Crops

Horticulture crops

Fruit and nuts

Forecast

The total gross value of Queensland's fruit and nut production in 2007–08 is forecast at $1.095 billion, which is 12% higher than 2006–07 and 39% higher than 2005–06.

Analysis

The gross value of **banana** production is forecast at $450 million in 2007–08, which is 13% higher than 2006–07. While still affected by supply variation due to the replanting of large areas following Cyclone Larry, production volumes are steadily returning to normal. At the time of writing in mid-August, production is relatively low due to lingering effects from Cyclone Larry on production cycles, and cool weather in June. However, industry expectations are that good prices will be maintained, a trend evident before the cyclone.

The gross value of **strawberry** production is forecast at $140 million in 2007–08, which is 17% higher than 2006–07 and 2005–06. Prices have remained high, and although they are expected to fall in the near future, prospects for 2007–08 are positive.

The gross value of **mandarin** production in 2007–08 is forecast at $95 million, which is 6% higher than 2006–07. Dry weather reduced the crop and that was compounded by rain damage to late Imperials, but prices have been higher than anticipated.

Prices for mid-season varieties in July were low as Imperials were imported from southern states, due to an apparent preference by supermarkets for that variety. As at mid-August, a reasonable season for Murcotts is expected with strong export markets (mainly to China). However, if good rains are not received soon, production forecasts may be downgraded.

The gross value of **mango** production is forecast at $65 million in 2007–08, which is 19% lower than 2006–07. Mangoes show a biennial bearing pattern, and 2007–08 is expected to be a 'low' year. However, following a cool winter, there are signs of higher than expected flowering so production may be better than originally expected. Subsequent weather conditions could have a significant effect on fruit set, and at the time of writing in mid-August, it is too early to be fully confident of predictions.

The gross value of **avocado** production is forecast at $65 million in 2007–08, which is 13% lower than 2006–07. Avocado prices fell sharply towards the end of the 2006–07 financial year, and increased production in 2007–08 is expected to be offset by continuing low prices.

The gross value of **pineapple** production is forecast at $65 million in 2007–08. This is $25 million and 63% higher than DPI&F's final forecast for 2006–07. We now believe that we have been underestimating the value of the market for fresh pineapples due to increasing sales of sweet hybrids. It is likely that the gross value of pineapple production in 2006–07 was closer to $60 million. This means that the fresh fruit segment now makes up two thirds of the value of pineapple production.

The rapid increase in the production of hybrids and consequent increase in sales of fresh fruit has meant diversification of supply chains, complicating data collection on volumes traded, so some caution is needed in interpreting these data. It appears that imported pineapples have had minimal market impact, and there is considerable potential for the value of the fresh pineapple industry to increase further in the near future.

The gross value of **apple** production is forecast at $45 million in 2007–08. This is 29% higher than DPI&F's revised forecast of $35 million for 2006–07 but the same as DPI&F's original forecast for the year. The 2007–08 forecast is based on expectations of similar yields to 2006–07 and maintenance of current good prices.

The gross value of **macadamia** nut production is forecast at $25 million, which is 38% less than 2006–07. This has resulted from rapidly increasing world production and the high Australian dollar leading to massive falls in prices. World production is set to continue to increase significantly, and while lower prices may stimulate consumption, the industry is working to develop new markets and further increase demand.

The gross value of **table grape** production is forecast at $40 million in 2007–08. Production is expected to be similar to that in 2006–07; at this stage we can only assume that prices will also be similar. Production is, however, down 10% on that reported by the Australian Bureau of Statistics for 2004–05.

Table grapes are a new crop for *Prospects* this year, the industry having grown rapidly in recent years. The main varieties are Menindee seedless, Flame Seedless and Red Globe. Queensland table grapes are early season, with 90% harvested between October and December. The major production areas are around Emerald, Mundubbera and St George, with recent expansion into the Burdekin and Mareeba districts.

Developing superior mangoes

Mangoes are an important fruit crop in Queensland, and Queensland's mango industry has significant potential for domestic and export market development. However, in order to survive and prosper against increasing international competition, the industry must make continual improvements to its productivity and product differentiation. Responding to this challenge, DPI&F scientists have adopted an integrated approach to mango industry development, with mango breeding an integral part.

Traditional breeding is a long-term activity with a new variety taking up to 25 years to develop. A major focus for DPI&F is to increase the efficiency and effectiveness of the breeding program. DPI&F breeding programs released several successful mango varieties. In the early 1990s, R2E2 was released and is now the second most popular variety in Australian domestic and export markets.

In late 1990s, DPI&F and a mango grower partner released two varieties to OneHarvest, a Queensland-based food company with global commercialisation rights. OneHarvest registered the trademark Calypso as the marketing name for these mangoes. The company is negotiating production sites in the northern hemisphere to supply the mango all year round. OneHarvest predicts that 20% of 2007–08 Calypso production will be exported.

Since 1994, DPI&F has participated in the Australian National Mango Breeding Program to continue developing new mango varieties. In the 1990s, 1800 hybrids were developed and evaluated, and six elite lines were selected for their potential as commercial varieties. These are undergoing regional evaluation in the major Australian mango districts and are likely to be the source of the next new Australian mango.

To improve the efficiency of breeding and allow faster development of new varieties, DPI&F's Mango Genomics Initiative is developing molecular markers to investigate the genetics of mango flavour, skin colour, disease resistance and the links between preferred fruit flavour and the flavour components in mango. The genomics initiative is also investigating tree architecture genes and molecular markers to improve production and harvesting through dwarf trees. Molecular markers will be critical tools in ensuring rapid development of world class mango varieties.

To position mangoes as a 'health food for the future', DPI&F is also studying the health effects of purified components and whole fruit extracts, particularly to assess their potential to protect against cancer and cardiovascular diseases. Mangoes contain a large number of unique potentially health-benefiting compounds (phytonutrients). Their presence can be used to promote the nutritional value of current varieties as well as guiding the selection of future varieties that have enhanced levels of these compounds.

DPI&F anticipates breeding a suite of mango varieties—for example, a red-fleshed 'super' mango for the wellbeing market; a new, more productive Kensington Pride for the domestic market; next generation mangoes that can fit within the Calypso brand; and novel products for niche export markets.

The consumer preference and sensory analysis data that DPI&F scientists are producing will be used to develop targeted product specifications and ensure that DPI&F-bred mangoes are attractive and great tasting as well as profitable to produce.

Vegetables

Forecast

In 2007–08, Queensland's gross value of vegetable production is forecast at $770 million, which is 5% lower than 2006–07 and 4% higher than 2005–06.

Analysis

Unseasonable winter weather has made 2007 a tough growing year in the Dry Tropics. The second wettest June on record and one of the coldest Julys ever has had a significant impact upon vegetable production in the region. Water shortages in the south are continuing to exert an influence on production volumes; however, producers with access to water have been able to make up some of this shortfall.

Tomato GVP for the 2007–08 financial year is forecast at $205 million, which is 3% higher than 2006–07 and 24% higher than 2005–06. One-in-20-year adverse conditions in Australia's southern tomato production regions led to significantly higher tomato prices towards the end of the 2006–07 financial year. While expected to remain firm, prices will moderate from recent high levels as production comes back on line in southern Australia. Area planted in the north remains unchanged, however unseasonably cold and wet conditions will result in a lower and more variable production volume.

The gross value of **capsicum** production in Queensland is forecast at $95 million, which is 5% lower than 2006–07 and 19% higher than 2005–06. The yield and quality of production will be reduced in northern regions due to poor weather conditions. Late winter rains will increase the area planted in southern regions. Prices are expected to rise slightly in response to lower volumes of production.

Queensland's gross value of **mushroom** production is forecast at $55 million, which is 10% higher than 2006–07 and 22% higher than 2005–06. Assuming a return to average seasonal conditions, the quality of wheat straw available for compost is expected to be higher in 2007–08. Higher quality compost increases the productivity of mushroom production and the volume harvested is expected to increase as a result.

Queensland's gross value of **potato** production is forecast at $40 million, which is the same as 2006–07 and 14% higher than 2005–06. Water shortages are continuing to influence the volume of potato production in South Queensland. Anecdotal evidence suggests producers lacking secure water supplies are moving into vegetables with a short rotation, such as lettuce. Plantings in the north occurred later than usual due to unseasonably high rainfall. Queensland producers have not escaped the frost that impacted much of Australia's potato producing regions. Losses probably won't be as severe as anticipated, but production in the north will be down. Potatoes are therefore likely to be in limited supply over the Christmas period. Fresh market prices are expected to remain firm due to the reduced supply.

Lettuce production in Queensland in 2007–08 is forecast at $40 million, which is the same as 2006–07 and 11% lower than 2005–06. Lettuce prices have risen significantly from the low point experienced last year. Higher prices are expected to ease over the coming financial year. Continued water shortages have constrained production for many growers. However, anecdotal evidence suggests higher prices have led to increased lettuce plantings where water is available.

The gross value of **beans** produced in Queensland is forecast at $40 million, which is 11% lower than 2006–07 and 2005–06. Unseasonably cold and wet climatic conditions are expected to result in reduced bean yield and quality in the first half of the financial year. Assuming normal summer rains, production is anticipated to increase to more usual volumes. The significantly higher price currently being received for beans is expected to moderate as production volumes recover.

The gross value of **sweet corn** is forecast at $40 million, which is 33% higher than 2006–07 and 2005–06. Cold and wet conditions in the north are expected to result in production volumes similar to that following Cyclone Larry.

Watermelon production in Queensland in 2007–08 is forecast at $35 million, which is 13% lower than both 2006–07 and 2005–06. Cold and wet conditions in the north are expected to result in a significant decline in the volume produced throughout this region. A lack of water has reduced the area planted by some producers in the south; however, producers with access to water are expected to increase overall volumes of production.

The gross value of **rockmelons** is forecast at $35 million, which is 22% lower than 2006–07 and 2005–06. Cold and wet conditions in the north are expected to result in a significant decline in the volume produced throughout this region.

Lifestyle horticulture

Forecast

The gross value of production (GVP) in lifestyle horticulture industry for 2007–08 is forecast at $1.2 billion, marginally below DPI&F's final forecast for industry activity in 2006–07. This is the second consecutive year that value of the lifestyle horticulture industry is forecast to decline, following a number of years of strong growth.

- The total production value of nurseries, turf, cut flowers and foliage is forecast at $545 million. **Nursery and turf production** gross values are forecast at levels similar to 2006–07, while the gross value of production of **cut flowers and foliage** is forecast at $105 million, which is 9% lower than 2006–07.
- On the service side, total value is forecast at $660 million. **Retail nursery and landscape** gross values are lower than 2006–07 and are forecast at $155 million and $435 million respectively. **Grounds and maintenance** and **indoor plant hire** gross values are forecast to increase on the previous year with gross values of $299 million and $44 million respectively.

Readers should note that DPI&F will soon be undertaking a new comprehensive survey of the Queensland lifestyle horticulture industry in conjunction with Queensland Treasury. This survey will build on the original survey conducted in 2001 and will help to improve the regular forecasts of activity in this industry provided in *Prospects*.

Discussion

As outlined in the June 2007 edition of *Prospects update*, the ongoing drought and the continuing roll-out of urban water restrictions in the major population centres of South East Queensland have stifled lifestyle horticulture industry activity, particularly since the introduction of Level 3 water restrictions in June 2006.

A recent review of total garden market sales in Australia reported that Queensland was the only state in which the lifestyle horticulture did not record positive growth over the last year. This outcome was primarily attributed to the water restrictions in urban areas of South East Queensland and the ongoing negative publicity regarding the use of town or reticulated water on gardens.

Despite recent rainfall in South East Queensland, Level 6 water restrictions are still expected to be introduced by the end of 2007. The most recent Bureau of Meteorology (BOM) forecasts indicate the likelihood of a weak La Niña event in 2007–08. While this suggests a slightly better than even chance of above-average summer rain in the south-east, it does not imply high rainfall events needed to replenish aquifers and water supplies.

It is likely that the introduction of Level 6 restrictions will have a further negative impact on lifestyle horticulture industry activity (even if only via further negative public perceptions about using town water on gardens), as consumers continue to strive to meet the Queensland Water Commission's 'Target 140' initiative throughout the warmer months of the year.

The industry is currently collaborating with a number of state government agencies to promote alternative water sources (such as tanks or grey water), as well as more water efficient gardening practices to counter negative public perceptions of gardening. Clearly, there are also opportunities for the industry to take advantage of the increasing consumer interest in retro-fitting gardens to make them more water efficient.

Many industry participants are concerned, however, that the industry has permanently lost market share of consumer discretionary and leisure spending, and that the demand for lifestyle horticulture products and services will not fully recover to pre-drought levels once historic rainfall patterns are restored in South East Queensland. Recent research conducted in Victoria appears to support this view.

Demand and expenditure patterns are also changing with increased consumer preference for hard-scapes (landscape construction activities, such as the construction of structures, fences, retaining walls, drainage and irrigation, hard surfaces) rather than green life (ornamental plants and turf). There is also a distinct consumer demand shift towards more water-efficient plants and horticulture services, and away from more traditional plants and turf grass.

Total nursery sector activity gross value (production and retail) is forecast at $545 million in 2007–08, which is 2% lower than 2006–07.

DPI&F has separated production and retail nursery GVP data in this edition of *Prospects,* based on information provided by the nursery sector. However, it is expected that the new survey of the lifestyle horticulture industry referred to earlier will improve future analysis of the different segments of the nursery sector once the new data become available.

Production sectors

The gross value of **nursery production** is forecast at $375 million in 2007–08, which is the same as 2006–07, and is expected to remain stable in 2007–08.

Continued demand for seedlings and other planting stock by the horticulture, forestry and land rehabilitation industries continues to sustain many production nurseries in South East Queensland by offsetting the ongoing difficult trading conditions in the market for ornamental plants.

The gross value of **turf production** is forecast at $65 million in 2007–08, which is the same as 2006–07, suggesting that the demand for turf has stabilised following a number of years of decline. The turf production sector has experienced very difficult trading conditions over the last few years and the gross value of production has virtually halved since the peak of $125 million in 2003–04 and 2004–05.

The gross value of production of **cut flowers and foliage** is forecast at $105 million in 2007–08, which is a decline of 9% since 2006–07. Ongoing difficult trading conditions for native flower exports to the key Japanese market continue to influence overall sector expectations.

Exports of cut flowers continue to be negatively impacted by the sustained high value of the Australian dollar against the Japanese yen, resulting in decreased demand and reduced margins for producers. The exit of industry members as a result of the drought reported in the June 2007 edition of *Prospects update* is expected to continue into 2007–08, albeit at a more modest rate. The native cut flower sector is intending to improve their marketing, product promotion and industry development programs over the next twelve months in an effort to address the current problems in the Japanese market.

The domestic cut flower and foliage market remains steady with suggestions of perhaps a slight increase in volumes, although prices generally remain unchanged. A drop in the production of *traditional* flower types during the past quarter, due to the longer than usual cold period this winter, has been largely offset by slightly higher prices within the market due to the reduced supply. Overall, this segment of the cut flower and foliage sector is expected to remain unchanged throughout 2007–08.

Service sectors

The value of **retail nursery activity** is forecast at $155 million in 2007–08, which is 5% lower than 2006–07. Consumer demand for ornamental plants continues to decline as consumers postpone or abandon green life purchases. Recent good rainfall in South East Queensland provides some early indications of more positive trading conditions throughout spring; therefore, the retail segment expectations may improve as 2007–08 progresses.

The value of **green life-related landscape** sector activity is forecast at $435 million in 2007–08, which is 3% lower than 2006–07 and $115 million below the peak recorded in 2005–06 before the onset of the water restrictions in South East Queensland.

Industry evidence indicates that some large commercial developers are continuing to delay or substitute the green life landscaping components of major projects due to concerns about the significant water-related costs involved in establishing large areas of plants and turf.

The demand for domestic green life-related landscape installation and maintenance also continues to decline as consumers switch discretionary expenditure to other areas. As reported in the June 2007 issue of *Prospects update*, activity in this segment will continue to remain depressed until South East Queensland experiences substantial rainfall.

The **grounds and maintenance** and **indoor plant hire** sectors are expected to post modest growth in 2007–08, up by 5% and 10% respectively, compared to 2006–07. Underlying strong population growth and expanding urban infrastructure (such as commercial property, housing developments and public open space) continue to be the main drivers of these sectors of the lifestyle horticulture industry.

Table 4. Lifestyle horticulture value 2006–07 to 2007–08

Main industry sectors	2006–07	2007–08 (f)	2007–08 compared with 2006–07
	$m	$m	% change
Production sectors:			
Production nursery	375	375	0
Turf production	65	65	0
Cut flowers and foliage	115	105	-10
Service sectors:			
Retail nursery	161	155	-5
Landscape (green life-related activity only)	448	435	-3
Grounds and maintenance	285	299	5
Indoor plant hire	40	44	10
Total lifestyle horticulture	1220	1203	-1.2

Note: Industry sectors derived from the 2001 survey undertaken by DPI&F.

Other crops

Sugarcane

Forecast

The gross value of Queensland's sugarcane production in 2007–08 (i.e. from the 2007 harvest) is forecast at $730 million. This is 32% lower than DPI&F's final estimate of $1.075 billion for 2006–07.

While total sales of the Queensland sugar industry, in raw-sugar equivalent, are expected at $1.114 billion, this section concentrates on the cane farming segment. With industry deregulation, there has been some move to changed pricing options for sugarcane. Nevertheless, the assumption used here is that there is no overall departure from the 65% grower share in the old uniform cane-payment formula.

Analysis

The industry is facing a difficult year. Drought and frosts reduced crop estimates in southern regions of Queensland and winter rains delayed the harvesting season in the north to the extent that some mills had the latest start in their history. Industry expectations are for a 32 million tonne cane crop, which is 3% lower than the final estimate for 2006–07.

Sugarcane smut has been confirmed in an increasing number of regions, but thus far its impact on yields has been marginal. The Honourable Tim Mulherin, MP, Minister for Primary Industries and Fisheries commissioned a review of the spread of, and the appropriate response to, sugarcane smut in January 2007. Based on scientific advice and industry information, Dr David Watson found that the industry is best served by an orderly replacement of susceptible stands with resistant varieties, and that the government's contribution should concentrate on facilitating the release of more resistant varieties.

Based on the New York sugar market and exchange rate forecasts, early-season price expectations for the Queensland industry were in the range of A$250–270 per tonne of raw sugar. In practice, actual sugar prices received should be higher due to the increasing use of hedging and forward selling. For example, in November 2006, CSR reported to have hedged 40% of their crop into 2008 at $369. The declining market caused CSR's average price expectation for the 2007–08 season to be reduced to 'marginally below $300' in September 2007 from the earlier $300–$330 per tonne range.

Queensland Sugar Limited is developing a number of pricing options in addition to conventional pool pricing, and these are made available to canegrowers through their sugar mills. In the Mackay and Proserpine regions, canegrowers can (within specific limits) price some part of their crop through such options that are more closely related to market developments. While the new pricing options can potentially offer higher returns, they also carry a larger risk than pooled prices. Hence, their use is more suited for canegrowers who are knowledgeable about the sugar market and are willing to take some risk.

Global industry situation

Sugar prices have slumped from their 25-year high in mid-2006 and the price is likely to continue being under pressure. Peter Baron, Executive Director of the International Sugar Organization (ISO) expects the market to be oversupplied until 2009, and has 'doubts that the price has hit a bottom'[3]. While the ISO forecast a global surplus of 7.2 million tonnes for 2006–07 in February, this estimate grew to 9.1 million in May. The expected 2.4% growth in world demand is in line with the 10-year average of 2.3%.

The growth in production is coming from Brazil and India. The latter produced 16 million tonnes of sugar just a few years ago; in 2007, it will produce over 28 million tonnes and a crop of up to 33 million tonnes is expected for the following year. This has led to a huge build-up of stocks in India, which is weighing over the market. However, this stock may not find its way into ships for export, as India's infrastructure for export of sugar is not well-developed, and a domestic ethanol mandate may have an effect. Despite this, the government of India has announced a subsidy for exports, an announcement that is receiving scrutiny as to its World Trade Organisation (WTO) compliance.

3 www.moneycontrol.com/india/news/market-edge/intl-sugar-prices-may-lose-further-ground-/07/45/300531

This extra sugar from India will contribute to an expected further growth in oversupply in the 2007–08 marketing year; the US Department of Agriculture (USDA) forecast 163.3 million tonnes global production in raw value in May 2007, which is 2 million tonnes above their revised 2006–07 estimate. Consumption is expected to grow 513 000 tonnes to 149.4 million tonnes. Overall, exports are forecast to grow by 2.1 million tonnes to 50.8 million tonnes, while ending stocks are to grow by 6.1 million tonnes to 45 million tonnes. The EU is expected to become a net importer in 2007–08.

Russia may relinquish its position as the world's largest sugar importer, as the Russian government has started a program to revitalise their domestic sugar industry. Beet plantings are up in 2007, and a proposal to increase the seasonal import tariff, in concession to the domestic industry, is being considered at the end of September. A bilateral deal with the Ukraine may see the Ukraine replacing Brazil as the main source of Russian sugar imports.

Although the domestic US sugar market is slightly under-supplied in the USDA's estimates for fiscal year 2008 (1 October 2007 to 30 September 2008), this is expected to change radically after 2008 when Mexico gains free access under the North American Free Trade Agreement (NAFTA). In anticipation, recent legislation prepared the ground for the diversion of sugar surpluses to biofuel production. A similar way to dispose of sugar is also being considered in the EU.

Sweet success for sugar champion

Isis-based BSES officer Judy Plath has won the Department of Primary Industries and Fisheries' 2006 Elaine Brough Award.

The agricultural scientist's work has been instrumental in assisting the sugar industry to become more sustainable and prosperous.

Judy won the award for her dedication and positive vision for the future of the sugar industry and her work in the grains and horticulture industries.

Employed as a Rural Water Use Efficiency and Change Management Extension Officer with BSES and as a FutureCane industry champion, Judy has achieved great success in partnership with sugar growers in Childers and Maryborough.

As a member of the Isis Target 100 team, Judy has worked hard to ensure the sugar industry is able to adapt to change, improve sustainability and increase productivity and profit for growers.

The Isis Target 100 team has also tasted success with the soybean industry, which has increased from 500 tonnes of stockfeed quality beans in 2004 to a 2000-tonne harvest worth over $650 000 in 2006—70% of which is food-grade quality.

The team also has worked in partnership with Bean Growers Australia to develop a local navy bean industry to supply the SPC baked beans market.

Judy used her bursary to leverage funds from other agencies and take a group of growers on a major study tour to the United States to study the production of high-quality food-grade soybeans. The tour was designed to improve growers' understanding of the soybean industry and how to broaden the consumer base by developing other soybean products.

Cotton

Forecast

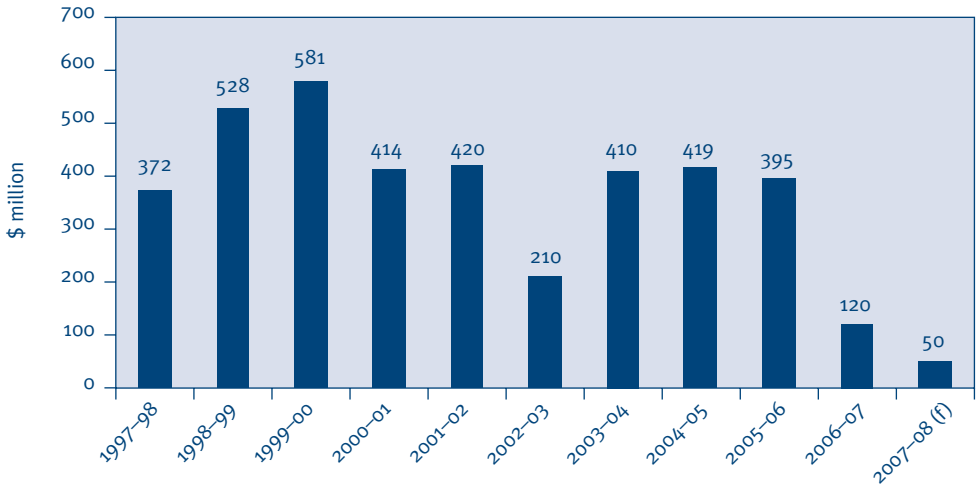
In 2007–08, the gross value of cotton production (including the value of seed) in Queensland is forecast at $50 million, which is 58% less than in 2006–07 and 87% lower than 2005–06.

The production of Queensland cotton has been falling steadily since 2005–06 with lint production in 2007–08 forecast to fall by another 66% to 95 000 bales. Plantings are expected to be down 63% from the previous year due to the continuing drought conditions. However, for those who do plant cotton and achieve high yields, the returns will be lucrative. Cotton prices have been soaring on the futures markets, as the US reports the lowest cotton harvest on record and China's domestic stocks dwindle.

Analysis

The gross value of production is forecast to be the lowest in 10 years, as the ongoing drought causes water supplies to dwindle, limiting the industry's ability to irrigate and plant. The significant decline in GVP in 2002–03 was also due to drought-related water scarcity, which highlights the risk associated with producing such a water-intensive crop under highly variable water conditions.

Figure 11. Gross value of cotton production 1997–08 to 2007–08



(e) Estimate.
(f) Forecast.

Source: DPI&F.

Industry challenges and opportunities

Water scarcity will be the main issue affecting cotton production in 2007–08. Last season, most cotton-growing areas only received about 25% of normal summer rainfall, which has resulted in lower soil moisture and water reserves. No water will be allocated for cotton irrigation in most areas, as dams are at very low levels, and river and overland flows are virtually dry. Figure 12 shows the current dam levels, which are lower than at the same time last year, apart from Fairbairn Dam. Low water security in towns has directed water away from cotton irrigation. In August, Australia's largest cotton farm, Cubbie Station, sold a 200 megalitre allocation to the Balonne Shire Council in order to secure water for St George until the end of the year.

Some cotton farmers have opted to use remaining water on a winter crop (mainly wheat) rather than wait until cotton's September–October planting period and risk losing it to evaporation. Unless there is significant rainfall in the catchments to restore dam levels and overflows to a point where irrigation activities can recommence, the area planted to cotton will be low. Producers will tend not to plant unless there is guaranteed water to ensure high yields.

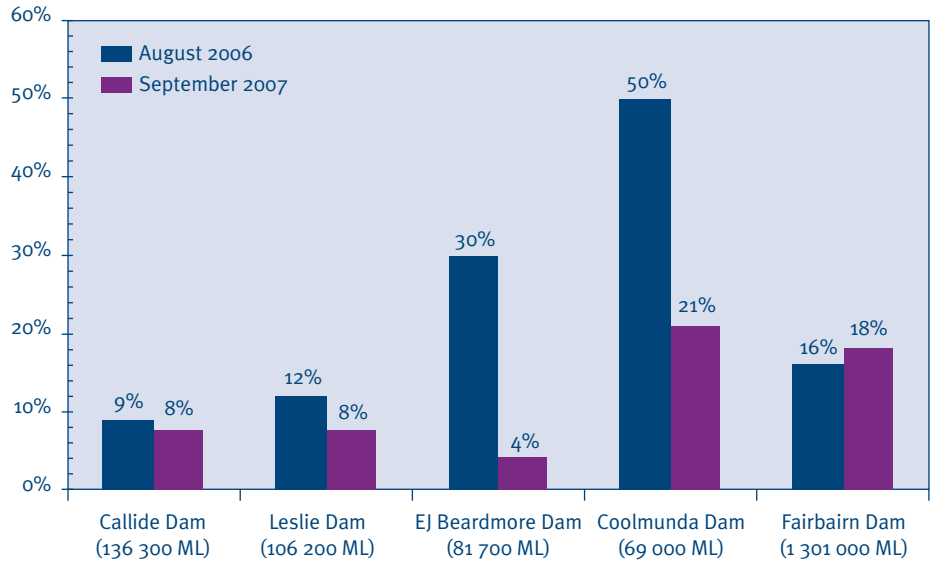
It is anticipated that the higher relative price and lower water requirements of alternative crops such as sorghum, oats and chickpeas will reduce area planted to cotton. The reduction in cotton production has implications for the infrastructure of the industry and rural communities. As ginning facilities are under-utilised and employment dwindles, the capacity of the industry to produce as much in the future may decline.

Water-use efficiency is of great importance to Queensland cotton growers. Water-efficient practices being used by Queensland producers include collecting and recycling water a number of times, lining dams and channels to reduce evaporation, and converting to overhead sprinklers and drip irrigation.

In August 2007, the Australian Government announced a $12 million funding package to improve flood water management and irrigation efficiency in the cotton industry. The main benefits of the package are deemed to be improved measurement and monitoring of evaporation and seepage losses from on-farm storages and the development of best management practices. The package should assist in improving the ability of producers to manage drought conditions in the future.

As well as improving water-use efficiency through management practices, the Cotton Research and Development Corporation, the Cotton Catchment Communities Cooperative Research Centre, and Monsanto have undertaken preliminary trials that have indicated the potential for genetically-modified crops to provide greater water-use efficiency and yield responses, even under water-stress conditions. It is hoped that a drought-resistant crop will be available on the market within the next 10 years.

Figure 12. Status of major water storages in Queensland's cotton growing regions



Source: Queensland Sunwater

Biloela scientist wins Australian Cotton Industry Award

Senior research scientist Paul Grundy has been named 'Young Achiever of the Year' at the Australian Cotton Industry Awards held in Narrabri on 7 August 2007.

The award, sponsored by Elders, recognises people under 35 with the commitment and vision to contribute to the future of the cotton industry.

Paul credits his success to his varied and challenging role within DPI&F.

'I've been fortunate to work as a part of some pretty diverse and talented teams that involve a range of external industry partners,' he said.

Paul worked for more than seven years as an entomologist at DPI&F's Biloela Research Station, focusing on research, extension and field applications of integrated pest management tools.

He has extensive expertise in management strategies for silver leaf whitefly and has played an instrumental role in managing industry outbreaks.

He also conducted work examining the potential use of 'attract and kill' technology to help prevent the development of Helicoverpa resistance to Bollgard cotton.

Over the last few seasons, Paul has been involved in research into cotton in the Burdekin and recently took on leadership of a significant new project funded by the Cotton Catchment Communities CRC to develop benchmarks for cotton production in the region.

Other major field crops

The gross value of production of **chickpeas** in 2007–08 is forecast at $40 million, which is $5 million higher than 2006–07 despite lower average prices.

The area planted to chickpeas in Queensland is forecast to increase by 40% in 2007–08 from the previous year's drought-affected crop. Early winter rainfall in Central Queensland influenced some farmers to plant late-sown dryland chickpeas. Both the early-sown and late-sown crop in Central Queensland will have benefited from rain in mid-August, with yields in this region expected to be slightly above average. South Queensland chickpeas were late planted into ground with little soil moisture. Reasonable August rain has improved the potential for average yields from this region.

The larger area planted to chickpeas has increased the production forecast for 2007–08 to over 77 000 tonnes despite variable yield expectations across the state. This production forecast is 50% higher than the estimated production in 2006–07.

In 2007–08 the average price for chickpeas is forecast to be $535 per tonne, which is a decrease of 17% from the average price in the previous year. The lower price is partially due to very large plantings of chickpeas in New South Wales.

Peanuts gross value of production in 2007–08 is forecast to be $40 million, which is more than double the final DPI&F forecast of $15 million for 2006–07.

The increase in GVP is due to a forecast increase in area planted by 58% (given average seasonal conditions) over the moisture-affected crop in the previous year. Some regions will be more dependent on rainfall in the coming months for a 2007–08 peanut crop than other regions. Winter rain has provided a reasonable outlook for peanuts in South Queensland and North Queensland, while additional rain will be required for other plantings throughout the state.

Yields will be variable statewide, depending on rainfall and irrigation entitlements. Given average seasonal conditions, Queensland production of peanuts is forecast to be over 50 000 tonnes.

In 2007–08, peanut prices are forecast to remain at the high levels of 2006–07 influenced by the world peanut market. Chinese demand for peanuts is growing rapidly, with markets in Europe, the US and Australia all growing, although more slowly. Poor 2006–07 peanut crops in many countries has limited available supply, as has the influence of the US ethanol industry, which has encouraged growers in Argentina to plant maize rather than peanuts. It is forecast that the average peanut price will be around $765 per tonne.

In 2007–08, the gross value of production of **soybeans** is forecast to be $10 million, which is double the value in 2006–07.

The forecast increase in GVP is due to an increase in area planted to soybeans in 2007–08 compared to the previous year. Assuming that further rainfall is received in addition to rain in mid-August, production of soybeans is forecast to be over 20 000 tonnes. Water availability will be the main determinant of area planted and the subsequent production.

It is expected that the price increases during the 2006–07 year will be sustained during this 2007–08 year, with the average soybean price forecast to be $565 per tonne on a delivered Brisbane basis.

Winter cereal grains

Wheat

Forecast

The gross value of production of wheat in 2007–08 is forecast to be $250 million, which is 4% higher than 2006–07 but 9% lower than 2005–06.

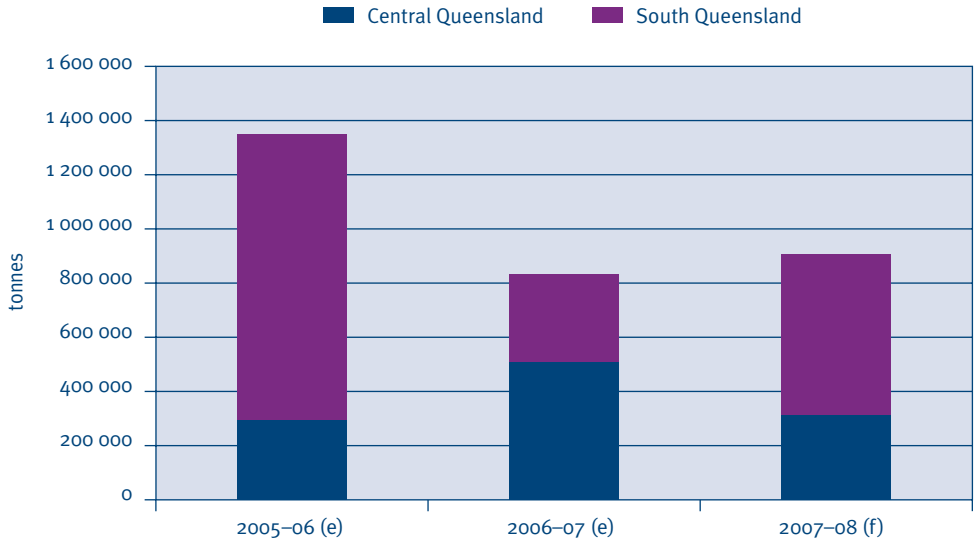
Analysis

Gross value of wheat production is forecast to increase in 2007–08 over the 2006–07 season, due a slightly larger area planted to wheat and therefore higher production.

Area planted to wheat in Central Queensland is slightly lower than the previous year, while area planted in South Queensland is larger but still lower than in good seasons. Some Central Queensland crops were dry planted, then received average rainfall after planting, while other crops were late planted after this rain. The majority of South Queensland crops were planted with limited planting rain into soil with little subsoil moisture. Yields are variable across the state, due to differences in subsoil moisture at planting and patchy rainfall during early crop growth. Reasonable rainfall received in mid-August across most of Queensland's wheat growing regions has relieved the moisture stress affecting parts of the crop and has sustained the average yield forecast.

Figure 13 shows the slightly higher forecast production in 2007–08 over 2006–07; however, the production by region is more significantly different, with South Queensland contributing a larger percentage of the forecast crop, as is traditional in more normal seasons.

Figure 13. Queensland wheat production by region 2005–06 to 2007–08



(e) Estimate.

(f) Forecast.

Source DPI&F.

International wheat prices have been very strong due to high world demand for grain, production concerns in many grain producing countries, and ethanol production from maize in the United States. Domestic wheat prices are expected to remain higher than historical average prices, due to these international influences and low grain stocks domestically. It is forecast that the average Queensland wheat price will be $273 per tonne delivered Brisbane or equivalent at other centres.

Barley

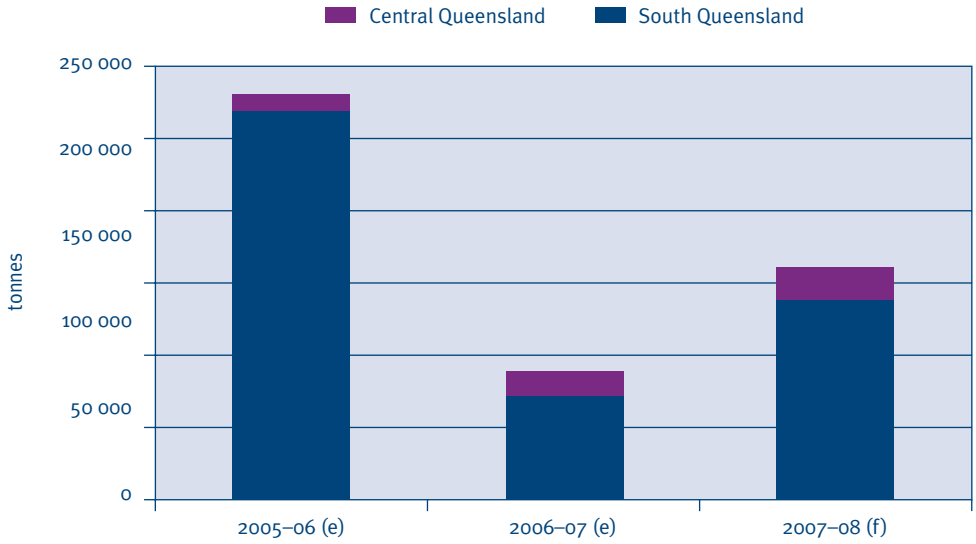
Forecast

In 2007–08, the gross value of barley production is forecast at $40 million, which is 60% higher than the final estimate for 2006–07 but 11% lower than 2005–06.

Analysis

Barley production is forecast to be 83% higher than the final estimate for the previous year. The area planted to barley in both South and Central Queensland is forecast to be 70% more than the final area estimates for the 2006–07 drought-affected crop. However, as shown in Figure 14 the current forecast of 136 400 tonnes is well below the 2005–06 season and also below the five-year average to 2005–06 of 190 000 tonnes.

Figure 14. Queensland barley production by region 2005–06 to 2007–08



(e) Estimate.

(f) Forecast.

Source DPI&F.

Barley yields are expected to be variable across the state due to differences in subsoil moisture before planting and patchy rain during early crop growth. Crop yield expectations were falling throughout South Queensland due to lack of in-crop rainfall; however, reasonable rain in mid-August has saved a large portion of the crop. Nevertheless, the August rainfall came too late for some crops in more marginal areas, which have been grazed or baled, as the yield had declined sufficiently to be uneconomical to continue the crop through to harvest.

Barley prices remain historically high due to low grain stocks domestically, strong domestic and global demand for feedgrains, and grain production concerns in other countries. It is forecast that the average price for barley during 2007–08 will be $277 per tonne on a delivered Brisbane equivalent. This high price is supporting the increase in gross value of barley production. Average prices for feed barley may increase further if seasonal conditions throughout eastern Australia result in a significant reduction of the national grain crop.

Summer cereal grains

Grain sorghum

Forecast

In 2007–08, sorghum gross value of production is forecast at $340 million, which is 84% higher than 2006–07 and more than double the value in 2005–06.

Analysis

The forecast higher GVP for grain sorghum reflects an increase in production due to a greater area planted and better yield.

The area planted to grain sorghum in 2007–08 is forecast to increase by 40% from the previous season. Driving this larger area forecast is the high grain prices due to worldwide demand for feedgrains and grain for ethanol production. Based on the forecast area and yield, production is forecast to be around 1.38 million tonnes, which is double the final estimate of grain sorghum production in the drought-affected 2006–07 season.

However, the larger area planted to grain sorghum and the forecast higher yield and production across Queensland depends on further rainfall before sowing and during crop growth. Rain received in South Queensland has increased the soil moisture profile of some fallow areas; however, due to the previous lack of soil moisture across most of Queensland's cropping areas, further rain is required to achieve the forecast area planted and yield.

The average grain sorghum price for the 2007–08 year, while still high, is forecast to be 9% lower than the high prices in 2006–07. The average grain sorghum price is forecast to be $246 per tonne delivered Brisbane in 2007–08, influenced by both lower national supply and higher national demand for feedgrains. Domestic supply of feedgrains has been reduced due to poor wheat, barley and sorghum crops in the last few seasons throughout eastern Australia, which has reduced the stocks of grain on hand by end-users and at bulk grain warehouses. In addition, domestic demand for feedgrains has continued to grow, from both the intensive animal production industries and by future grain ethanol production plants. International supply of feedgrains has also been lower due to poor crops in many countries and the large volume of maize being consumed by fuel ethanol production in the United States. It is expected that international and domestic demand for feedgrains will maintain the high grain sorghum prices throughout 2007–08.

Maize

Forecast

Maize gross value of production for 2007–08 is forecast at $50 million, which is double the value forecast for 2006–07 and 43% higher than the 2005–06 estimate.

Analysis

The area planted to maize in 2007–08 is forecast to increase over the drought-affected crop area in the previous year, assuming average seasonal conditions and irrigation entitlements. Rain received in August across Central and South Queensland has provided some soil moisture for the maize crop; however, further rain will be required for planting and during crop growth.

Production of maize in 2007–08 is also forecast to increase due to the larger area planted. It is forecast that production of maize will be around 197 000 tonnes.

The average price for maize is forecast to ease slightly to $265 per tonne due to increased forecast supply of other feedgrains in 2007–08. However, high demand for all feedgrains by end-users throughout eastern Australia will continue to support the maize price in 2007–08 above the long-term average maize price.

Developing the grains industry

In the next decade, demand analyses indicate an unprecedented opportunity for trade and expansion of Queensland's intensive livestock and biofuels industries. For Queensland's primary producers and agri-industry to capitalise on this growth opportunity, production of feedgrains must be increased significantly and reliability of production improved. Trends to higher world grain prices enhance this opportunity. In Queensland, feedgrain production is currently valued at $300 million per year with sorghum contributing $200 million. On the other hand, climate change threatens future production potential.

Feedgrain use in Australia is estimated to increase from 10.7 million tonnes in 2005–06 to 11.5 million tonnes in 2006–07. The largest increase in feedgrain requirements is expected to occur in Victoria and Queensland (Australian Bureau of Agricultural and Resource Economics report to client, 2007).

DPI&F is well-positioned to support this expansion through its Integrated Sorghum Improvement Program, which has underpinned the development of this industry over the past 30 years. The program has achieved a benefit-to-cost ratio of 20:1 since its inception in 1975, and has returned a benefit to Australia on average of $14 million per annum.

The DPI&F research program involves a core plant-breeding program that integrates recent developments in molecular biology, biotechnology, physiology, agronomy and virtual plant modelling. While much of the research capacity resides within DPI&F, significant links have been forged with key plant scientists at the University of Queensland. In delivering technologies, partnerships formed with commercial seed companies underpin licensing of germplasm to the private sector. All current commercial hybrids contain some material from this program and contribute royalties.

Part of the DPI&F program involves international research and development collaboration with key centres in the USA to discover genes associated with drought tolerance in sorghum. DPI&F scientists have successfully transferred the genes responsible for the 'stay-green' drought tolerance characteristic from an Ethiopian sorghum to Australian lines using conventional breeding techniques. The near complete sequencing of the sorghum genome and physiological studies on stay-green will hasten discovery and application of the responsible genes. Due to the genetic similarity among the world's major cereals, the genes for stay-green identified in sorghum may help improve the drought resistance of wheat, barley, maize and rice crops.

Virtual plant modelling technologies are another key plank of the research program. They enable prediction of the consequences of genetic and management manipulation of sorghum crops, and are being used to help design the novel plant type and management system combinations required for industry expansion. The models have been developed jointly with the University of Queensland and in collaboration with key centres in Europe. The software platforms developed have been licensed to public and commercial users globally.

The growth potential from industries dependent on feedgrains and the associated socioeconomic flow-on could generate up to $300 million per annum return for Australia on strategic research and development investment, with benefits flowing via economic development in regional areas. The combination of advanced scientific skills in genetics, physiology, and modelling required for this research and development is available in Queensland. This positions Queensland to lead this new approach internationally while generating substantial economic benefits nationally.