the development of the revised Economic Breeding Index (EBI) launched by ICBF.

Local Development Agencies

Teagasc cooperated with and supported regional and local development agencies in the implementation of new developments in rural areas.

Implementation, Monitoring and Reporting

The Statement of Strategy sets out the overall mission, mandate and high level goals and objectives of Teagasc and outlines the broad strategies to be implemented. In preparing this statement, the views and suggestions of staff were taken into account so as to achieve shared ownership and ensure that the broad strategies can be translated into more detailed actions and activities in the business plans of the various management units.

Business plans, prepared at divisional level and by the associated management units and based on the Statement of Strategy, include a concrete annual programme of actions to achieve our goals. In turn, these business plans roll out into individual work programmes of staff members for the Performance Management Development System (PMDS). The objectives and actions specified in the business plans were set to meet specific, measurable, achievable, realistic and time bound (SMART) standards of assessment. The annual business plans therefore enable the organisation to see strategy and planning as an ongoing exercise.

Each division and associated management units generated data on its business activities and the achievement of its business objectives. The inclusion of Risk Management and Quality Customer Service actions/targets in our business plans supported the successful implementation of goals and strategies. The implementation of a cyclical evaluation plan provides key information on the achievement of programme targets and the benefits that our customers gain from our services. Additionally, this evaluation process assists us to identify improvements in the design and delivery of these services to our target audiences and the achievement of improved organisational governance.

Members of the Quality Customer Services group, Dr Lance O'Brien, Stephen O'Connell, Catherine McGrath, Paddy Browne, Mary Quinn and Sheila Quinn.

Compliance with Statutory Obligations

Equality

Teagasc is committed to ensuring equality of opportunity and its personnel and staff development programmes are geared towards this objective. We are also committed to the implementation of Government policy on the employment of disabled people in the public sector. The organisation has developed and implemented policies on bullying, intimidation and sexual harassment to support and protect the dignity of each staff member.

Ethics in Public Office Act, 1995 and Standards in Public Office Act, 2001

In accordance with the Ethics in Public Office Act, 1995, and the Standards in Public Office Act 2001, members of the Teagasc Authority have furnished a statement of interests to the Secretary of the Authority and a copy has been provided to the Standards in Public Office Commission. In addition, Teagasc staff members holding designated positions have complied with both Acts.

Safety, Health and Welfare Act, 1989

In accordance with the Safety, Health and Welfare Act, 1989, Teagasc has prepared safety statements that encompass all factors affecting staff and visitor welfare. Safety Statements for all Teagasc locations were revised in 2005 and published on the Intranet site (Tnet). Following a review of a sample of these statements, the Health and Safety Steering Committee recommended that individual feedback be provided to managers in preparing their 2006 statements. Briefing sessions were organised for staff on Safety Statements, whilst a seminar was organised in November for senior managers on their responsibilities under the 2005 Health and Safety Act.

Safety audits were conducted at all locations and policies and procedures on working alone and on the use of ATVs were published on the Tnet.

Worker Participation (State Enterprises) Act, 1988

Sub-Board consultative structures have been put in place to support the organisation's communications and consultative processes. A National Partnership Committee was established in 2005.

Freedom of Information Act, 1997

The Freedom of Information Act, 1997, was applied with effect from November 1, 2002. The Act establishes three new statutory rights:

- a legal right for each person to access information held by public bodies
- a legal right for each person to have official information held by a public body relating to him/herself amended where it is incomplete, incorrect or misleading, and
- a legal right to obtain reasons for decisions affecting oneself taken by a public body.

A total of nine requests under the Act were dealt with during the year.

Code of Practice for the Governance of State Bodies, October 2001

The Code of Practice for the Governance of State Bodies, approved by the Government in October 2001, has been adopted by Teagasc and arrangements have been made to ensure that the organisation complies with the Code in all aspects of its operations.

Financial Statements - Year Ended 31 December 2005

CONTENTS

REPORT OF THE COMPTROLLER AND AUDITOR GENERAL FOR PRESENTATION TO THE HOUSES OF THE OIREACHTAS

I have audited the Financial Statements of Teagasc for the year ended 31 December 2005 under the Agriculture (Research, Training and Advice) Act, 1988.

The financial statements, which have been prepared under the accounting policies set out therein, comprise the Accounting Policies, the Income and Expenditure Account, the Balance Sheet, the Cash Flow Statement, the Statement of Total Recognised Gains and Losses and the related notes.

Respective Responsibilities of the Members of the Authority and the Comptroller and Auditor General

The Authority is responsible for preparing the financial statements in accordance with the Agriculture (Research, Training and Advice) Act, 1988, and for ensuring the regularity of transactions. The Authority prepares the financial statements in accordance with Generally Accepted Accounting Practice in Ireland. The accounting responsibilities of the Members of the Authority are set out in the Statement of the Responsibilities of the Authority.

My responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements and International Standards on Auditing (UK and Ireland).

I report my opinion as to whether the financial statements give a true and fair view, in accordance with Generally Accepted Accounting Practice in Ireland. I also report whether in my opinion proper books of account have been kept. In addition, I state whether the financial statements are in agreement with the books of account.

I report any material instance where moneys have not been applied for the purposes intended or where the transactions do not conform to the authorities governing them.

I also report if I have not obtained all the information and explanations necessary for the purposes of my audit.

I review whether the Statement on Internal Financial Control reflects the Authority's compliance with the Code of Practice for the Governance of State Bodies and report any material instance where it does not do so, or if the statement is misleading or inconsistent with other information of which I am aware from my audit of the financial statements. I am not required to consider whether the Statement on Internal Financial Control covers all financial risks and controls, or to form an opinion on the effectiveness of the risk and control procedures.

Basis of Audit Opinion

In the exercise of my function as Comptroller and Auditor General, I conducted my audit of the financial statements in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board and by reference to the special considerations which attach to State bodies in relation to their management and operation. An audit includes an examination, on a test basis, of evidence relevant to the amounts and disclosures and regularity of the financial transactions included in the financial statements. It also includes an assessment of the significant estimates and judgements made in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Authority's circumstances, consistently applied and adequately disclosed.

I planned and performed my audit so as to obtain all the information and explanations that I considered necessary in order to provide me with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularity or error. In forming my opinion I also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In my opinion, the financial statements give a true and fair view, in accordance with Generally Accepted Accounting Practice in Ireland, of the state of the Authority's affairs at 31 December 2005 and of its income and expenditure for the year then ended.

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

John Purcell
Comptroller and Auditor General
27 June 2006

STATEMENT ON INTERNAL FINANCIAL CONTROL

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

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

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

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

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

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

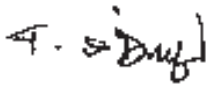
The system of internal financial control is based on a framework of regular management reporting, administration procedures including segregation of duties and a system of delegation and accountability including:

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

Teagasc has an internal audit function, which operates in accordance with the requirements of the Code of Practice for the Governance of State Bodies and with the effectiveness criteria set out in the Teagasc Statement of Strategy published in 2005. The work of internal audit is informed by analysis of the risks to which Teagasc is exposed and annual internal audit plans are based on this analysis. The internal audit plans are approved by the Audit Committee. In 2005, the Authority retained an external expert to advise the Audit Committee and in addition to the audits carried out by the internal auditor had an organisation wide audit of procurement carried out by a consultant auditing firm. As a result of this audit and an audit of travel and subsistence, the Authority has instituted a review of the controls in these areas.

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

I confirm that in the year ended 31 December 2005 the Authority conducted a review of the effectiveness of the systems of internal financial control.



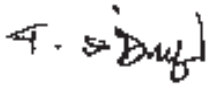
Dr Tom O'Dwyer
Chairman
22 June 2006

STATEMENT OF RESPONSIBILITIES OF THE AUTHORITY

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

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

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



Dr Tom O'Dwyer
Chairman
22 June 2006

James Brett
Member of the Authority

ACCOUNTING POLICIES

Basis of accounting

The Financial Statements have been prepared in accordance with the historical cost convention, subject to certain assets being included at a valuation (see below).

State funding

State funding for research in the food sector and for the Stimulus collaborative research programme is accounted for on an accruals basis. All other State funding is accounted for on a cash receipts basis.

EU income

EU grants are accounted for on an accruals basis.

Operational income

Operational income is accounted for on an accruals basis.

Tangible fixed assets and depreciation

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

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

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

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

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

Leases

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

Rentals on operating leases are charged to expenditure as incurred.

Capital account

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

Stocks

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

Debtors

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

Pensions

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

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

Actuarial gains or losses arising on scheme liabilities are reflected in the Statement of Total Recognised Gains and Losses and a corresponding adjustment is recognised in the amount recoverable from the Department of Agriculture and Food.

ACCOUNTING POLICIES CONTD.

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

The provisions of FRS17 on accounting for retirement benefits have been adopted in full for the first time. The effect of this Accounting Policy is disclosed in Note 9.

INCOME AND EXPENDITURE ACCOUNT
YEAR ENDED 31 DECEMBER 2005

	Notes	**31 December 2005 €'000**	31 December 2004 €'000
Income			
State funding	2	**125,392**	119,487
EU funding	3	**933**	1,261
Operational income	4	**25,290**	24,934
Deferred funding for pensions	9	**11,883**	11,583
Surplus on disposal of fixed assets		**5,796**	68
Other grants, donations and voluntary levies		**4,079**	1,950
		173,373	159,283
Expenditure	5	**176,201**	163,912
		(2,828)	(4,629)
Transfer to Capital Account	12	**(5,147)**	(4,994)
Deficit for the financial year		**(7,975)**	(9,623)
Balance at beginning of year		**6,312**	15,935
Balance at end of year		**(1,663)**	6,312

STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES

	Notes	**31 December 2005 €'000**	31 December 2004 €'000
Deficit for the financial year		**(7,975)**	(9,623)
Experience losses on pension scheme liabilities	9	**(24,203)**	(11,017)
Changes in assumptions underlying the present value of pension liabilities	9	**(138,630)**	(67,967)
Actuarial loss on pension liabilities		**(162,833)**	(78,984)
Deferred pension funding		**162,833**	78,984
Total Recognised Loss for the year		**(7,975)**	(9,623)

The above amounts relate entirely to continuing operations. The Statement of Accounting Policies and notes 1 to 24 form part of these Financial Statements.

Dr. Tom O'Dwyer
Chairman

Jim Flanagan
Director

BALANCE SHEET
Year ended 31 December 2005

	Notes	31 December 2005 €'000	31 December 2004 €'000
Fixed assets			
Tangible assets	13	**79,627**	74,520
Financial assets	14	**2**	2
		79,629	74,522
Current assets			
Stocks	15	**4,475**	5,849
Debtors	16	**8,362**	4,107
Bank balances		**2,509**	12,184
Short term deposits		**686**	449
		16,032	22,589
Creditors - Amounts falling due within one year			
Creditors and accruals	17	**16,742**	13,495
Deferred income	18	**887**	861
Obligations under finance leases	19	**4**	38
Bank loans and overdraft		**60**	1,913
		17,693	16,307
Net current assets		**(1,661)**	6,282
Total assets less current liabilities before pensions		**77,968**	80,804
Deferred pension funding	9	**932,138**	753,564
Pension liabilities	9	**(932,138)**	(753,564)
		0	0
Total assets less current liabilities		**77,968**	80,804
Less			
Creditors – Amounts falling due after more than one year			
Obligations under finance leases	19	**0**	4
Bank loans		**1**	2
Other long-term liabilities		**13**	16
		14	22
Net assets		**77,954**	80,782
Represented by			
Capital account	12	**79,617**	74,470
Income and Expenditure account		**(1,663)**	6,312
		77,954	80,782

The statement of accounting policies and notes 1 to 24 form part of these financial statements.

Dr. Tom O'Dwyer
Chairman

Jim Flanagan
Director

CASH FLOW STATEMENT
Year ended 31 December 2005

	Notes	31 December 2005 €'000	31 December 2004 €'000
Reconciliation of operating deficit to net cash inflow from operating activities			
Operating deficit		**(7,975)**	(9,623)
Depreciation	13	**5,945**	4,554
Transfer to capital account	12	**5,147**	4,994
Interest paid		**1**	7
Interest received		**(136)**	(310)
Profit on sale of fixed assets		**(5,796)**	(68)
Decrease/(increase) in stocks		**1,374**	(110)
(Increase)/decrease in debtors		**(4,255)**	811
Increase in creditors and long term liabilities		**3,244**	156
Increase in deferred income		**26**	496
Net cash (outflow)/inflow from operating activities		**(2,425)**	907
CASH FLOW STATEMENT			
Net cash (outflow)/inflow from operating activities		**(2,425)**	907
Return on investment and servicing of finance			
Interest paid		**(1)**	(7)
Interest received		**136**	310
Net cash inflow from returns on investment and servicing of finance		**135**	303
Investing activities			
Payments to acquire tangible fixed assets	13	**(11,519)**	(9,502)
Receipts from disposals of tangible fixed assets		**6,264**	128
Net cash outflow from investing activities		**(5,255)**	(9,374)
Financing			
Property loan repayments		**(2)**	(7)
Capital element of finance lease payments	19	**(38)**	(106)
Net cash outflow from financing		**(40)**	(113)
Decrease in cash	22	**(7,585)**	(8,277)
Reconciliation of net cashflow to movement in net funds			
Decrease in cash	22	**(7,585)**	(8,277)
Net funds at 1 January		**10,721**	18,998
Net funds at 31 December		**3,136**	10,721

Dr. Tom O'Dwyer
Chairman

Jim Flanagan
Director

1 Teagasc (the Agriculture and Food Development Authority)

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

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

2 State funding

	2005	2004
	€'000	€'000
The amount shown under this heading comprises:		
Vote 31: Agriculture and Food		
Grant-in-aid for general expenses (including Grant for capital purposes, €4,500,000)	92,167	88,597
Grant-in-aid for superannuation purposes	19,239	16,995
Grant-in-aid for human resource purposes	11,693	11,238
Grant-in-aid for food research	1,512	1,873
Grant for Stimulus collaborative research programme	81	184
Grant for forestry publicity and awareness	485	480
Grant for forestry training	215	120
	125,392	119,487

3 EU funding

	2005	2004
	€'000	€'000
Operational Programme for Agriculture, Rural Development and Forestry 1994 – 1999	0	33
Framework Programme V 1998 - 2002	933	1,154
Framework Programme VI	0	74
	933	1,261

4 Operational income

	Authority, Headquarters and National €'000	Advisory Service €'000	Training and Development €'000	Agricultural Production Research €'000	Food Research €'000	**2005 €'000**	2004 €'000
Advisory service fees	0	12,686	0	0	0	**12,686**	12,175
Other fees	7	925	1,484	1,909	2,549	**6,874**	7,034
Livestock trading (Note 7)	0	0	1,066	1,020	4	**2,090**	2,346
Other farming operations	0	0	532	1,543	10	**2,085**	2,216
Canteen receipts	0	0	145	139	138	**422**	389
Publications and miscellaneous	733	70	206	111	13	**1,133**	774
	740	13,681	3,433	4,722	2,714	**25,290**	24,934

5 Expenditure

	Authority, Headquarters and National €'000	Advisory Service €'000	Training and Development €'000	Agricultural Production Research €'000	Food Research €'000	**2005 €'000**	2004 €'000
Pay (Note 8)	4,559	33,884	12,598	21,042	8,860	**80,943**	80,228
Pensions (Note 9)	43,626	0	0	0	0	**43,626**	39,565
Travelling and subsistence	1,101	3,734	732	1,291	309	**7,167**	6,417
General operating expenses (Note 6)	6,975	5,206	5,315	8,968	5,385	**31,849**	26,457
Interest and lease charges	13	32	31	0	0	**76**	63
Depreciation (Note 13)	444	1,162	893	2,125	1,321	**5,945**	4,554
Grants to private colleges	0	0	3,790	0	0	**3,790**	4,286
Other grants	153	23	776	1,164	689	**2,805**	2,342
	56,871	44,041	24,135	34,590	16,564	**176,201**	163,912

6 Analysis of general operating expenses

	Authority, Headquarters and National	Advisory Service	Training and Development	Agricultural Production Research	Food Research	**2005**	2004
	€'000	€'000	€'000	€'000	€'000	**€'000**	€'000
Farming supplies/services	74	5	1,282	1,958	20	**3,339**	3,762
Maintenance/repairs	407	1,274	1,989	1,465	1,393	**6,528**	5,656
Rents/rates/insurances	33	822	239	903	188	**2,185**	3,033
Postage/telephones	659	1,093	155	219	111	**2,237**	2,133
Power/fuel/petrol	45	365	415	697	344	**1,866**	1,360
Laboratory supplies	165	0	66	1,464	1,459	**3,154**	2,645
Printing/stationery/publicity	1,363	965	159	471	249	**3,207**	1,945
Seminar/classroom/library supplies	148	245	231	134	400	**1,158**	1,394
Services of external agencies	0	109	0	321	113	**543**	578
Student and staff canteen supplies	4	2	452	162	158	**778**	830
ICT supplies/services	3,342	162	36	280	148	**3,968**	714
Legal/professional fees (Note 10)	622	46	108	282	164	**1,222**	1,115
Miscellaneous programme costs	112	36	138	561	543	**1,390**	1,042
Miscellaneous	1	82	45	51	95	**274**	250
	6,975	5,206	5,315	8,968	5,385	**31,849**	26,457

7 Livestock trading surplus

	2005	2004
	€'000	€'000
Sales	**2,596**	2,662
Grants and subsidies	**857**	520
Total livestock trading revenue	**3,453**	3,182
Opening stock	**4,072**	3,955
Purchases	**957**	953
	5,029	4,908
Less: Closing stock	**(3,666)**	(4,072)
Total cost of livestock sales	**1,363**	836
Surplus to Income and Expenditure account (Note 4)	**2,090**	2,346

8 Staff

	2005	2004
The average number of staff employed during the year was as follows:		
Professional	**762**	764
Technical	**221**	232
Administrative/clerical	**279**	273
Farm/domestic	**317**	335
	1,579	1,604

9 Superannuation

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

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

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

The above schemes are defined benefit superannuation schemes. Superannuation entitlements arising under the schemes are charged to the Income and Expenditure Account in the year in which they are incurred. No separate fund is maintained, and no assets are held, to finance the payment of pensions and gratuities. The actuarial estimate of future liabilities accruing in regard to future benefits is shown on the Balance Sheet.

Superannuation costs
The average number of monthly pensions paid during the year was 1,326 (2004 – 1,228).

Superannuation benefits
The valuation used for FRS17 disclosures has been based on an actuarial valuation by a qualified independent actuary to take account of the requirements of FRS17 in order to assess the scheme liabilities at 31 December 2005.

The financial assumptions used to calculate liabilities under FRS17 are as follows:	**2005**	2004
	% per annum	% per annum
Inflation rate increase	**2.25**	2.25
Salary rate increase	**3.50**	3.50
Pension rate increase	**3.50**	3.50
Scheme liabilities discount rate	**4.10**	4.66

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

	2005	2004
	€'000	€'000
Accumulated liabilities in respect of active scheme members	**429,013**	390,980
Liabilities in respect of existing pensioners and deferred pensions	**503,125**	362,584
Total accrued pension liability	**932,138**	753,564

Analysis of amount charged to income and expenditure account:	**2005**	2004
	€'000	€'000
Current service cost	**7,669**	5,730
Interest on scheme liabilities	**34,549**	33,954
Past service cost, settlements and curtailments	**5,513**	4,147
Staff contributions	**(4,105)**	(4,266)
	43,626	39,565

Analysis of movement in deficit during the year is as follows:	**2005**	2004
	€'000	€'000
Deficit at 1 January	**753,564**	654,584
Current service cost	**7,669**	5,730
Contributions	**(31,990)**	(23,835)
Past service cost, settlements and curtailments	**5,513**	4,147
Interest on scheme liabilities	**34,549**	33,954
Actuarial loss	**162,833**	78,984
Deficit at 31 December	**932,138**	753,564

Analysis of the amount recognised in the Statement of Total Recognised Gains and Losses

	2005	2004	2003
	€'000	€'000	€'000
Experience gains and losses	**(24,203)**	(11,017)	(16,237)
Percentage of present value of scheme liabilities	**3.2%**	1.5%	2.5%
Changes in Assumptions	**(138,630)**	(67,967)	(34,724)
Percentage of present value of scheme liabilities	**14.9%**	9.0%	5.3%
Actuarial loss recognised in the STRGL	**(162,833)**	(78,984)	(50,961)

Deferred funding asset for pensions

Teagasc recognises as an asset an amount corresponding to the unfunded deferred liability for pensions on the basis of the set of assumptions described above and a number of past events. These events include the statutory basis for the establishment of the superannuation schemes, and the policy and practice currently in place in relation to funding public service pensions including contributions by employees and the annual estimates process. Teagasc has no evidence that this funding policy will not continue to meet such sums in accordance with current practice. The deferred funding asset for pensions as at 31 December 2005 was €932 million (2004 - €754 million). The quantification of the liability is based on the financial assumptions set out above. The assumptions used are based on professional actuarial advice and are advised to the Department of Agriculture and Food but are not formally agreed with the Department.

Change in accounting policy

The effect of the introduction of FRS17 is to recognise the cost of pension benefits earned in the year as expenditure in the Income and Expenditure Account. Prior to 2005 the amount of payments made to pensioners in the year was recognised as expenditure. The funding amount of pension benefits earned in the year is also recognised now in the Income and Expenditure Account. The cumulative liability for pensions earned by employees as at 31 December 2005 is recognised in the Balance Sheet together with a corresponding funding asset. Previously such liabilities were disclosed by a note to the accounts.

10 Audit fee

A provision of €49,500 has been included in expenditure in respect of auditor's remuneration for 2005 (2004 - €44,000).

11 Authority fees and emoluments

The following emoluments were paid to members of the Authority:	**2005 €'000**	2004 €'000
Chairman	**15**	15
Other Authority members	**91**	77
	106	92

These amounts are included in the total pay expenditure included under Note 5 above.

12 Capital account

	2005 €'000	2004 €'000
Balance at 1 January	**74,470**	69,476
Transfers from income and expenditure account		
Amount capitalised in respect of purchased assets	**11,519**	9,502
Net amount released on disposals	**(467)**	(67)
Property loan repayments	**2**	7
Capital element of payments in respect of leased assets	**38**	106
	11,092	9,548
Less: Amortised in line with asset depreciation	**(5,945)**	(4,554)
	5,147	4,994
Balance at 31 December	**79,617**	74,470

13 Tangible fixed assets

	Land	Buildings	Plant & equipment	Total
	€'000	€'000	€'000	€'000
Cost or valuation				
At beginning of year	5,810	75,745	47,216	128,771
Additions	0	7,411	4,108	11,519
Disposals	0	(764)	(580)	(1,344)
At end of year	5,810	82,392	50,744	138,946
Accumulated depreciation				
At beginning of year	0	24,530	29,721	54,251
Charge for year	0	1,913	4,032	5,945
Disposals	0	(342)	(535)	(877)
At end of year	0	26,101	33,218	59,319
Net book amounts				
At beginning of year	5,810	51,215	17,495	74,520
At end of year	5,810	56,291	17,526	79,627

Included in the opening balances is land totalling 612.3 ha (1,513 acres) transferred by the Department of Agriculture and Food at nominal values, and certain other assets which were revalued at 31 December 1975 or 1 July 1980.

Teagasc has the use of 85 ha (210 acres) of land owned by the Department of Agriculture & Food, while the Department has the use of 16.2 ha (40 acres) owned by Teagasc. There is no charge to either party arising from these arrangements.

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

The net book value of assets includes the following amounts in respect of leased assets:	**2005** **€'000**	2004 €'000
Plant and equipment: Balance at 31 December	**0**	39
The depreciation charge for the year on those assets was as follows:	**39**	132

14 Financial assets

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

Separate audited financial statements have been prepared in respect of the Company and its results for the year ended 31 December 2005 were as follows:

	2005	2004
	€'000	€'000
Turnover	**1,108**	1,068
Operating profit before depreciation, interest and tax	**189**	221
Depreciation (net of grants amortised)	**(156)**	(79)
Interest receipts	**8**	5
Tax	**0**	0
Profit after taxation	**41**	147
Accumulated losses to 31 December	**(21)**	(62)

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

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

	2005	2004
	€'000	€'000
Moorepark Technology Limited sales to Teagasc (included in turnover)	**101**	234
Other recoupments from Teagasc (deducted from cost of sales)	**17**	30
Total	**118**	264
Balance unpaid at 31 December	**39**	81
Teagasc sales to Moorepark Technology Limited	**159**	122
Balance unpaid at 31 December	**124**	17

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

	2005	2004
	€'000	€'000
Staff	**180**	170
Other	**112**	118

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

Moorepark Technology Limited utilises assets owned by Teagasc as follows:

	2005	2004
	€'000	€'000
Original costs	**1,196**	1,196
Net book value at 31 December	**228**	297

These amounts are included under Plant and Equipment (see Note 13 above).

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

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

Teagasc has three small investments in agricultural co-operatives costing €1,243 in total (2004 - €1,243).

15 Stocks

	2005	2004
	€'000	€'000
Livestock	3,666	4,072
Farm produce, fertilisers and feeding stocks	497	511
Laboratory and veterinary supplies	0	60
Building materials	0	28
General supplies	312	1,178
	4,475	5,849

16 Debtors and prepayments

	2005	2004
	€'000	€'000
Trade debtors	2,761	2,550
EU income	0	279
Other debtors, prepayments and accrued income	5,601	1,278
	8,362	4,107

Included in debtors in 2004 are amounts receivable from the EU in respect of training grants totalling €278,502.
All amounts included above fall due within one year.

17 Creditors - Amounts falling due within one year

	2005	2004
	€'000	€'000
Trade creditors	**5,984**	4,361
Income tax deducted under PAYE	**1,421**	1,230
Pay related social insurance	**533**	1,230
Value added tax	**225**	134
Withholding tax	**127**	121
Other creditors and accruals	**8,452**	6,419
	16,742	13,495
Creditors for taxation and social welfare included above	**2,306**	2,715

18 Deferred income

Public funded research is carried out in accordance with contracts with other State Institutions, principally the Department of Agriculture and Food. Under these contracts advances received at the commencement of projects are not taken into account as income until the projects are completed.

At 31 December the source and amount of such deferred income was as follows:	**2005** **€'000**	2004 €'000
Department of Agriculture and Food – advance for analyses	769	145
European Science Foundation – Food Safety Promotion	118	716
	887	861

19 Finance leases

Finance charges incurred during the year under finance leases amounted to €3,086 (2004 - €8,825).

Future obligations under finance leases are due as follows:	**2005** **€'000**	2004 €'000
Within one year	4	38
Within two to five years	0	4
After five years	0	0
	4	42

At 31 December 2005 Teagasc had no commitments to enter into further finance leases (2004 - nil).

The movement in finance leasing obligations was as follows:	**2005** **€'000**	2004 €'000
Obligations at 1 January	42	148
New finance leases	0	0
Capital element of finance lease payments	(38)	(106)
Obligations at 31 December	4	42

20 Capital commitments

Capital commitments outstanding at 31 December 2005 amounted to €3,390,000 (2004 - €3,682,455).

21 Operating leases

At 31 December 2005 Teagasc had annual commitments under non-cancellable operating leases as follows:

	Land and buildings	Plant and machinery	Total
	€'000	€'000	€'000
Leases which expire:			
Within one year	19	88	107
Between two and five years	139	60	199
After five years	119	0	119
	277	148	425

22 Analysis of changes in net funds during the year

	1 January 2005	Cashflows	31 December 2005
	€'000	€'000	€'000
Cash at bank and on hand	12,184	(9,675)	2,509
Bank overdraft	(1,912)	1,853	(59)
Short-term deposits	449	237	686
At end of year	10,721	(7,585)	3,136

23 Authority members – disclosure of transactions

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

24 Approval of the financial statements

The Authority approved the financial statements on 7 June 2006.

Appendix I: Abbreviations Used

AFRC	Ashtown Food Research Centre
AI	Artificial Insemination
AMUs	Area Management Units
CAP	Common Agricultural Policy
cDNA	Complementary Deoxyribonucleic Acid
CLA	Conjugated Linoleic Acid
CT	Computer Tomography
DAF	Department of Agriculture and Food
DNA	Deoxyribonucleic Acid
EAP	Employee Assistance Programme
EBI	Economic Breeding Index
EPA	Environmental Protection Agency
EU	European Union
EU FADN	European Union Farm Accountancy Data Network
EU RAIN	European Union Risk Analysis Information Network
FETAC	Further Education and Training Awards Council
FRL	Food Related Lifestyle
FSAI	Food Safety Authority of Ireland
HR	Human Resources
ICBF	Irish Cattle Breeding Federation
ICT	Information and Communications Technology
IGAS	Irish Grain Assurance Scheme
INRA	Institute National de la Recherche Agronomique
IPM	Integrated Pest Management
MAP	*Mycobacterium avium paratuberculosis*
MFRC	Moorepark Food Research Centre
N	Nitrogen
NDC	National Diagnostic Centre
NPWS	National Parks and Wildlife Service
NSAI	National Standards Authority of Ireland
P	Phosphorous
PACCP	Palatability Assurance Critical Control Point
PMDS	Performance Management and Development System
REPS	Rural Environment Protection Scheme
RERC	Rural Economy Research Centre
RNA	Ribonucleic Acid
RT-PCR	Reverse Transcriptase-Polymerase Chain Reaction
SCC	Somatic Cell Count
SFP	Single Farm Payment
SMART	Specific, Measurable, Achievable, Realistic and Timebound
SME	Small- to Medium-Sized Enterprises
TBC	Total Bacterial Count
UCC	University College Cork
UCD	University College Dublin
VLE	Virtual Learning Environment
VTEC	Verotoxigenic *Escherichia coli*
WTO	World Trade Organisation

Appendix 2: Performance Indicators and Progress

GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
	Advisory		
1.1	Assign up to 110 advisory staff to an enterprise specific business and technology programme servicing approximately 10,000 farmers.	Number of advisors in Business and Technology service.	Advisory needs identified.
1.2	Mainstream joint industry programmes, discussion groups and monitor farms, together with enhanced advisory contact on best farm practices in all Area Management Units (AMUs) and advisory programme areas.	Number of joint programmes, monitor farms, discussion groups.	12 dairy, 5 drystock joint programmes; 100 dairy, 40 drystock and 13 tillage monitor farms; 230 dairy, 68 cattle, 19 sheep, 21 tillage and 9 deer discussion groups.
1.3	Use of management information system, including the Irish Cattle Breeding Federation (ICBF) management system, e-profit monitor and cost control planner by up to 10,000 farmers.	Number of clients completing e-profit monitors and number registered for Teagasc/ICBF management information site.	1,184 dairy profit monitors, 303 cattle and 109 sheep profit monitors; 3,200 dairy farmers and 2,000 suckler farmers registered with ICBF.
1.4	Promote the objectives of the Advisory Service Business Plan to clients and the wider community through a series of 100 events/activities.	Number of public events and publications.	198 farm walks with 8,028 attendees; 1,813 group meetings with 27,657 attendees; 148 seminars with 11,532 attendees; and 13 open days/national events with 10,439 attendees. Numerous articles and reports were published in Teagasc's client publication, *Today's Farm*, local and national papers. Monthly newsletters were produced for each enterprise area.
1.5	Develop the competencies of 5,000 farmers to implement best practice in animal welfare, food hygiene and biosecurity necessary for EU cross-compliance.	Number of awareness events and numbers of farmers attending. Number of training courses held. Number of clients using Teagasc Food Assurance Online website.	12,600 farmers attended 50 joint Teagasc-Department of Agriculture and Food public meetings. 1,244 attended Teagasc meetings. 1,100 course participants completed modules on food assurance and animal welfare. 2,000 accessed the food assurance website.
	Adult Farmer Training		
1.6	Develop and deliver a range of accredited food training courses to primary producers and to the food industry.	Range of courses developed and delivered. Number of participants. Number receiving awards. Level of cross-compliance relating to food assurance.	See 2.6.

Appendix 2: Performance Indicators and Progress
GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
	Forestry/Horticulture/Pig Development		
1.7	*Forestry Research:* Conduct research that will result in the development of thinning, harvesting and marketing technologies that will help to underpin farm forestry practices that are environmentally sustainable, economically viable and socially desirable.	Quality and quantity of scientific publications and reports. Competitive funding obtained. Cost/benefit of research as determined by formal evaluation of projects and programmes.	1 poster, 3 presentations, 1 PhD thesis. 3 projects received funding. Final report of 1 project accepted and 1 PhD accepted.
1.8	*Forestry Advice/Training:* Promote and support the development of farm forestry as a viable and sustainable farm enterprise.	Number of attendees at farm forest walks, training courses and forestry information evenings. Improvement in the quality of farm forests. Number and hectares of new farm forest established annually. Level of integration between Teagasc forestry, REPS and other programmes.	Attendees at farm walks: 1,005; training courses: 590; national thinning demonstrations: 750; information meetings: 450. 1,188 landowners were advised on their own plantations. Approximately 10,050 ha planted during 2005 by 1,000 landowners. 4,218 people attending REPS courses were introduced to forestry; 810 people attending Options for Farm Families meetings were introduced to forestry and 1,300 students attending 80- and 100-hour FETAC courses were trained on forestry.
1.9	*Pig Research:* To carry out a pig research programme that will enhance competitiveness and efficiency at farm level, improve product quality and value while minimising any adverse effect on the environment and protect the welfare of pigs in intensive systems	Number of research outputs (refereed scientific papers, conference presentations, other reports). Blueprints developed for best practice in the management of pig production units. Production cost data analysed from pig units to allow internal and international benchmarking.	6 refereed papers, 12 scientific conference presentations, 2 end-of-project reports, 2 PhD Theses, 1 MSc Thesis, 6 technical newsletters, 3 farmers' conferences, 8 training workshops. Blueprints outlined in the pig conference proceedings. Production costs analysed for 110 units using PIGSYS.

Appendix 2: Performance Indicators and Progress

GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
1.10	Carry out research on vegetables, mushrooms, fruit and nursery stock using minimal inputs, ICMS (Integrated Crop Management System) and propagation techniques to produce healthy plants and quality produce.	Number of blueprint reports produced.	1 blueprint on nutrition of vegetables was produced.
		Level of uptake by industry.	Uptake by 300 commercial producers of nursery stock, vegetables and fruit.
		Number of growers using ICMS.	150 growers using ICMS.
		Number of research tasks completed.	4 research tasks completed.
1.11	Restructure the forestry, pig and horticultural services into three new development units, integrating advice, research and training in single management structures by the end of 2005.	Number of commodity teams established.	4 commodity teams established in horticulture (nursery stock, mushrooms, vegetables and fruit); 1 in forestry and 1 in pig production.
		Number of contracted clients	729 in horticulture (72% of all commercial growers); 1,188 in forestry; and 205 in pig production.
	Education and Training		
1.12	Develop and deliver a range of quality assured further and higher education and training courses for 800 school leavers each year.	Range of courses developed and delivered.	Ongoing review and development of existing vocational and third-level programmes. 24 completed the new Advanced Certificate in Agriculture – Drystock Management, which commenced in Gurteen Agricultural College in 2004. In 2005, all Teagasc vocational awards were classified by FETAC as either major, special purpose or minor awards. 2 new workbooks developed.
		Numbers of participants.	456 students enrolled in further training programmes for school leavers, with a total of 2,640 participating. 237 students enrolled in higher training programmes for school leavers with a total of 670 participating.
		Numbers achieving awards.	2,700 candidates received FETAC awards.

Appendix 2: Performance Indicators and Progress

GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
1.13	Promote agricultural education and training and provide appropriate career guidance.	Numbers participating.	3,087 enrolled in further education courses, 670 enrolled in higher level courses.
		Number of career events.	15 career events were held at eight colleges.
		Number attending career events.	2,200.
		Level of compliance with National Qualification Authority of Ireland policy on access, transfer and progression.	Teagasc's Quality Assurance System was agreed with FETAC. This incorporates policies on access, transfer and progression.
1.14	Implement the 40 recommendations of the Forum Review of Teagasc Education and Training Provision by the end of 2006.	Proportion of Forum Review recommendations implemented.	17 of the 40 recommendations were implemented in 2005.
	Agriculture Research		
1.15	Initiate and deliver on 55 research projects (25 scientist years) so as to establish new knowledge and develop technologies and systems to underpin the competitiveness of the livestock sector.	Proportion of research projects successfully completed.	12 projects from the ongoing programme successfully completed in 2005.
		Number of scientific publications and reports.	30 scientific papers produced. 820 technical and popular publications.
		Number of production blueprints.	4 new blueprints of production.
1.16	Initiate and deliver on 20 research projects (10 scientist years) so as to establish new knowledge and develop technologies and systems to underpin the competitiveness of tillage crops for food and energy uses.	Proportion of research projects successfully completed.	4 research projects from the ongoing programme were successfully completed.
		Number of scientific publications and reports.	14 scientific publications were produced, 71 technical and popular reports.
		Number of patents and breeders rights.	2 new potato varieties were entered on the Irish National List.
		Number of production blueprints.	None.

Appendix 2: Performance Indicators and Progress

GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
1.17	Initiate and deliver on 11 research projects (7 scientist years) so as to exploit developments in the biosciences to drive competitiveness and innovation in the agriculture sector.	Proportion of research projects successfully completed. Number of scientific publications and reports.	1 research project was successfully completed. 14 scientific publications were produced, together with 20 technical and popular reports.
1.18	Generate new knowledge (19 projects using 6 scientist years) that will allow the analysis and projection of the effects of actual and proposed changes in markets and policies at the national, sectoral, farm and household levels and provide research-based advice to policy makers on the development of new policy options.	Proportion of research projects successfully completed. Number of scientific publications and reports. Number of briefings to business leaders and policy makers.	9 projects successfully completed. 8 refereed papers and 1 national report. A number of briefing reports were prepared for stakeholders: • Benefits of GM crops; • Impact of WTO on Irish agriculture; • Impact of trade reform on indicators of multifunctionality; • Input into EU RAIN (European Union Risk Analysis Information Network) ammonia emissions model; • Report on international competitiveness of dairy production; and, • Implications of decoupling of direct payments on future direction of CAP.
1.19	Conduct annual survey of farms in Ireland (3 scientist years) so as to be able to compare enterprise analysis within Ireland and to compare Irish farms with other EU member states.	Survey reports. The extent of utilisation by Teagasc and others of the survey data for economic analyses of the comparative performance of farms and farm enterprises. Number of briefings to farmers, business leaders and policy makers on Irish agriculture.	Financial and management data collected and analysed (1,242 farms) as part of the National Farm Survey (NFS). CSO's household survey successfully completed on NFS sample of farms. Information on progress of Irish farming supplied to EU FADN (European Union Farm Accountancy Data Network) database. NFS database used extensively by agriculture economists. NFS results presented to stakeholders on an annual basis.

Appendix 2: Performance Indicators and Progress

GOAL 1: Competitiveness and Innovation in Agriculture

To underpin the development of a competitive, innovative and consumer-focused agriculture sector.

No.	Strategic Action	Performance Indicator	Progress
1.20	Carry out a proactive programme of technology transfer from research to the Advisory Service and to the industry (5 scientist years).	Number of training courses for advisors.	9 training courses for advisors were held.
		Number of open days, workshops and symposia for industry.	10 open days together with 15 workshops and symposia for industry were held.
		Number of popular publications and technical digests.	500 technical and popular publications were produced.
		Number of end-of-project reports.	17 end-of-project reports were produced.

Appendix 2: Performance Indicators and Progress
Goal 2: Competitiveness, Innovation, Safety & Quality in Food

To support the development of a market-oriented, competitive and innovative food sector that meets the highest standards of quality and safety, particularly in the growing 'foods for health' sector.

No.	Strategic Action Food Research	Performance Indicator	Progress
2.1	Initiate and deliver research projects to underpin product quality and innovation in the Irish food industry	Proportion of designated research projects successfully completed.	100%: 10 applications trials completed; 20 products/processes tendered to industry; 13 products/processes taken up by industry.
		Quality and quantity of scientific publications and reports.	49 refereed scientific publications. 117 other publications.
2.2	Initiate and deliver research projects to exploit developments in technology and the biosciences to drive innovation in functional foods.	Number of patents.	1 patent in biosciences.
		Number of applications trials/pilot plant validations successfully completed.	53 applications trials.
2.3	Initiate and deliver research projects to provide an understanding of consumer demands and customer requirements to guide innovation and competitiveness.	Number of products/processes tendered to industry.	None.
		Amount of competitive funding obtained.	€80,000.
		Number of scientific and technical publications and reports.	8 refereed scientific publications, 20 other publications.
2.4	Initiate and deliver research projects on the microbiological and chemical safety of Irish food products.	Amount of industry funding obtained.	€110,000 industry commissioned research.
		Number of scientific and technical publications and reports.	40 refereed scientific publications, 96 other publications.
2.5	Carry out a proactive programme of technology transfer and advice to Irish food companies and regulatory bodies.	Amount of industry-commissioned research invoiced.	€780,000.
		Number of open days, workshops and symposia for industry.	7.
		Uptake of research as measured by follow-on commercial activity.	13 products/processes taken up by industry.
		Number of products in market test by industry.	90.
		Number of food SMEs assisted.	45.

Appendix 2: Performance Indicators and Progress
Goal 2: Competitiveness, Innovation, Safety & Quality in Food

To support the development of a market-oriented, competitive and innovative food sector that meets the highest standards of quality and safety, particularly in the growing 'foods for health' sector.

No.	Strategic Action Food Training and Consultancy	Performance Indicator	Progress
2.6	Develop and provide nationally accredited education and training courses to the food sector and regulatory bodies.	Amount of services invoiced.	€745,000.
		Number of new training courses nationally accredited.	4.
		Number of courses run.	114.
		Number of attendees at courses.	1,625.
		Feedback from customers.	97% of respondents stated course objectives were met.
2.7	Provide specialist analytical and consultancy services to underpin food safety, competitiveness and innovation.	Amount of services invoiced.	€430,000.

Appendix 2: Performance Indicators and Progress
GOAL 3: SUSTAINABLE SYSTEMS OF AGRICULTURE

To develop systems of agriculture and food production that are sustainable in terms of the environment, animal welfare, occupational safety and the work environment.

No.	Strategic Action	Performance Indicator	Progress
	Advisory		
3.1	Provide a REPS planning service to 20,000 farmers.	Number of Teagasc clients participating in the REPS programme	19,800 participants.
3.2	Deliver nutrient management planning and farm waste planning services to underpin sustainable farming and cross-compliance to 500 farmers.	Number of nutrient management and farm waste management plans completed.	1,050 farm waste management plans completed.
3.3	Increase the awareness of requirements and best practice in relation to farm safety to 6,000 REPS participants, 1,200 commercial farmers and 3,000 other farmers.	Number of participants in health and safety courses and number of awareness-creating activities held.	131 adults completed health and safety courses. Health and safety was included as a component of courses for 5,400 farmers. All vocational and third-level Teagasc courses incorporated statutory requirements and best practice in relation to occupational safety. 4,350 young people and adult farmers attended Teagasc health and safety courses. Teagasc arranged/participated in 62 health and safety awareness events for farmers. Health and Safety module included in 133 REPS courses, attended by 3,701 farmers.
	Education and Training		
3.4	Ensure that a range of accredited modules on cross-compliance, including the environment, animal welfare and occupational health and safety, are delivered to young entrants and to adult farmers.	Range of programmes delivered. Number of participants. Numbers achieving awards. Level of cross-compliance relating to the environment, animal welfare and occupational health and safety.	All vocational and third-level Teagasc courses promote sustainable farming practices and include a mandatory module on farming and the environment. All agricultural courses promote best practice in relation to animal welfare. 4,218 adults completed REPS training programmes. 4,092 achieved awards.

Appendix 2: Performance Indicators and Progress
GOAL 3: SUSTAINABLE SYSTEMS OF AGRICULTURE

To develop systems of agriculture and food production that are sustainable in terms of the environment, animal welfare, occupational safety and the work environment.

No.	Strategic Action	Performance Indicator	Progress
	Agriculture Research		
3.5	Establish new knowledge that will help to underpin sustainable agriculture production practices and protect the rural environment (18 research projects using 13 scientist years).	Proportion of research projects successfully completed.	12 new projects started, 11 ongoing projects, 7 projects were successfully completed.
		Number of scientific publications and reports.	9 refereed scientific publications, 3 national reports, 24 technical reports.
		Uptake of research as measured by improvement in environment.	Usage of fertilizer P for agriculture continues to decrease nationally and this is one of the causes for the Environmental Protection Agency (EPA)-observed improvement in the quality of Irish surface waters. Surveys have shown that N usage by agriculture corresponds closely to the rates recommended by Teagasc for grassland and crops. These factors have a beneficial effect on the environment, without adversely affecting production.
		New blueprints of production.	None in 2005.
		Proportion of projects funded competitively.	2 projects funded by Stimulus Fund (Department of Agriculture and Food) and four by EPA. The laboratory is funded by analysis charges.
		Number of policy papers developed and transferred to policy makers.	2 papers on biodiversity noted for consideration by policy makers. Teagasc nutrient advice for grassland and crops adopted in the formulation of REPS policy and in policy related to the National Action Programme of the Nitrates Directive.
3.6	Conduct research that will help to underpin improved animal welfare (5 research projects using 2 scientist years).	Proportion of research projects successfully completed.	4 projects currently ongoing.
		Number of scientific publications and reports.	3 scientific and 5 technical publications.
		Uptake of research as animal welfare improvements.	Scientific input into animal transport initiatives by Irish Government on animal welfare.
		Proportion of research projects funded competitively.	None in 2005.
		Policy papers developed and transferred to policy makers.	2 papers developed and transferred to policy makers.

Appendix 2: Performance Indicators and Progress
GOAL 3: SUSTAINABLE SYSTEMS OF AGRICULTURE

To develop systems of agriculture and food production that are sustainable in terms of the environment, animal welfare, occupational safety and the work environment.

No.	Strategic Action	Performance Indicator	Progress
3.7	Develop strategies that will help to improve labour productivity and improve working conditions on farms (2 projects using 1 scientist year).	Proportion of research projects successfully completed.	1 project completed.
		Number of scientific publications and reports.	3 chapters in books. 1 paper in conference proceedings.
		Number of production blueprints.	2 technical reports. 1 CD-Rom produced on labour use on Irish farms.
3.8	Carry out a proactive programme of technology transfer from research to the Advisory Service and to the industry.	Number of training courses for advisors.	3 in-service training courses for advisors were given on agro-environmental and fertilizer use topics. A Higher Diploma course in Rural Environmental Conservation and Management was also given.
		Number of open days, workshops and symposia for industry.	1 mini open day was held at Johnstown Castle and 4 workshops and a symposium held for local authority, EPA and university staff concerned with the environment.
		Feedback from industry.	Main input was in relation to the Nitrates Directive.
		Number of popular publications and technical digests.	55 technical and popular publications.
		Number of end-of-project reports.	Johnstown Castle produced 8 end-of-project reports in 2005.
3.9	Provide technological and analytical services to the agri-food industry and other users.	Range of services provided.	Due to staff shortages, the service provided by the analytical laboratories was reduced in scope to providing soil and crop analysis for advisors and providing only soil analysis to the industry. Water analysis services were only offered to research staff.
		Cost recovery from service users.	Cost recovery from the industry was excellent. Analysis of 44,000 soil samples provided an income of €570,000 to the laboratory and contributed a further €455,000 to the Advisory Service.

Appendix 2: Performance Indicators and Progress
GOAL 4: RURAL VIABILITY

To promote the development of a vibrant rural economy and society and provide a sound scientific knowledge base to agri-food policy development.

No.	Strategic Action	Performance Indicator	Progress
	Advisory		
4.1	Develop the capability of 15,000 farm families to adjust to change.	Number of participants in Options Analysis Programme.	2,538 participating in the Options Programme. 1,562 action plans prepared. 789 agreed to seek employment or provide service.
4.2	Equip 500 farm families with the competencies to avail of diversification opportunities and other supplementary enterprises.	Number of farmers attending training on supplementary enterprises with income earning potential.	961 adults completed rural viability modules.
4.3	Provide easy access for upwards of 1,000 part-time farmers to Advisory Service's group events.	Number of events/courses provided outside normal working hours.	30% of all Advisory Service public events and 25% of courses were held outside normal working hours.
	Adult Farmer Training		
4.4	Develop and deliver training courses to meet the needs of part-time farmers and operatives.	Range of courses developed and delivered.	The Advisory Service provided a variety of open days, short courses, 25-hour courses, 50-hour courses, seminars and discussion groups covering diverse areas, including: organic farming, rural tourism, business planning, free range poultry, sport horse production, goat production and deer production with a total of 3,004 attendees. During 2005, the eCollege expanded its delivery and was established as a college in its own right in September 2005. Amendments to the Vocational Certificate in Agriculture programme to further facilitate delivery to part-time farmers were proposed in the Education and Training Forum Consultative Group Review.
		Number of participants on e-learning courses.	161 participants completed the online 100-hour course. 127 participants completed the online 80-hour course. 10 farmers participated in an online discussion group.
		Numbers achieving awards	The Vocational Certificate in Agriculture for part-time farmers was delivered at 14 centres with 108 farmers enrolling in 4 new programmes and 447 farmers participating in total.

Appendix 2: Performance Indicators and Progress
GOAL 4: RURAL VIABILITY

To promote the development of a vibrant rural economy and society and provide a sound scientific knowledge base to agri-food policy development.

No.	Strategic Action	Performance Indicator	Progress
4.5	Promote and support diversification opportunities for farmers, including sport horses, organic farming and other supplementary enterprises	Numbers attending training courses or mentored.	234 adults completed alternative enterprise modules.
		Uptake of supplementary enterprises.	142 adopted alternative enterprises.
4.6	Promote and facilitate lifelong learning opportunities for farm families and rural dwellers.	Range of training courses developed and delivered.	Courses included: technology and business, rural viability, farm safety, alternative enterprises, environment/REPS, 100-hour and 80-hour courses, 100-hour and 80-hour eCollege courses, forestry, information technology and safe pesticide use.
		Number of participants.	8,884 adults completed modules.
		Numbers recorded on the AMS and achieving awards.	5,782 adults were awarded FETAC certificates.
	Rural Development Research		
4.7	Conduct research (9 projects using 4 scientist years) that will provide the strategic knowledge base to support the continued viability of rural areas and support the establishment of alternative enterprises and employment opportunities in rural areas.	Proportion of research projects successfully completed.	6 projects currently ongoing. Foresight exercise carried out on the future of rural Ireland.
		Number of scientific publications and reports.	Geographic documentation of farm systems in Ireland produced.
		Amount of competitive funding obtained.	New projects submitted for Research Stimulus funding (DAF).
		Number of policy options developed and transferred to policy makers.	Projects ongoing, more completed during 2005.

Appendix 2: Performance Indicators and Progress
Goal 5: Operational Capabilities and Modernisation

To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

No.	Strategic Action	Performance Indicator	Progress
5.1	Continue the implementation of the Human Resources Strategy.	Publication of the Staff Handbook by mid-2005.	Handbook finalised and taken through the Partnership Committee.
		Development of competency profiles for all major areas of employment by mid-2006.	Steering Group established. Tender for consultancy issued.
		All interview boards sitting after January 2006 will be fully trained in competency assessment.	Training approach agreed. Research completed, materials prepared, course finalised for delivery in 2006.
		Employee assistance programme in place by end of 2005.	Tender issued, provider selected, commenced October 2005.
		Quarterly monitoring and reporting on key equality data in place by late 2005.	Equality Committee established to commence work.
5.2	Establish a partnership approach to reach staff/management consensus on organisational issues.	The continued satisfactory operation of an active National Partnership Committee.	Partnership Officer appointed. Partnership Committee trained. Regular meetings, 9 sub groups. Action Plan progressed. Comprehensive communications.
5.3	Undertake a HR business process improvement programme and develop a Human Resources Information Technology (HRIT) system.	Completion of the analysis of key business processes and identification of detailed business requirements leading to the preparation of an invitation to tender by end of 2005.	Project Manager appointed. Business Process Improvement Study completed with support from external consultants, PricewaterhouseCoopers. Key deliverables and future state process defined. Business Case completed. Detailed specifications completed, invitation to tender posted, tenders received and evaluation process advanced.
		Success in integrating the improved business processes with the HRIT system as the phases are being implemented during 2006 and 2007.	Recruitment process reviewed, activity report put in place, contract and increment databases established and progress made in many other areas.

Appendix 2: Performance Indicators and Progress
Goal 5: Operational Capabilities and Modernisation

To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

No.	Strategic Action	Performance Indicator	Progress
5.4	Progress the modernisation agenda through the agreement on Action Plans under Sustaining Progress	Implementation of plans, completion of reports and satisfactory verification by due dates.	Phases 4 and 5 of Sustaining Progress successfully completed, reviewing Action Plans to encourage innovation in the context of the next national agreement.
		Regular meeting of the group of unions and briefing of managers.	Meetings held as planned.
5.5	Upgrade the Integra finance system and make greater use of the system in the management of the organisation.	Accounting system upgraded to Integra 3 by the end of 2007.	Planned to take place during 2006.
		Payroll system modernised in association with new HRIT system by end-2006.	Put to tender and tenders currently being evaluated.
5.6	Implement Corporate Governance regulations and directions.	Satisfactory reports from the C&AG on the degree of compliance.	Clean audit report received.
		Returns made under Ethics in Public Office on time each year.	Returns made on time.
		The extent to which a programme of internal audit is implemented in accordance with the agreed annual Internal Audit Plan.	Agreed annual Audit Plan implemented.
		Biannual report to the Authority on the extent of implementation of a risk management programme.	Reports made to the Authority twice in the year.
5.7	Allocate an annual budget for implementation of an organisation-wide staff training and development programme based on training needs identified in PMDS.	Organisation-wide staff training plans developed and implemented each year.	Staff training plans developed, agreed and resourced in each Directorate. 1,953 training proposals for 1,173 staff referred from PMDS process.
		The percentage utilisation of the annual staff training budget.	Overall training budget utilised to implement plan.

Appendix 2: Performance Indicators and Progress
Goal 5: Operational Capabilities and Modernisation

To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

No.	Strategic Action	Performance Indicator	Progress
5.8	Develop and implement a robust and secure ICT infrastructure using industry standard components.	Relocation of servers to third party data centre by mid-2005.	Servers were installed and are operational. A considerable number of additional servers arising from the new application systems projects and the ICT Infrastructure Upgrade project have also been installed in the Data Centre.
		Complete wide area network upgrade by end-2005.	Pilot projects have been implemented in Kinsealy and Moorepark and are currently being assessed. The project is on course to be completed by the end of 2006.
		Complete infrastructure project by end of 2006.	With the exceptions of a small number of offices whose business does not justify a high speed link, or those offices where broadband lines are not yet available, all the remaining offices now have high speed links.
5.9	Ensure adequate ICT support for staff using current and future applications.	Successful outsourcing of user support in line with the roll out of new infrastructure in 2005 and 2006.	A vendor was selected to provide Help Desk and Technical Support Services and the services are being rolled out at the same pace as the new ICT infrastructure.
5.10	Continue the development of our ICT systems in line with eGovernment Strategy.	Delivery of critical applications as set out in the ICT Plan.	**LIMS** – Laboratory Information Management System has been progressing throughout 2005 with Grange Research Centre and Johnstown Research Centre going live in December 2005. **HR IT System and Payroll** – A new integrated HR and Payroll system has been selected. **Website Redevelopment** – The selection of a business partner to undertake this project for Teagasc is almost complete. **National Farm Survey** – The new NFS system will be fully operational by May 2006. **eREPS** – This project has been completed and the new system went live in July 2005.

Appendix 2: Performance Indicators and Progress
Goal 5: Operational Capabilities and Modernisation

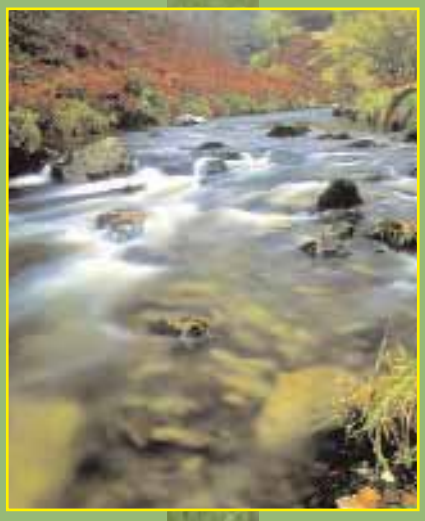
To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

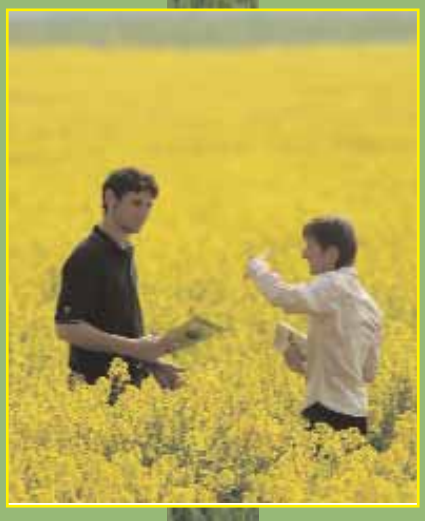
No.	Strategic Action	Performance Indicator	Progress
5.11	Continue the development of the business planning process and Management Information Framework (MIF).	Proportion of business plans delivered on schedule.	All Management Units prepared business plans in 2005. The planning template to be used for this in 2006 was revised.
		The development and implementation of a MIF by end-2006.	Preparatory work being coordinated by Evaluation Unit.
5.12	Continue to implement a programme of internal evaluation.	Delivery of evaluation plan on time	3 evaluation reports completed.
5.13	Continue to implement a Quality Customer Service Initiative	Delivery of the action steps in the Customer Service Action Plan on time.	Action steps in the Customer Service Action Plan implemented in 2005 as planned.
		Compliance with Teagasc Customer Charter commitments as indicated by surveys of customers.	Survey documents, for completion by participants in the range of courses offered by Teagasc, are available to download from the Teagasc Tnet site (intranet). Completed questionnaires are analysed and used to inform changes to programmes and resources.
5.14	Provision of internal research management support services and the development of an intellectual property management system.	Updating the Research Management Information System by end of 2006.	Update commenced in 2005.
		Implement an organisation-wide policy on intellectual property in accordance with ICSTI Code of Practice by end of 2006.	Policy document approved by management in 2005.

Appendix 2: Performance Indicators and Progress
Goal 5: Operational Capabilities and Modernisation

To develop the organisation's human and physical resources and operational capabilities to ensure the delivery of quality services to Teagasc's customers while implementing Government policy on public service modernisation and corporate governance.

No.	Strategic Action	Performance Indicator	Progress
5.15	Provision of a comprehensive Public Relations and Customer Communications programme of services.	Public website upgraded by mid-2006.	Process initiated. Updating of content will be completed by end-2006. Average monthly visits is 62,925.
		Number of press releases/publications issued and the extent of media coverage resulting.	99 press releases. 6 editions of *Today's Farm* - Teagasc's client publication. 5 conference proceedings published. Corporate publications included Annual Report, Statement of Strategy and Customer Charter. 50 events/activities covered by the photographic media.
		Number of new publications produced annually.	Pig newsletter: 5; *Irish Journal of Agricultural and Food Research:* 2; Executive summaries: 5; Research Reports: 2; *Staff Info*: 3; Annual Report (English and Irish); Statement of Strategy 2005-2007 (English and Irish); Customer Service Action Plan (English and Irish); Customer Service Charter (English and Irish). Conference Proceedings: 4; Open Day booklets: 4; *Today's Farm:* 6; Other publications, including newsletters, fliers and booklets: 27.
5.16	Implementation of an internal audit programme.	The scale and extent of the programme implemented relative to the plan	3 Audit Committee meetings held in 2005. Audit reports completed in areas of research, advisory and administration/ finance. 2 audit assignments commissioned and carried out by external consultant auditors in the area of training and in purchasing and procurement.
5.17	Implementation of a library services programme.	Full text online access to journals, available to staff as per programme.	Business case for online access prepared and submitted for approval to implement project in 2006.
5.18	Implementation of an annual building programme in accordance with the budget provided.	Planned annual programme completed on time and to budget.	Building programme involving an expenditure of over €8m was completed in 2005.





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