

Our performance

This section provides a range of practical examples which demonstrate how DPI&F has delivered on the following five key outcomes it seeks for industry and community during 2007–08:

- *improved productivity and efficiency*
- *market access*
- *trade development*
- *industry adaptability*
- *sustainable resource use.*

A 2007–08 performance scorecard providing an overview of our achievements for each outcome area is on pages 16–21 of this report.



Improved productivity and efficiency

Delivering on our key outcome of improved productivity and efficiency for primary industries means:

- reduced production costs
- maximised production and quality of output from available resources
- maximised production of high-value products
- elimination of production and distribution inefficiencies
- reduced red tape in the regulatory environment.

Productivity and efficiency scorecard 2007–08

Industry	All	Beef	Forestry
What we planned to do in 2007–08	Provide management training under FarmBis for 3,000 eligible participants	Engage beef producers in northern and central Queensland in the use of business analysis systems	10 improved elite <i>Corymbia</i> -based hybrids with proven wood quality characteristics released for commercial deployment
What we achieved	Over 36,000 producers have undertaken accredited training during the last three years	DPI&F has accelerated new technologies and best practice management through its FutureBeef initiative	In northern Queensland the plantation industry is expanding, using red mahogany seed from DPI&F/CSIRO
Progress against MPS targets*	Target: 3,000 Actual: 5,722 Measure: AAA Farmbis subsidised training occasions	Target: 398 Actual: 739 Measure: Business capacity building activities	Target: 26 Actual: 68 Measure: Improved varieties, cultivars and commercialised parent lines
What we plan to do in 2008–09	While this project ended in June 2008, formalised training and skills development will continue	Increase profitability of beef enterprises through the FutureBeef initiative	Further develop six elite <i>Corymbia</i> -based hybrids with proven wood quality characteristics for commercial deployment by June 2011

* For more information on MPS targets, refer to overall performance scorecard on pages 16–21.

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Future of multi-billion dollar beef industry looks bright

With the beef industry one of Queensland's biggest earners and employers, DPI&F is accelerating the adoption of new technologies and best practice management through its FutureBeef initiative. FutureBeef represents the department's commitment to the beef industry and aims to support producers to better manage risks by addressing the whole supply chain—from property to market.

Queensland's beef industry: a snapshot

Valued at \$3.4 billion, the beef industry provides over a third of Queensland's gross value of production (at first point of sale).

- Beef cattle production is the major agricultural activity across Queensland (the state has 11.3 million cattle).
- There is strong market demand for quality beef from both domestic and export markets.
- The beef industry directly employs 23,000 workers, and a further 10,000 workers in meat processing.

FutureBeef will aim to improve business productivity, sustainability and profitability by:

- taking a whole-of-business approach to integrating and adopting new and existing technologies
- supporting beef supply chains and the market orientation of beef business
- maintaining industry adaptability with a focus on climate change, drought preparedness, biosecurity and animal welfare, and high environmental risk management.

FutureBeef activities will target responsive, medium to large commercial beef production enterprises in the major cattle producing regions of Queensland. 'Young' beef producers won't miss out, with programs based on e-learning techniques aimed at helping prepare them to be the state's next generation of top producers and industry leaders.

DPI&F recognises the vital importance of a strong and globally competitive meat processing sector, and will also target that part of the supply chain. Efforts will be coordinated across regional Queensland in partnership with industry bodies, such as Meat and Livestock Australia, to ensure maximum uptake of new technology on-property by producers.

As testament to the importance placed on FutureBeef, DPI&F have appointed a manager and five additional extension staff, providing a team of 41 extension officers aligned to the FutureBeef initiative throughout regional Queensland.

Beef cattle production is a major agricultural activity throughout Queensland, and a strategic effort across the state will maximise industry potential and efficiencies. FutureBeef maps out a 'fresh approach' to meeting the current and future extension needs of the beef industry and is another way DPI&F is enhancing its service delivery.



Grain farmers reap benefits from ley pasture training

To date, more than 230 grain farmers, natural resource management officers and agronomists in Queensland have participated in DPI&F's LeyGrain workshops, developed initially with funding from the Grains Research and Development Corporation in 2004 and delivered through Grain and Graze projects in the Maranoa/Balonne and Border Rivers catchments from 2006 to 2008.

The LeyGrain workshops are delivered in four sections: benefits and profitability, planning the pasture phase, managing pasture and animal production, and planning the return to crop—followed by on-farm demonstration and observation activities. A key focus of the 2007–08 workshops was to increase producer knowledge about selecting the right pasture species for their soil types and region to improve their ability to successfully establish pastures. As a result of the workshops, an 80% increase in pasture sowings over the next five years is expected, benefiting economic resilience, livestock and crop production, soil qualities and the environment. This initiative also promises an estimated annual \$12 million increase in the profitability of mixed farming enterprises in southern Queensland.

LeyGrain workshops will continue in existing catchments during 2009, and are also likely to extend into the Condamine catchment. Due to their success in Queensland, the LeyGrain workshops have also been modified for projects in grain-producing regions in New South Wales, Victoria and South Australia.

Out of the woods: research supports native timber industry

With logging from native forests on state lands being phased out, Queensland's subtropical and tropical hardwood plantation timber industry is poised for major expansion. DPI&F has supported this expansion through its hardwoods research program. This involves advanced bio-science research looking at disease susceptibility, wood quality traits, genetic breeding selection, plant growth models and assessing environmental impacts on different genotypes.

In northern Queensland, the plantation industry is expanding at a rapid rate, using red mahogany (*Eucalyptus pellita*) seed from DPI&F/CSIRO second generation seed. The first generation of improved *Corymbia* hardwood clones were planted in 2006, with trees showing excellent growth across a wide range of sites and demonstrating significant tolerance to frost, pests and disease. DPI&F is currently working with the University of the Sunshine Coast to support propagation and floral biology sciences, and pest and disease research. A study into wood quality markers is underway with Southern Cross University.

A major challenge for the timber industry is the extreme shortage of planting material. Additional research is urgently needed to further improve propagation technologies so that the new hybrids can be available for planting. If industry can access increased quantities of improved planting stock, major economic benefits are predicted for the Burnett and Wide Bay, Gladstone and Miriam Vale, Mackay and Innisfail. Up to 130 new jobs could be created on the new and expanded plantations in these regions, which could boost those regional economies by \$14 million a year.



FarmBis rural training support program delivers results

Since its inception three years ago, the FarmBis rural training support program has subsidised over 36,000 Queensland producers to undertake accredited business training. Through FarmBis, the Queensland and Australian Governments have helped to build capacity across rural communities by offering subsidies of 65% for training in strategic planning, business and financial risk management, change management, skills analysis, insurance and funding, quality assurance, hazard analysis and total quality management and production management.

As part of FarmBis, nine specialised training projects were funded that targeted a range of sectors including lifestyle horticulture, grain, livestock and cotton. Training focused on skills such as risk management, natural resource management, computer literacy and business management. All projects were aligned to the needs of the industries concerned and benefited from the mix of traditional face-to-face delivery and online methods to overcome distance and cost challenges for producers. The nine FarmBis training programs were delivered by the Australian Centre for Lifestyle Horticulture, AgForce, Conservation Farmers, Cotton Research and Development Corporation, Greening Australia, Growcom, North East Downs Landcare, Innovative Agribusiness Solutions, and the Australian Poultry Cooperative Research Centre. While FarmBis invested \$1.5 million in the targeted industry training, industry's involvement and financial and in-kind support was vital.

Australian Government support for FarmBis ended in June 2008, with one of the most significant outcomes from these projects being a commitment from industry to continue its investment in training Queensland's primary producers.

Helping Indigenous Queenslanders develop new primary industries

DPI&F is committed to helping Indigenous people develop new primary industries by supporting them to manage and protect their land and sea resources for future generations. A project is underway to help Indigenous people identify and develop existing or possible primary industry opportunities based on their access and ownership of traditional land. The project will tap into DPI&F's expertise in economic analysis, trade and market access, smart science, targeted research and development and capacity building. DPI&F recognises that Indigenous business development is a long-term investment, and is based on strong relationships and outcomes achieved in partnership with Indigenous people, other agencies and service providers. 2007-08 initiatives have included:

- assisting the Kooma Traditional Owners Association to develop a sustainable beef enterprise on Murra Murra and Bendee Downs
- progressing business planning and feasibility assessments for commercial crabbing enterprises at Hope Vale and Aurukun in Cape York
- forming an Indigenous Pastoral Alliance to establish strong networks and progress innovation, training and development after consultation with Indigenous pastoral enterprises across Queensland
- providing ongoing business and mentoring support to the emerging Puchiwu fishing company in Lockhart River
- delivering ongoing business planning, mentoring and technical support to Korrawinga Aboriginal Corp to develop their contract nursery facility, essential oils and floriculture ventures based at the Scrub Hill Farm
- exposing young Aboriginal students from primary schools in the Toowoomba area to science careers and projects through hands-on activities and staff presentations (in partnership with the local DETA Indigenous Education Unit).

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Beefing it up

Beef has been Australia's biggest primary export earner since 2003, when it replaced wheat at the top of the list. In 2007–08, total cattle and beef product exports earned Australia \$5.4 billion of which \$3.1 billion came from Queensland. The Queensland beef industry's reputation for producing and exporting high quality, safe and traceable beef is a major advantage. Working smarter means industry recognises that increasing the dollar value of Australian beef does not necessarily rest only with producing *more* beef, but examining how meat can be produced, processed and supplied in the most cost-efficient way with the least impact on the environment.

Through its research, development and extension work, DPI&F actively supports Queensland's beef industry and its exports. DPI&F is currently leading the development of a national strategy for beef research, development and extension, together with major partners such as Meat and Livestock Australia, interstate governments, CSIRO and industry participants. An investment in new facilities, including the Centre for Advanced Animal Science at The University of Queensland's Gatton campus and the Health and Food Sciences Precinct at Coopers Plains (due to open in 2010), will provide additional and specialised capacity for research into animal health, production, welfare and biosecurity sciences.

A range of other collaborative research partnership projects to capitalise on Queensland's comparative international advantages are also underway, with some involving genetic research through the Beef Cooperative Research Centre.

Helping industry develop best practice property management systems

DPI&F's Property Management Systems Initiative (PMSI) is accelerating the development and adoption of property and farm management systems and related on-farm initiatives to foster improved profitability and sustainability.

A key project under the Queensland Government's Blueprint for the Bush, PMSI contributes to meeting the department's commitments under the Farm Management System Memorandum of Understanding with the Queensland Farmers' Federation.

After assessing project proposals from industry organisations and regional natural resource management bodies in 2007, DPI&F approved nine PMSI projects representing a good mix across the extensive and intensive primary industry sectors and regional natural resource management groups. As part of the project, 10 PMSI officers have been appointed by DPI&F to work closely with industry and regional natural resource management bodies across Queensland to promote the use of property management systems building on industry best practice. Where possible, PMSI officers work in industry offices on a daily basis.

In 2007–08, total cattle and beef product exports earned Australia \$5.4 billion of which \$3.1 billion came from Queensland.



Three new wheat varieties join the field

Queensland now has three new commercial wheat varieties designed to meet the demand of niche markets and boost yield at harvest time, as a result of extensive collaborative research by DPI&F's plant breeding team and industry partners. The three new wheat varieties are called EGA Kidman, EGA Bounty and EGA Stampede.

- EGA Kidman was developed to provide premium quality wheat to the Asian sponge and dough market, with the value of exports into this market alone estimated to be worth \$0.5 billion.
- EGA Bounty is a high-yielding milling wheat targeted at the Australian bulk wheat export market, valued at \$8 billion each year. The variety is a hard wheat suitable for early to mid sowing with intermediate maturity, offers up to a 9% yield increase over the most popular variety and is resistant to stem, stripe and leaf rusts.

- EGA Stampede is the first wheat specifically developed for the livestock feed market following industry and grower demand for a quick maturing wheat variety, and offers up to 12% more yield than other varieties.

EGA Kidman and EGA Bounty were bred by Enterprise Grains Australia, as a joint venture between DPI&F, NSW Department of Primary Industries and the Grains Research and Development Corporation (GRDC). EGA Stampede was funded jointly by DPI&F, GRDC and The University of Queensland. All three varieties were developed through EGA and commercialised by Crop Care Seed Technologies and Austgrains Pty Ltd.



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Improved productivity and efficiency

Figure 15: Property Management Systems Initiative funded projects

Organisation	Project	Highlights to date
Queensland Dairyfarmers Organisation	Dairying Better N Better for Tomorrow	70% of dairy farmers near Rockhampton involved in program, 25 dairy farmers have completed on-farm self assessments to benchmark current practices
Nursery and Garden Industry Queensland	Implementing production nursery farm management systems in North Queensland	Analysis of water use efficiency conducted, with one business showing a 300% improvement, three production nurseries proceeding to high level certifications
Mackay Whitsunday Natural Resource Management Group	Implementing property management systems in the O'Connell River and Bakers Creek Catchments of the Mackay Whitsunday region	Grower and industry networks developed, and training needs of sugarcane growers identified
Canegrowers Isis Limited	Enhancement of on-farm profitability and sustainability through area-wide engagement	Worked with canegrowers to benchmark 'change on farm', and conducted farm safety workshops with 54 canegrowers along with farm walks to demonstrate latest practices first-hand
Burdekin Productivity Services Limited	Farm management systems for irrigated agriculture in the Lower Burdekin	Improved efficiency from chemicals and liquid fertilisers, due to spray application workshops conducted in May/June 2008, engaged a 'grower champion' who has attracted nine more growers to learn about integrated pest management
AgForce Grains	Grains best management practice	Secured \$160,000 in National Landcare Program funding to pilot pesticide application module with the Fitzroy Basin Association, assessed pesticide application best management practices across approximately 70,000 hectares, with 72% already at minimum or above standard
Mary River Catchment Coordination Association	Growing sustainable agricultural precincts in the Middle Mary and Kin Kin	Continued work with Gympie intensive farming community to develop landholder networks and benchmark practices, completed preliminary biophysical analysis on soils, landscapes, waterways and wetlands in the subcatchments and planned two on-farm trials to reduce erosion in pineapple crops and fertiliser use in winter pastures for dairying
Lockyer Valley PMSI project	Profitable and sustainable vegetable production systems in the Lockyer Valley	Continued work with intensive farming industries to benchmark current management practices and social networks, identified three potential trial sites and drafted Lockyer Catchment biophysical characterisation report and Bremer Catchment report
Flower Association of Queensland Incorporated and Turf Producers Association of Queensland	Development of a comprehensive property management system for the turf and cut flower sectors	Project commenced 30 June 2008

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Cyclone comes in handy for forestry scientists

Queensland scientists have made the most of the debris left in the wake of tropical Cyclone Larry, almost two years after it wreaked havoc across North Queensland, using felled forests to help bolster the future of the hardwood timber industry. DPI&F was able to recover, for scientific research, more than 70 hardwood trees with little or no visible damage from rare mature experimental plots flattened by Cyclone Larry. The two main species were 19 year-old Gympie messmate (*Eucalyptus cloeziana*) and 15 year-old red mahogany (*E. pellita*), both of interest to the tropical plantation timber industry.

As the hardwood industry has historically relied on timber from native forests and most hardwood plantations in Queensland are younger than 10 years old, there are a lot of unknowns when sourcing timber resources from new plantations. As part of a project jointly funded by the Queensland Government and Forest and Wood Products Australia, DPI&F scientists evaluated the salvaged timber's processing characteristics and properties such as strength, durability and density, which all impact on the value of the final product.

Results showed Gympie messmate trees had similar density, hardness, strength and stiffness to mature natural-grown timber, while plantation-grown red mahogany exhibited poorer wood quality and took considerably longer to mature. While both species could produce plywood for commercial structural products, Gympie messmate showed greater potential for high-strength plywood. This study will guide future forestry research and help investors make more informed decisions about the potential product value of timber species.

Cattle tick vaccine research to benefit beef

Queensland beef is big business, exporting more than \$3.1 billion in high-quality beef products every year. However, cattle ticks represent a real risk to the state's exporting reputation, causing losses of approximately \$175 million annually in northern Australia alone. To protect Queensland's valuable beef industry and livestock, DPI&F scientists are working towards the development of a new cattle tick vaccine. Access to a cattle tick vaccine would minimise the use of synthetic pesticides to treat ticks, which also has the benefit of reducing chemical residues in milk, meat and the environment.

To date, vaccine research has included the use of modern biotechnology tools to identify candidates associated with cattle tick attachment and survival during their lifecycle, as well as studying host cattle to more fully understand the mechanisms of susceptibility and resistance to ticks. At this stage, vaccine pre-trials are planned for late 2009, with likely vaccine candidates available for commercialisation in 2011.



Reducing greenhouse gas by making livestock feed easier to digest

While kikuyu grass is a highly productive and important food source for Queensland's dairy, beef and sheep meat industries, current varieties are harder for livestock to digest than temperate pasture grasses. As a result of indigestibility caused by the high lignin content found in kikuyu, cattle and sheep that eat this species of grass (and other tropical grasses) produce a greater volume of methane gas. However, tropical pasture grasses are generally more productive and have higher water use efficiency than temperate grasses.

With funding support from Dairy Australia, DPI&F researchers are seeking to develop kikuyu pastures with better digestibility by targeting the genes that control lignin production in the grass. Natural mutations in the lignin genes of crops such as maize, sorghum and pearl millet have already improved digestibility by up to 20%. A similar improvement in the digestibility of kikuyu would have enormous benefits for the productivity and profitability of grazing and dairy industries, as well as bringing environmental benefits from reduced methane emissions. A successful outcome could lead to the creation of a new Queensland-based domestic and export seed production business likely to earn good returns in America, Africa and South East Asia. Knowledge gained from this project could also be transferred to research on other grasses, such as the Australian turf grass industry valued at more than \$500 million per year.

Sandalwood: a growth industry for Weipa

World demand for the lucrative timber species of sandalwood far exceeds supply, with its oil and wood products particularly prized in India and China. Sandalwood oil can wholesale for up to \$500 a litre, and is used in perfume, toiletries, confectionery and pharmaceuticals.

Sandalwood can take up to 30 years to reach maturity, and needs host plants to survive. DPI&F research indicates that mine regeneration sites generally have a high proportion of suitable host plants, and that 'Indian Sandalwood' (a species native to India, Indonesia and Australia) can be used to enrich and provide commercial value to old mine sites. The species is best suited to growing in the Weipa region. DPI&F staff are working with Indigenous communities in Cape York to explore opportunities to develop commercial sandalwood plantations on previously mined land, particularly around Weipa. This could create a new, profitable and sustainable industry and opportunities for local processing, meaning more jobs and economic development for remote Indigenous communities. DPI&F will continue to work with the local community, mining companies and traditional owners to establish initial plantations.

South-west Queensland traditional owners benefit from training

A recent partnership between DPI&F and a south-west Queensland grazing company has strengthened the department’s capacity to better meet the needs of Indigenous land management. In April 2008, DPI&F staff met with 10 members of the Kooma Traditional Owners Assoc Inc (KTOAI) to conduct specialised training at Murra Murra, one of the company’s two grazing properties south-east of Cunnamulla. KTOAI manages a total area of 87,000 ha on Murra Murra and Bendee Downs, using this land for grazing under sub-lease agreements along with cultural and conservation uses. The training aimed to provide the Kooma’s current elders and future leaders with the skills to maintain sustainable grazing levels for their properties. Fire management strategies, weed control and macropod and feral animal influences on grazing systems were also part of the workshop. Further training on changing grazing conditions may be held in early 2009 closer to sub-lease negotiations.

Rural skilling the future workforce

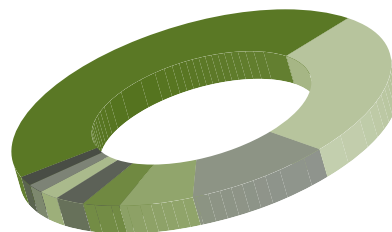
With Queensland’s primary industry commodities valued at more than \$12 billion and around 61,550 Queenslanders employed in the agriculture, forestry and fishing sectors (3.4% of total employment in Queensland), a skilled workforce is a vital part of securing economic growth for the sector.

Figure 16: Employment in Queensland primary industries

According to the 2006 ABS census, 61,557 Queenslanders (3.4% of the total 1.8 million workers in Queensland) are employed in primary industries. Of these:

- 87.3% are employed in agriculture:
 - 47.7% in grain, sheep and beef cattle farming
 - 27.3% in horticulture and fruit growing
 - 12.4% in growing other crops
 - 1.9% in farming other livestock
 - 2.1% in poultry farming
- 3.8% in dairy cattle farming
- 7.0% in services to agriculture, including hunting and trapping
- 3.2% in commercial fishing
- 2.5% in forestry and logging

- Grain, sheep and beef cattle farming • 47.7%
- Horticulture and fruit growing • 27.3%
- Growing other crops • 12.4%
- Services to agriculture, including hunting and trapping • 7.0%



- Dairy cattle farming • 3.8%
- Commercial fishing • 3.2%
- Forestry and logging • 2.5%
- Poultry farming • 2.1%
- Farming other livestock • 1.9%

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To safeguard the sustainability of Queensland's primary industries in the future, DPI&F is working with government, industry, training bodies and employers to address skills shortages and match skill needs with targeted training. DPI&F is investing in the future of careers in primary industries through its Rural Skills, Training and Labour Initiative. The initiative aims to address future skill gaps and support vocational education for the next generation of workers, and provide industry with practical help to attract, recruit, develop and retain a skilled workforce. Initiatives include:

- school-to-industry partnerships to attract young people into agribusiness careers (in partnership with AgForce and the Department of Education Training and the Arts)
- Agribusiness Gateway Schools Project to attract and retain young people to primary industry careers by providing pathways through six to eight schools into industry and tertiary education (in partnership with schools and the Department of Education, Training and the Arts)
- working with industry to develop solutions for skills and labour shortages impacting on regional agriculture industries including a skills strategy for Bundaberg and Inland Burnett, a skills strategy for the Atherton Tableland (in partnership with the Department of Education Training and the Arts) and the targeted industry initiative (funded by FarmBis)
- identifying gaps in training, including whether new tertiary courses are needed
- the transfer of agricultural colleges to DPI&F on 1 July 2008 to improve accessibility to training and linkages between education providers and industry.

Genie: granting the wishes of our livestock industry

A new forage oat variety called Genie was 'let out of the bottle' in October 2007, offering livestock producers significant economic benefits due to its high yield and increased resistance to leaf rust—the main disease affecting forage oats. Around 450,000 hectares of forage oats are planted each year as they are the main source of feed for many farming operations over winter.

Leaf rust is the most serious disease affecting forage oats, reducing yield and quality, with crop losses estimated in excess of \$35 million annually when the disease is present. Genie has partial resistance to leaf rust and significantly restricts the spread of disease within the crop. Genie also has exceptionally high yield, consistently producing 10-15% more forage than most other commercial varieties. This improves the productivity of cattle and sheep dryland grazing systems, with the benefit to industry estimated at \$120 million annually.

Genie was bred by the plant breeding team at the Leslie Research Centre with funding support from the Meat and Livestock Corporation, and is available to farmers through DPI&F's commercial research and development partner, Heritage Seeds.

DPI&F is investing in the future of careers in primary industries through its Rural Skills, Training and Labour Initiative.



Workforce plan to address Bundaberg horticulture skill shortages

A poor image of farming as a career path, low wages, poor workforce management practices and low staff retention rates were just some of the issues contributing to a major skill and labour shortage in the Bundaberg region's growing production horticulture sector.

To help local businesses attract, develop and retain a highly skilled workforce, DPI&F worked with representatives from the fruit, vegetable, nut and herb industries in the Bundaberg, Isis, Kolan and Burnett shires to identify possible solutions. This has led to the formation of the Bundaberg Horticulture Workforce Development Plan in partnership with the Department of Education, Training and the Arts and industry. The plan outlines clear actions industry will take to address skill and labour shortages with support from the Queensland Government and local service providers.

Key strategies to build a skilled rural workforce in the Bundaberg production horticulture industry include:

- enhancing employer knowledge of workforce recruitment, management and development, as well as the availability of services that can help improve return on labour investment
- enhancing the business management, leadership and supervisory capacity of industry
- enhancing the technical and operational skills of people working or intending to work in the industry
- promoting career opportunities and liveability offered by the Bundaberg region
- developing collaborative processes and networks for employment, training and workplace policy, and service delivery
- ensuring training providers have capacity to develop relevant programs which meet current and emerging industry needs.

While the plan focuses on long-term solutions over the next five years, implementation began in 2008 with strong cadetship and schools-to-industry programs already underway.



Reversing the drought of young science talent

In an effort to entice more talented young people into agricultural science careers, DPI&F launched the 'Revolutionary Science' forum attended by 600 local high school students as part of Queensland's Primary Industries Week in May 2008.

An alarming decline in the number of agricultural and food science graduates means there is currently more jobs than talented young people to fill them. A national study by the Australian Council of Deans of Agriculture says universities are producing less than half the number of graduates needed, with annual demand being around 2,000 graduates compared to the actual 750 graduates.

The 'Revolutionary Science' forum encouraged students to explore career opportunities through DPI&F's graduate recruitment program and annual science scholarship scheme, as well as traineeships, industry placement, work experience, short-term project work and volunteer work. There were also presentations and displays from young and talented DPI&F scientists demonstrating how agriscience can make a real difference to what we eat, grow in our backyards and sell worldwide.

With the world in the middle of a food crisis that could last for a decade, along with ongoing challenges such as drought, floods and overseas competition, the demand for skilled agricultural and natural resource management workers is expected to rise by 36% over the next six years.

Toowoomba students explore the wonder of science

Flying spore trapping, air quality testing and sniffing out chemical residues were all on show at the agricultural science feature of the Toowoomba Siemens Science Experience, held in January 2008. A total of 25 students from Queensland and New South Wales visited DPI&F's Toowoomba regional office and Leslie Research Centre where staff demonstrated the wonders of scientific research and development.

Aimed at students entering Year 10 in 2008, the program encouraged students to explore aspects of science, engineering and technology and consider study in these areas in upper secondary school and university. Each program was designed to provide students with an interest in science with the opportunity to engage in a wide range of science activities under the guidance of scientists who love their work.

The Toowoomba Siemens Science Experience was coordinated by the University of Southern Queensland (USQ) with support from DPI&F, Education Queensland and Rotary and Young Scientists of Australia. The National Coordinator for Siemens Science Experience was impressed to see the involvement of an organisation external to the university and believes it is the first time this has happened in the national program. Involvement by DPI&F in this type of event continues to strengthen linkages and relationships with USQ and inspires young people to choose a career in science.



Future directions

Extension for the next generation

Turning research into practical outcomes for primary producers plays a critical role in achieving DPI&F's business outcomes. A new direction for DPI&F's extension services was announced in May 2008 to drive change over the short and long-term, to deliver profitable primary industries on a sustainable basis.

Called 'Next Generation Extension', the new market-driven framework will provide modern, targeted, flexible and adaptive services at critical steps along supply chains, to maximise profitability and sustainability for enterprises and landholders. The supply chain will be evaluated when determining where DPI&F will invest its resources to ensure best impact on producers. The innovative framework will:

- enable enterprises to innovate by using Queensland's smart science to create new high-value products that meet changing consumer demands
- help enterprises change their on-farm and supply chain practices to meet constantly changing environmental and consumer expectations using new technologies
- help enterprises to network along the supply chain to vertically and horizontally integrate services and production, allowing entrance to larger and international markets
- use the latest information technology to keep enterprises abreast of changes in markets and competition, technology and the environment
- focus on services that enable enterprises to adapt their products and capitalise on new opportunities
- provide biosecurity services to ensure market access for Queensland products, help landholders with pest and weed management, and increase the broader community's awareness and acceptance of biosecurity issues.

To cater for the diverse needs and locations of Queensland's landholders, the department's products and services will be delivered through multiple channels, including face-to-face on-farm and workshop discussions, group interaction, overseas trade missions and access to information online, in print and on CD/DVD.