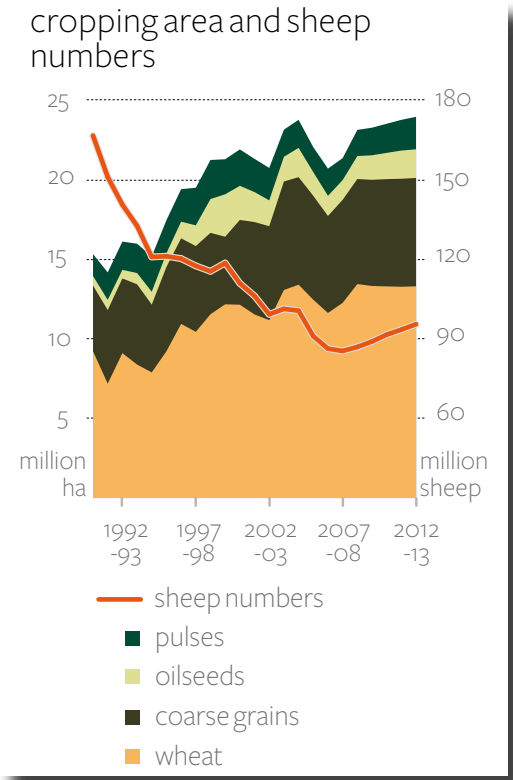
Domestic and global grains outlook

By Leanne Lawrance, David Barrett, Gayathiri Bragatheswaran and Vince O'Donnell, ABARE

THE AUSTRALIAN SCENE

Rainfall over the major grain sorghum growing regions of New South Wales and Queensland was above average in October–December 2007. The favourable rainfall and high prices encouraged a large area to be sown to grain sorghum. Despite floods in January 2008 across parts of Queensland, national grain sorghum production is expected to increase by 80 per cent on last year to around 2.5 million tonnes (mt).

With grain prices remaining high and early seasonal indications looking reasonably favourable, it is forecast that there will be a record area sown to winter crops in 2008–09. Many livestock producers reduced animal numbers during 2007 as drought continued in many parts of Australia. As prices of replacement livestock are likely to be high during 2008, where feasible, producers will be placing more emphasis on cropping in 2008–09 to secure a quicker recovery in incomes.



Taking into account this combination of factors, the area sown to winter crops in 2008–09 is forecast to be around 22 million hectares.

The areas planted to the different winter grain crops will depend on the timing and amount of autumn rainfall, expected returns from each crop, and crop rotational issues for individual growers.

The area sown to wheat in 2008–09 is forecast to be a record 13.4 million hectares, 10 per cent higher than last season. Areas planted to barley, canola and pulses are forecast to increase by four per cent, 10 per cent and almost 20 per cent respectively in 2008–09.

Assuming a return to average seasonal conditions, total winter crop production in Australia is forecast to increase to around 40 mt in 2008–09, nearly double that of 2007–08.

Australia's wheat exports to rise in 2008–09

With increased Australian wheat production in 2008–09, wheat exports are forecast to rise by nine mt. The value of Australian wheat exports is forecast to increase to $4.7 billion – more than double the value in 2007–08. Despite expected changes to wheat export marketing arrangements in Australia, these are unlikely to have any significant effect on the volume and destination of Australian wheat exports, and price received, in 2008–09.

An important change for the Australian wheat industry in the year ahead is the announcement of an end to current 'single desk' export marketing arrangements. The Minister for Agriculture, Fisheries and Forestry has indicated that from July 2008 there will no longer be an export wheat monopoly. In the case of bulk wheat exports, the Minister currently is responsible for approving (or rejecting) applications to export on a case by case basis.

The export of wheat in containers and bags was deregulated in August 2007. But the quality of the wheat must be certified by an Export Wheat Commission accredited organisation.

Australian coarse grains exports to increase

An expected larger harvest means that total coarse grains exports are forecast to increase by 83 per cent in 2008–09, with the bulk of the increase being shipments of barley, which are forecast to increase by 80 per cent to around five mt. The value of Australia's exports of coarse grains is forecast to rise by 72 per cent to around $1.8 billion, reflecting the larger volumes shipped and continued relatively high prices in the global market.

Lower grain prices in Australia

In response to the forecast dramatic improvement in production, grain prices in Australia are likely to fall in 2008–09 as drought induced price premiums in the domestic market disappear. Nevertheless, prices are expected to remain relatively high. The pool return for Australian

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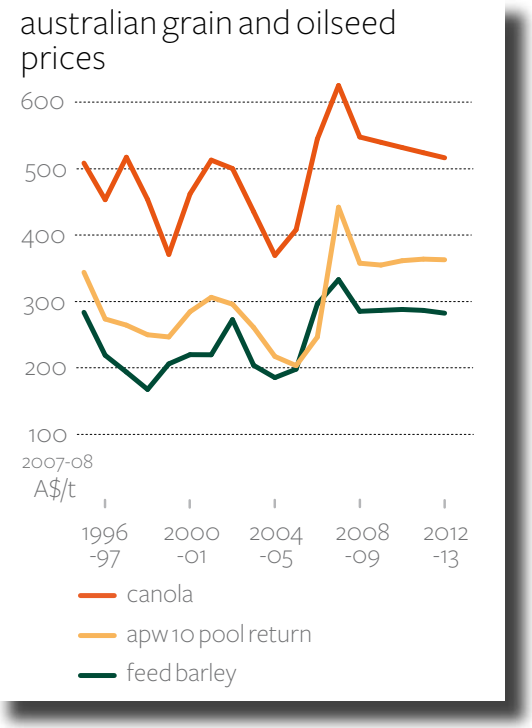
premium white wheat (APW 10) is forecast to decline by around $80 a tonne to average $359 a tonne in 2008–09.

Australian feed barley and canola prices are forecast to fall by 13 per cent and 10 per cent respectively to average $276 a tonne and $568 a tonne.

The lower prices on the domestic market flow from an expected larger grain harvest and a better overall supply/demand balance in terms of livestock feed requirements. As a net exporter of grains, domestic prices will largely reflect developments in the global market adjusted for transport costs and exchange rates. Reflecting these features of the market, the relatively high world grain prices will provide support to domestic grain prices.



Australian medium term outlook

Over the five years to 2012–13 the area sown to grains and oilseeds in Australia is projected to average 23.6 million hectares, compared with an average 22.2 million hectares in the previous five years. The increased cropping area reflects projected higher prices for grains and oilseeds over the medium term.

Competition for cropping land in Australia comes largely from the sheep industry, particularly in the wheat–sheep zone. Since the 1990s the number of sheep in Australia has fallen from around 167 million to an estimated 85 million in 2007–08. Over the same period, the area sown to crops has increased from around 15 million hectares to an estimated 21.4 million hectares. The majority of Australia's sheep are located in the wheat/sheep zone and it is estimated that numbers in this zone have fallen by around 45 per cent since the 1990s. In the pastoral and high rainfall zones, sheep numbers have fallen by 69 per cent and 42 per cent respectively.

Over the medium term the number of sheep in Australia is projected to increase to 96 million by 2012–13. But at this level, numbers will still be below those of the early 2000s. The competition for land in the wheat–sheep zone will remain high, as grain prices are projected to remain at relatively high levels over the medium term.

Continued productivity improvements in the grains industry over the medium term mean that total grains and oilseeds production is projected to be 48 mt by 2012–13. Genetically modified crops are likely to become more widely grown in Australia toward the end of the projection period, following the removal of the ban on GM crops in New South Wales and Victoria. The introduction of GM crops could increase yields for some grain and oilseed crops over time. The projection of grain production incorporates a small improvement in yields from long term trends to reflect the change.

Most of the attraction of GM crops, particularly canola, over the next few years is likely to be in terms of reduced growing costs stemming from increased flexibility in weed and pest management.

GLOBAL OUTLOOK FOR THE SHORT TERM

World prices to remain historically high

The world wheat indicator price (US hard red winter, fob Gulf ports) has been at record highs, in both nominal and real terms, in 2007–08. Low world wheat stocks and poor seasonal conditions in some of the world's major producing and exporting countries have resulted in reduced supplies, which have contributed to the upward pressure on wheat prices.

World supplies of wheat are forecast to increase by 12 mt in 2008–09 as global wheat production is forecast to increase by 19 mt. This increase in supplies is forecast to outweigh a forecast increase in wheat demand and result in the world wheat indicator price falling by around 15 per cent in 2008–09.

For coarse grains, world prices are forecast to remain high in 2008–09 as production and consumption remain in close balance for a second year.

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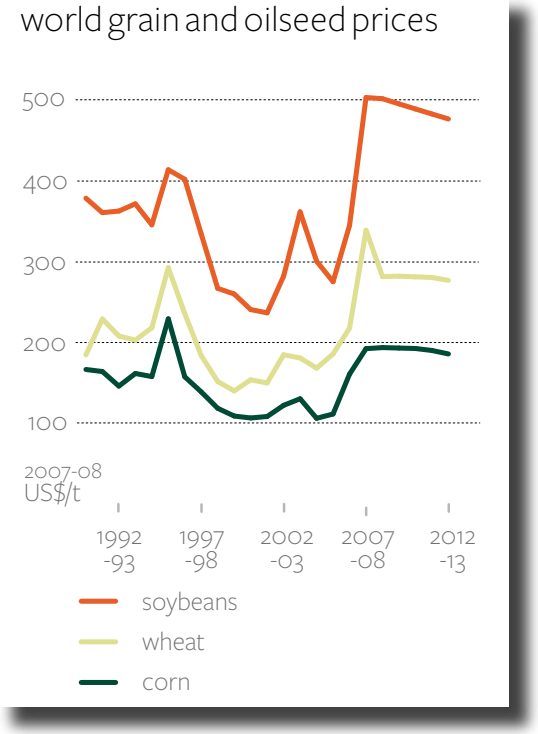

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The world indicator price for coarse grains (US corn, fob Gulf) is forecast to average around US$198 a tonne in 2008–09, around US$5 a tonne higher than in the previous year. Key factors influencing the market outlook are the likelihood of some reduction in the area planted to corn in the US, a recovery in coarse grains production in Europe and Australia, further growth in the demand for corn starch from the expanding US ethanol industry, and the extent to which livestock producers respond to the high feed grain prices.

The world indicator price for oilseeds (soybeans, cif Rotterdam) has been at record highs during 2007–08. Prices in 2008–09 are forecast to increase further as increased demand (particularly for biodiesel) provides support to prices. The indicator price is forecast to increase from an average of US$503 a tonne in 2007–08 to average US$513 a tonne in 2008–09.

Trade policies disruptive to markets

In 2007–08 some of the world's major grain importing and exporting countries made short term changes to trade restrictions in attempts to lower domestic grain and oilseed prices.

Argentina, one of the world's largest exporters of wheat, coarse grains and oilseeds, imposed increased export taxes in early November 2007. The *ad valorem* export tax on wheat was raised from 20 per cent to 28 per cent, corn from 20 per cent to 25 per cent and soybeans from 27.5 per cent to 35 per cent. The Argentine export taxes are designed to discourage exports of grain, to increase supplies available on the domestic market and thus lower domestic food prices.

The European Union (EU) has suspended import duties on all cereals (except oats, buckwheat and millet) until 30 June 2008. The suspension is a reaction to high grain prices and will facilitate imports from outside the EU. Grain sorghum exports to date from the US to the EU in the 2007–08 marketing year are more than 2.4 mt compared with the five year average of around 200,000 tonnes at the same point in the year and 400,000 tonnes a year earlier.

Total wheat exports in the 2007–08 wheat marketing year to date from the US to the EU are around 1.7 mt compared with the five year average of around 1.0 mt for the same time period and 1.4 mt for the total yearly average.

The Russian Federation has also imposed short term trading restrictions to discourage exports of grains. New tariffs were put in place from 12 November 2007 to 30 April 2008. For wheat exports, the tariff has been set at 10 per cent of the customs value, but not less than 22 Euros a tonne. For barley the tariff has been set at 30 per cent of the customs value, but not less than 70 Euros a tonne.

Wheat production higher in 2008–09

High wheat prices in 2007 and early 2008 are expected to encourage a larger area to be sown to wheat in many northern hemisphere countries, and are also likely to result in an increased area sown to wheat in southern hemisphere countries later in the year. On the basis of average seasonal conditions, a recovery in world wheat production is therefore forecast for 2008–09. Global wheat production in 2008–09 is forecast to increase to 622 mt, an increase of three per cent on the previous year.

The 2007–08 season in the EU was marred by hot and dry conditions in some countries, while in others heavy rainfall reduced yields.

In 2008–09 the area sown to wheat in the EU is forecast to increase by around six per cent. In September 2007, policy changes were implemented in the EU to reduce the set-aside rate (land left fallow) for autumn 2007 and spring 2008, to zero per cent from the previous 10 per cent.

Assuming that yields return closer to historical averages, production is forecast to increase to 135 mt in 2008–09, an 11 per cent increase from the previous year.

The US is the world's largest exporter of wheat and one of the world's largest producers. The total area sown to wheat in the US in 2008–09 is forecast to increase by six per cent, with production forecast to increase by 3.6 mt to 59.9 mt.

The majority of wheat produced in the US is winter wheat, which accounts for an average 70 per cent of total wheat production. The area sown to winter wheat in the US (between September and early November) for harvest in 2008 is estimated to have increased by four per cent.

The area sown to spring wheat is also forecast to increase. But competition for area from other spring planted crops, such as corn and soybeans, is expected to be strong.

India plants on average the largest area to wheat in the world (around 12 per cent of the world's total wheat area). The area sown in 2008–09 is forecast to remain similar to last year's at a record 28 million hectares. Combined with the high wheat price in the previous season and the relatively high wheat price forecast for 2008–09, the Indian Government has also increased the minimum support price for wheat. The minimum support price for 2008–09 has increased to 10,000 rupees a tonne – equivalent to a guaranteed minimum price of around US$255 a tonne. Assuming average yields, India's wheat production is forecast to be around 75 mt.

Balanced against these global increases in production is a forecast five per cent fall in 2008–09 wheat production in China. In 2007–08, China's wheat yields increased to a record 4.61 tonnes per hectare, compared with a five year average of 4.14 tonnes per hectare. Assuming yields return closer to historical averages and area remains similar to the previous year, production in 2008–09 is forecast to fall to around 101 mt.

Coarse grains production also higher in 2008–09

World coarse grain production is forecast to reach 1.1 billion tonnes in 2008–09 – 16 mt higher than the record output of the previous year – reflecting the expectation of continuing strong grain prices.

A recovery in coarse grains production in the EU, Ukraine and Australia will more than offset a forecast decline in US corn production. A return to average seasonal conditions is expected to result in corn production in the EU increasing by 25 per cent to around 59 mt in 2008–09. EU barley production is forecast to rise by eight per cent to 62.3 mt, reflecting a slight increase in the area planted.

In 2007–08, drought conditions across much of eastern Europe significantly lowered coarse grains production. While improved growing conditions are expected to lead to higher barley production in Ukraine, increased plantings of oilseeds rather than spring barley are likely. Overall, Ukrainian barley production is forecast to rise by around 50 per cent to 9.5 mt in 2008–09.

Dry conditions have affected coarse grains production in Australia over the past two years. But a return to average seasonal conditions is expected to result in above average plantings of winter coarse grains in 2008–09. Consequently, barley production is forecast to increase by 51 per cent to around 9.0 mt.

In Canada, despite favourable barley prices, increased plantings of spring wheat in 2008–09 are expected to displace some of the area that was planted to barley last year. So barley production is forecast to be lower in 2008–09. Relatively strong corn prices are expected to maintain the area planted to corn, so corn production is forecast to be close to the record output of the previous year.

While both corn and soybean prices have increased over the past year, the expected returns from soybeans relative to corn are likely to favour a shift of arable land in the US back to soybean production. So the area planted to corn in the US is forecast to decline by four per cent in 2008–09. Assuming average growing conditions, US corn production is forecast to decline marginally from the record output of the previous year.

Oilseeds output also increasing

World oilseeds production is forecast to increase by four per cent to 405 mt in 2008–09. Production of soybeans and canola/rapeseed (two of the major oilseeds) are both forecast to increase in 2008–09.

In the US – the world's largest soybean producer – the area sown to soybeans is forecast to increase in 2008–09. In the previous year, the area of soybeans declined by around 16 per cent as a record area was planted to corn. But record soybean prices will help encourage some recovery in area sown to soybeans in 2008–09. Assuming average seasonal conditions, and therefore average yields, soybean production in the US is forecast to increase.

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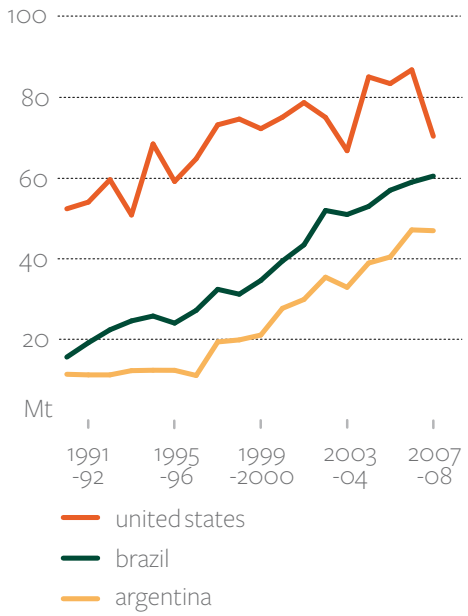
soybean production
major producers



SECTION 1
OVERVIEW
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In Brazil and Argentina the area sown to soybeans increased by four per cent and six per cent respectively in 2007–08. In Argentina the area sown was a record 16.8 million hectares. As world prices of oilseeds are forecast to remain high in 2008–09, the area sown to soybeans in Argentina is forecast to increase. In Brazil, the area sown to soybeans increased by an average nine per cent a year from the mid–1990s to mid-2000s.

The area sown in Brazil is forecast to increase again in 2008–09. But the strong appreciation of the Brazilian currency, the Real, against the US Dollar may to some extent limit the price incentives for expanded plantings. Assuming favourable seasonal conditions and average yields, production is forecast to increase in both Argentina and Brazil in 2008–09.

Dry conditions in Canada – the world's largest canola/rapeseed exporter – during the 2007–08 season, reduced yields below their five year average. In 2008–09, if yields return closer to historical averages, production is forecast to increase.

The EU is the world's largest canola/rapeseed producer and, in 2007–08, unfavourable seasonal conditions reduced yields to below average. Canola yields in the EU were 2.8 tonnes per hectare in 2007–08, compared with a five year average of three tonnes per hectare. In 2008–09 the total area sown to canola/rapeseed in the EU is expected to fall slightly. In France and Germany the area sown to canola/rapeseed is estimated to have fallen by around 10 per cent and nine per cent respectively. Despite record canola prices and the policy changes to 'setaside' land (reduced to zero) in the EU, it is expected that more area will be sown to wheat. Despite the lower area planted, with an assumed return to average yields, production in 2008–09 will remain similar to the previous year.

Palm oil production in Malaysia is forecast to increase in 2008–09. Since palm oil is a substitute for other vegetable oils in food preparation, palm oil prices have been increasing as global prices of oilseeds have risen. While record palm oil prices will encourage Malaysian production, the possibility of expanding trade in the oil will also provide support.

India's elimination of duties on imported vegetable oil and crude palm oil could encourage an increase in Malaysian exports of palm oil.

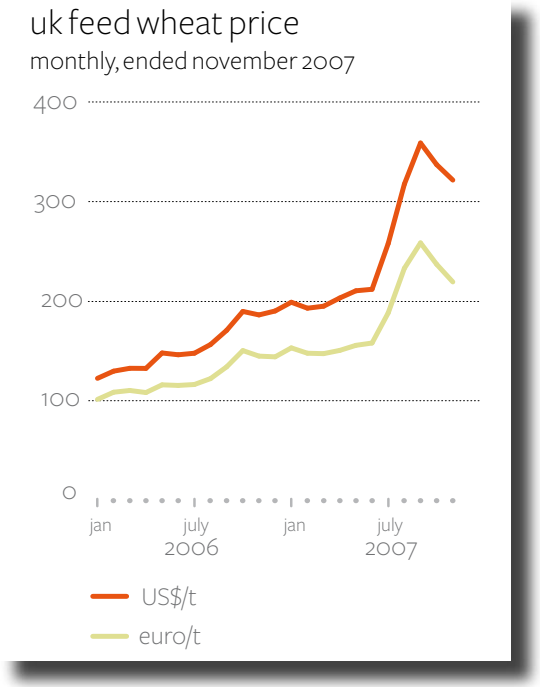
Wheat consumption to increase

World wheat consumption is forecast to increase to 616 mt in 2008–09, five mt above that in the previous season. Human consumption accounts for around 70 per cent of global wheat consumption. But the increase in wheat consumption forecast for 2008–09 largely reflects a forecast increase in demand for livestock feeding purposes. The use of wheat for human consumption has risen by close to one per cent a year over the past five years and is expected to continue at the same rate in 2008–09.

This consumption growth has been in line with growth in the world's population, which increased by just over one per cent a year over the same period.

The demand for wheat for livestock feeding purposes is expected to rise in 2008–09. The EU is the world's largest consumer of feed wheat, accounting for over half of total feed wheat consumption. Feed wheat prices in the EU increased from an average of around US$200 (€153) a tonne in January 2007 to an average of US$322 (€219) a tonne in November 2007.

The substantial rise in feed wheat prices resulted in livestock producers seeking alternative relatively lower priced feed stocks. In 2008–09 a forecast lower price of feed quality wheat compared with other feed grains, such as feed barley, is expected to result in the substitution of increased amounts of feed wheat for barley in EU livestock feeding rations.



Ethanol production continues to drive corn use

World consumption of coarse grains is forecast to rise by one per cent to 1.1 billion tonnes in 2008–09, reflecting continuing growth in the worldwide ethanol industry and the use of corn as a major feedstock.

In the US, the amount of corn used in ethanol production increased by 50 per cent to an estimated 81 mt in 2007–08, representing around a quarter of US corn production. Mandated use of biofuels in transport fuels under the Energy Independence and Security Act of 2007, will mean that domestic use of corn is likely to rise again in 2008–09.

The mandate was set to 9.0 billion gallons (34.1 billion litres) by 2008 under the 2007 Act. In 2007 an estimated 8.7 billion gallons (32.9 billion litres) of ethanol were produced.

Adding to the tight coarse grain market in the US has been the strong growth in corn exports. US corn exports are estimated to have increased by 15 per cent to 62 mt in 2007–08, reflecting to a large extent the effect of a weaker US dollar on price in importing country currencies and stronger demand from the EU.

Strong feed grain prices are expected to continue to place downward pressure on the profitability of livestock industries that use substantial amounts of feed grains. In the US, high feed costs have contributed to a decline in the number of cattle on feed, thus reducing the demand for feed grains.

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At the same time, record numbers of pigs are likely to support feed grain demand in 2008. But some liquidation of breeding stock is expected to lead to lower pig numbers in 2009. With a continuation of high corn prices, end users are expected to continue to substitute other grains in livestock rations, including distillers grain (a byproduct of corn used in ethanol production) in ruminant rations.

Following a recovery in barley production in the major producing and exporting countries, world consumption of barley is forecast to increase in 2008–09. Saudi Arabia, which accounts for just over 50 per cent of world trade in feed barley, is forecast to maintain barley imports in 2008–09.

To offset high import prices for feed barley and falling import volumes, Saudi Arabia increased its subsidy on imported barley by 40 per cent to US$188 a tonne in late 2007. While Australian exporters are expected to increase shipments of barley to this market in 2008–09, they are likely to face increased competition from Ukrainian and Russian exporters, assuming that the current short term restrictions (export quotas in the Ukraine and export taxes in Russia) imposed by these two countries are relaxed.

China's imports of malting barley are estimated to be just over one mt lower in 2007–08 as a result of high import prices and reduced world supplies, particularly from Australia, the leading exporter of malting barley to China. China's domestic malting capacity has increased in recent years and, despite its growing domestic beer market, is expected to increase its exports of malt over the medium term.

World trade in malt has been expanding in recent years, reaching the equivalent of six mt of barley in 2007–08 and equivalent to twice the volume of malting barley traded. The increase in malt trade reflects the growth in beer consumption in the main malt importing markets of Viet Nam, Thailand, Mexico, Brazil and the Russian Federation.

Biodiesel driving demand for oilseeds

World consumption of oilseeds is forecast to increase by two per cent to 414 mt in 2008–09, as demand for oilseed products increases.

Consumption of vegetable oils is forecast to increase to 130 mt in 2008–09, while consumption of oilseed meals is forecast to rise by 9.0 mt. Industrial use of vegetable oils has increased strongly from 8.7 mt in 2000–01 to 22.8 mt in 2007–08. With rising investment in biodiesel plants across the world, industrial use of vegetable oils is expected to continue to increase in 2008–09.

The EU is the largest producer of biodiesel, with the main vegetable oil used being canola/rape grains seed. With government policies in the EU setting mandatory targets for blending, demand for vegetable oil is forecast to remain strong.

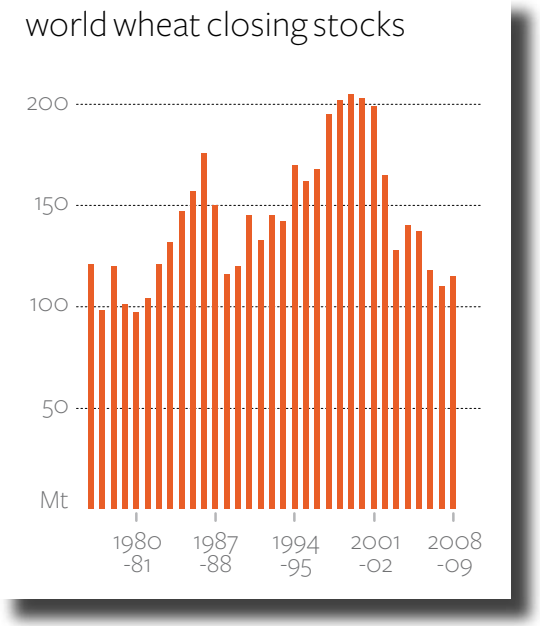
In April 2007 the Malaysian Government passed legislation to mandate the use of biofuels in transport fuels. It is estimated that the government has approved licences for 90 biofuel plants. The major feedstock used in Malaysian biodiesel production is likely to be domestically produced palm oil.

Oilseed meal is a product derived from the crushing of oilseeds and is widely used as a high protein feed for livestock. China is one of the largest consumers of oilseed meal, with consumption increasing by around nine per cent a year over the past 10 years. With the growth in China's livestock sector forecast to continue, the demand for oilseed meal is forecast to increase in 2008–09. China's biofuels policies are also encouraging increased use of vegetable oil in the production of biodiesel. Increased demand for vegetable oil and oilseed meal are forecast to increase the derived demand for oilseeds in 2008–09.

World wheat stocks increasing but remain relatively low

Although global wheat ending season stocks are forecast to increase by five mt in 2008–09, stocks are relatively low. Wheat stocks through the late 1990s and early 2000s have been close to 200 mt. Since 2001–02, stocks have declined by an average nine per cent a year. While stocks are forecast to increase to 115 mt in 2008–09, this is still one of the lowest levels since the early 1980s.

Stocks of high quality milling wheat held by the major exporters – Argentina, Australia, Canada, the EU and the US – are estimated to have declined by nearly 13 mt in 2007–08. The reduction in stocks reflects a drawdown in holdings to meet export commitments and domestic consumption needs, and (in some countries) below average crops. In 2008–09, stocks held by the major five exporters are forecast to increase but to remain relatively low in historical terms.



World stocks of coarse grains and oilseeds falling in 2008–09

World coarse grains stocks are forecast to decrease by two per cent to around 123 mt in 2008–09. Given the forecast world consumption of coarse grains for the year, this would result in stocks to use ratio of 11.5 per cent – the lowest ratio since 1973–74. Such an outcome means that world grain markets are particularly vulnerable to shocks, such as lower than expected production.

World end of season oilseed stocks are forecast to decline by 15 per cent to 45 mt in 2008–09. In the major soybean

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exporting countries of the US, Argentina and Brazil, stocks were drawn down by around 15 mt in 2007–08 as domestic demand and export commitments were met. Despite an expected improvement in production, stocks are forecast to be drawn down further in 2008–09.

GLOBAL OUTLOOK FOR THE MEDIUM TERM

A number of factors are likely to be important in influencing the market outlook for grains and oilseeds over the medium term to 2012–13. The most obvious one, which has risen to prominence in recent years, is demand for biofuels. Growth in the biofuels sector will continue to be a key driver of demand for grains and oilseeds, particularly in the US, the EU and China.

Additional drivers of market developments include:

- Agricultural trade policies in the main producing and consuming countries;
- Growth in demand for animal products, particularly in developing countries;
- Supply responses that are likely to be underpinned by higher on-farm productivity; and,
- An increase in the area under crops, particularly in South America.

Grain prices to remain relatively high

The world grain supply and demand balance is expected to remain relatively tight over the medium term. The stocks to use ratio for wheat and coarse grains is low, and is projected to remain relatively low over the medium term. The wheat ratio is projected to be around 18 per cent in 2012–13, compared with an average 28 per cent in the early 2000s. The stocks to use ratio for coarse grains is projected to be 12.6 per cent by 2012–13, compared with an average 18 per cent in the early 2000s. These low stocks to use ratios will help support grain prices over the outlook period.

Through the 1990s to mid-2000s, prices of grains and oilseeds trended downward in real terms. But since then, real prices have been increasing. Over the medium term to 2012–13, prices are projected to remain relatively high. The increased demand for grains and oilseeds to produce biofuels, which is additional to underlying demand for food, feed and other industrial uses, coupled with difficulties in increasing production at the same rate, appears to have shifted prices for grains and oilseeds to a new higher level.

Although productivity improvements in grains production and larger areas planted can be expected to result in increased volumes of grains being produced over the medium term, market prices are likely to become more volatile. In the past, short term price spikes have usually been linked to production shortfalls (as can happen with poor seasonal conditions) in key producing and exporting countries. The low grain stocks and increased demand for grains means that abrupt changes in production are likely to be translated quickly into significant price fluctuations.

Demand to test new bounds

With the advent of policy induced major demand for biofuels, the demand for grains and oilseeds is projected to grow strongly over the medium term. But in some respects, this new biofuels demand element in the market may be somewhat changeable as governments fine tune policies to reflect community attitudes to such issues as the unintended market consequences of current policies, environmental concerns and fuel supply security.

World wheat consumption is projected to increase to 655 mt by 2012–13, compared with 611 mt in 2007–08. Although the volume of wheat used per person appears to be declining, having fallen from an average of 71 kilograms in 2000–01 to around 67 kilograms in 2007–08, total wheat used in human consumption has risen as populations have grown.

Consumption of coarse grains and oilseeds is projected to reach 1.1 billion tonnes and 448 mt respectively by 2012–13. Although the substantial shift in the demand for coarse grains and oilseeds for industrial use (mainly for biofuels) is expected to be maintained over the medium term, traditional uses such as in animal feed and for human consumption are also expected to continue to grow.

Demand growth underpinned by biofuels

Growth in the biofuels sector represents a major new era of demand for grains and oilseeds and is likely to have a significant impact on world agricultural markets during the projection period. The US Department of Agriculture has estimated that world biofuel production has tripled since 2000 to around 16 billion gallons in 2007 (61 billion litres), with production concentrated in the US, Brazil and the EU. China and Malaysia are also developing biofuel industries. The main feed stocks used in production are corn in the US, sugar in Brazil and vegetable oils in the EU.

The profitability of biofuel production has been directly related to movements in the oil price, the price of feed stocks, and the return from byproducts such as distillers grains. Supportive government policies have provided a major stimulus to the expansion of biofuels production. The sustained rise in oil prices over the past few years has been a key factor in the developing interest in biofuels as an additional source of liquid fuel for the transport sector.

The US is a major driver of ethanol demand

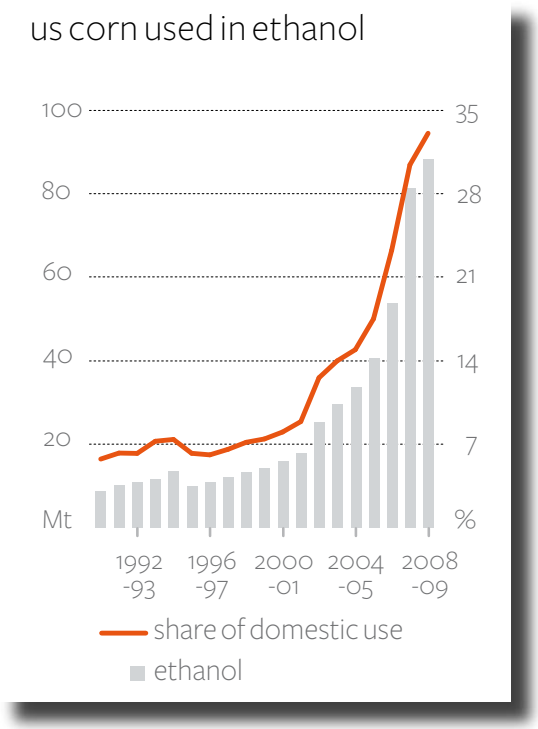
Government policies supporting biofuels industries have been important in providing incentives for investment as well as reducing the risk and uncertainty associated with volatile output and input prices. The US provides US51 cents a gallon (US13 cents a litre) tax refund for blenders

Growth in the biofuels sector represents a major new era of demand for grains and oilseeds.

of ethanol and US$1.00 per gallon (US26 cents a litre) for biodiesel produced from vegetable oil and animal fat.

Furthermore, ethanol imports are subject to a 2.5 per cent *ad valorem* tariff and a specific tariff of US54 cents a gallon (US14 cents a litre). Imports from certain Central American and Caribbean countries are duty free up to a maximum of seven per cent of the US ethanol market. While the specific tariff is due to expire in 2009 the US Congress has repeatedly extended the tariff (first imposed in 1980).

The US Energy Independence and Security Act of 2007 increased the mandate of ethanol used in transport fuels. The previous renewable fuel standard was 5.4 billion gallons (20.4 billion litres) in 2008, rising to 7.5 billion gallons (28.4 billion litres) in 2012. The new standard starts at nine billion gallons (34.1 billion litres) in 2008 and rises to 36 billion gallons (136.3 billion litres) by 2022.



From 2016 all the increase in the mandated renewable fuel standard must be met from cellulosic ethanol (plant material other than corn starch). This means that corn starch will be used to produce a maximum 15 billion gallons (56.8 billion litres) of ethanol by 2015. Production of this amount of ethanol would require 138 mt of corn, 70 per cent higher than that used in ethanol production in 2007.

The Center for Agricultural and Rural Development estimates that the rate of expansion of ethanol plants in the US is likely to mean that the renewable fuel standard target will be exceeded over the next few years.

With more capacity currently under construction, US ethanol production capacity is expected to exceed 13 billion gallons (49.2 billion litres) within the next three years.

In the long term, it is possible that second generation feed stocks will become technically and economically feasible and displace corn as the primary ethanol feedstock in the US. The US Department of Agriculture notes that the amount of biofuel produced from an acre of land varies from 100 gallons per acre (935 litres per hectare) for EU rapeseed to 400 gallons per acre (3740 litres per hectare) for US corn and 600 gallons per acre (5610 litres per hectare) for Brazilian sugar. Cellulosic ethanol (derived from wood chips and wood wastes, crop residues and fast growing grasses) could raise ethanol yields to more than 1000 gallons an acre (9550 litres per hectare).

The Food and Agricultural Policy Research Institute has undertaken an analysis of the impacts of the Energy Independence and Security Act of 2007 (EISA) on the US agriculture sector. These results indicate that over the period 2011–12 to 2016–17, ethanol use of corn could increase by an average of 28 mt compared with the scenario with pre-EISA policies in place, assuming biofuel taxes and tariffs are extended. About 30 per cent of the increase comes from an increase in corn production, another 30 per cent from a reduction in corn exports, and the remainder are estimated to come from reductions in feed and other uses of corn and carryover stocks.

Under the new policies, corn prices increase by an average of eight per cent relative to the scenario with pre-EISA polices and soybean prices by nine per cent. Wheat prices are estimated to increase by three per cent because of substitution effects.

…but it's more than just the US

In the EU, a biofuels target of 10 per cent of overall transport fuel by 2020 has been set. It is estimated that there are currently 185 biodiesel plants operational in the EU, with a production capacity of 10.3 mt in 2007. Germany is the largest producer of biodiesel in the EU, accounting for more than half of biodiesel production in 2006. At present the major feedstock used in the EU to produce biodiesel is canola/rapeseed oil. With the industry in the EU expected to continue to expand over the medium term, the demand for canola/rapeseed oil is expected to increase.

In Canada the government is developing mandates for renewable fuel use in the transport fuel sector. The government is proposing that, by 2010, five per cent of gasoline must be from renewable fuels (ethanol) and, by 2012, two per cent of diesel must be from renewable fuels (biodiesel). To encourage renewable fuel production in Canada, the government has introduced incentive payments. Excise tax exemptions for ethanol and biodiesel were eliminated on one April 1, 2007 and replaced with production incentive rates of C$0.10 a litre for renewable gasoline and C$0.20 a litre for renewable alternatives for diesel. It is estimated that by 2009 ethanol production capacity in Canada will be 1.6 billion litres, while biodiesel production capacity will be 97 million litres.

In China, ethanol production is estimated to have been 1.45 mt in 2007 – an increase of around 12 per cent on the previous year. While ethanol production in China is likely to increase over the medium term, the government has revised its biofuels plan. This requires that biofuels will not compete with food production and therefore feedstocks must be grown on more marginal land.

Increased demand for feedstocks in the production of biodiesel is also likely in the Republic of Korea. The Korean Government has introduced a blend ratio of 0.5 per cent inclusion of biodiesel in petroleum diesel. Currently it is estimated that there are 15 biodiesel plants in Korea, with a combined production capacity of around 531 000 tonnes.

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Over the medium term biodiesel production is expected to increase to meet the blending requirements.

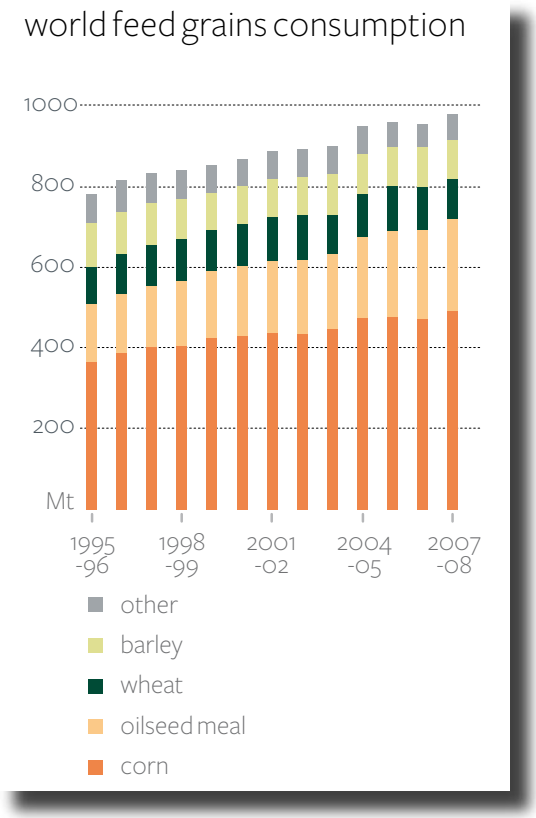
Feed grains demand

The use of grains and oilseed meal for livestock feeding has increased by an average two per cent a year over the past 10 years. The total use of grains and oilseeds for livestock feeding is projected to increase over the medium term, with some substitution of distillers grains for cereal grain likely to occur.

When ethanol is produced from corn, only the starch is used and the resulting coproduct – distillers grains – has all the remaining nutrients, protein, fat, minerals and vitamins. Distillers grains are marketed in three forms – distillers dried grains (DDG), wet distillers grains (WDG) and dried distillers grains with solubles (DDGS).

All three products can be used for livestock feeding. But the inclusion rates in rations vary between ruminants and monogastrics. In beef cattle, distillers grains can be included to a maximum 40 per cent of feeding rations for WDG and a maximum 20 per cent for DDG. In dairy cattle it is estimated that DDG can be included at a rate of up to 20 per cent of dry matter. In monogastric diets, DDGS can be 15 per cent of rations for poultry (layers) and up to 20 per cent for grower finish pigs (National Corn Growers Association).

The rapid growth in US ethanol production has increased the supply of distillers grains. With favourable policies encouraging ethanol production in the US there is likely to be increased availability of distillers grains over the medium term.



World grain supply increasing

While strong demand from ethanol production is expected to maintain upward pressure on grain prices over the medium term, there is potential to increase grain supplies through larger planted areas and productivity improvements. World arable land areas have remained relatively constant since the late 1990s, with the increase in grain production largely arising from gains in productivity.

In some regions, including the US and the EU, policies have been in place to take land out of production for environmental and conservation reasons. In the US, there are around 37 million acres enrolled in the Conservation Reserve Program of which 27 million acres would be suitable for growing crops.

High grain prices and rising land prices are an incentive to producers to return program land to cropping. It is estimated that 2.5 million acres under the program expired at the end of 2007 and that most of this land will not be re-enrolled in the program. Over the medium term it is likely that, as further contracts expire, land will return to agricultural production.

The EU's Common Agricultural Policy (CAP) has traditionally influenced EU crop production through support prices, planting restrictions, intervention buying, and stock management. Under CAP arrangements the percentage of eligible land to be set aside (taken out of crop production) is decided each year. At the end of 2007, the EU officially decided to suspend the set-aside policy in 2008, reducing the amount of eligible land to be set aside from 10 per cent to zero. It is estimated that eliminating the set-aside will result in an addition of close to four million hectares of land available for cropping.

With growing pressure in the EU to abolish the set-aside land rule completely and with concerns about supply and higher grain prices, it is possible that the zero per cent rate may continue. Changes to EU set-aside limits will have a potentially important effect on the amount of arable land available for cropping over the medium term.

Potential production increases in South America

In 1990-91, Argentina harvested 4.8 million hectares of soybeans, while Brazil harvested 9.8 million hectares. By 2007–08 the areas harvested had increased to 16.8 million hectares in Argentina and 21.5 million hectares in Brazil. In the past year alone, it is estimated that the South American share of the world soybean production increased from 48 per cent to 53 per cent.

The soybean industry has also been increasing in Paraguay, with the area harvested increasing from 0.9 million hectares in 1990-91 to 2.8 million hectares in 2007–08. Soybean prices are projected to remain relatively high over the medium term and it is likely that South America will increase its share of world soybean production.

Further development of agricultural industries in South America depends on the maintenance of a relatively stable macroeconomic environment. Investment in crushing facilities and transport infrastructure will be required for expansion potential to be met.

Brazil in particular has millions of hectares of undeveloped forests and grasslands with nutrient rich soils that could be transformed into agricultural land. Concerns have been raised by environmentalists that continued agricultural expansion will lead to degradation of the Amazon rainforest. But the US Department of Agriculture, in its 2003 report on Brazil, *Future Agricultural Expansion Potential*

Underrated, suggests that more than 150 million hectares of land could be cleared without additional deforestation in the Amazon Basin.

Productivity improvements may increase supplies

In recent years, there has been a rapid adoption of genetically modified (GM) crops such as corn, soybean and canola – particularly in Argentina, Canada, China and the US. In 2006–07, GM canola in Canada was 77 per cent of the area harvested, while in the US GM crops accounted for 89 per cent of soybean production and 61 per cent of corn production. In Argentina and Brazil the area of GM soybeans harvested was 98 per cent and 45 per cent respectively.

The adoption of GM grains has resulted in an improvement in cropping yields. In Canada, canola producers estimate that GM varieties increased yields by up to 10 per cent compared with non-GM varieties. The US Department of Agriculture estimates that with continued adoption of GM variety corn, yields in the US will increase from the current five year average of 9.15 tonnes per hectare to 10.5 tonnes per hectare by 2012.

In Australia, two states, Victoria and New South Wales, have recently removed bans on growing GM crops. The remaining states are yet to make a decision on lifting GM bans. But over the medium term it is expected that GM crops will be produced in greater quantities in Australia.

The global acceptance and adoption of GM grains is likely to increase over the medium term, especially given the increased demand for grains for 'nonfood' purposes (biofuels). ■

TABLE 1: World and Australia grains production, stocks and price forecasts

	Unit	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
WHEAT								
World wheat								
Production	Mt	591	603	622	619	630	645	659
Closing stocks	Mt	117	110	115	111	112	114	118
Price* (US Hard red winter)	US$/t	218	339	282	282	281	281	277
Australia wheat								
Production	kt	10,641	13,093	25,953	26,172	26,555	26,988	27,369
Price* (APW10 net pool)	A$/t	246	440	350	346	348	350	349
COARSE GRAINS								
World coarse grains								
Production	Mt	982	1052	1068	1083	1098	1115	1132
Closing stocks	Mt	137	126	123	125	130	135	142
Price* (US corn)	US$/t	161	193	194	193	193	190	186
Australia coarse grains								
Production	kt	6823	10,005	13,338	13,308	13,606	13,887	14,120
Price*: Feed barley	A$/t	284	317	269	267	266	262	258
Malting barley	A$/t	330	370	313	312	310	306	301
Grain sorghum	A$/t	259	234	225	224	225	223	220
OILSEEDS								
World oilseeds								
Production	Mt	406	390	405	413	428	439	450
Closing stocks	Mt	71	53	45	36	33	33	35
Price* (Soybean, Rotterdam)	US$/t	345	503	502	495	489	483	477
World protein meals								
Production	Mt	225	234	243	248	257	263	270
Price* (Soybean meal)	US$/t	345	400	412	406	401	396	391
World vegetable oils								
Production	Mt	122	127	134	136	141	145	149
Price* (Soybean oil)	US$/t	793	950	947	935	923	912	900
Australia oilseeds								
Total production	Kt	1030	1377	2289	2646	2790	2948	3152
Canola	Kt	517	1065	1434	1536	1645	1762	1924
Canola price* (Melbourne)	A$/t	545	631	552	544	536	529	521
Sunflowers	Kt	18	49	48	56	62	72	84
Sunflower price* (Sydney)	A$/t	773	775	717	706	696	686	675

Sources: Australian Bureau of Statistics; International Grains Council; USDA; ABARE. (* Real prices are used in 2007–08 dollars)