**Domestic and global grains outlook**

By David Barrett, Gayathiri Bragatheswaran, Leanne Lawrance and Henry To, ABARE

**THE AUSTRALIAN SCENE**

The area planted to grain sorghum in 2008–09 is estimated to have declined by 15 per cent from the previous season’s record area. Lower availability of fallow land and lower feed grain prices are factors contributing to the fall in the area planted.

Rainfall across the major grain sorghum producing regions has been favourable, and yields are expected to be above average. Assuming above average yields, total grain sorghum production is forecast to reach 2.1 million tonnes in 2008–09.

**Winter grains area to fall in 2009–10**

The area planted to winter crops is forecast to decline in 2009–10, as lower grain prices and relatively high fertiliser costs discourage some area from being planted.

The split-up of winter crop area will depend on the timing and extent of autumn rainfall. Crop rotation factors will also be a consideration for individual growers. A late break to the season could result in a smaller area being planted to canola and pulses, as these crops are generally planted earlier in the growing cycle than wheat and barley crops.

The area planted to winter crops is forecast to be 21.1 million hectares in 2009–10, compared with 21.8 million hectares planted in the previous season. Assuming autumn rainfall is favourable, the areas planted to oilseeds and pulses are forecast to increase by 13 and 5 per cent, respectively. The areas planted to wheat and barley in 2009–10 are forecast to fall by 5 per cent and 2 per cent, respectively.

The 2008–09 winter cropping season was highly variable across Australia, with mixed yield and quality results between and within states. Assuming yields return closer to the longer term average, winter crop production is forecast to increase by 3 per cent in 2009–10, compared with the harvest in 2008–09.

Of the major winter crops, wheat production is forecast to increase to 22 mt in 2009–10, compared with 21 mt harvested in the previous season. Barley production is forecast to increase to 7.3 mt, up from 6.8 mt in 2008–09.

Canola production is forecast to decline in 2009–10, as yields, mainly in Western Australia, decline from the highs achieved in 2008–09. Canola production is forecast to be 1.4 mt in 2009–10—a decline of around 220,000 tonnes.

**Wheat exports to rise in 2009–10**

Australian wheat exports are forecast to increase to 14.7 mt in 2009–10, as exportable supplies increase. The total value of Australia’s wheat exports is forecast to increase to $5.8 billion, compared with $4.5 billion in 2008–09.

Changes to Australia’s wheat export marketing arrangements took effect on July 1, 2008.

The new arrangements allow companies, once approved by Wheat Export Australia (WEA), to export bulk wheat from Australia. Exports in containers and bags are possible without any restrictions other than meeting Customs and Australian Quarantine Inspection Service requirements.
Over the five years to 2013–14, the area sown to grains and oilseeds is projected to average 23.1 million hectares, compared with an average 22.1 million hectares in the previous 10 years.

Since the 1990s there has been a major shift in Australian broadacre agriculture, with a steady decline in the size of the Australian sheep flock and an increase in the area under cropping.

The Australian sheep flock is projected to remain around 75 million sheep over the projection period. This number of sheep remains well below the 110 million sheep in Australia in early 2000.

Total grains and oilseed production is projected to be 42.9 mt by 2013–14. Total factor productivity (TFP) is one of the main indicators used to monitor and analyse the performance of various sectors of the economy.

Technological advances, improvements in management, and efficient exploitation of economies of scale influence the rate of growth in productivity. ABARE estimates that productivity in the Australian crop industry increased on average by 2.1 per cent a year between 1977–78 and 2006–07. But there are some signs that productivity improvements in the cropping industry have been slowing in more recent years.

Over the period 1977–78 to 2001–02, the annual productivity growth rate was 3.2 per cent for specialist crop industry, compared with 2.1 per cent between 1977–78 and 2010–11.

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

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<td>Total production</td>
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<td>844</td>
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Sources: Australian Bureau of Statistics; International Grains Council; USDA; ABARE. (* Real prices are used in 2008–09 dollars)
grains industry will have to occur over the medium term for production to increase.

GM 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 and the announcement of trials in Western Australia from 2009–10. The introduction of GM crops could increase yields for some grain and oilseed crops over time. 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 decline in 2009–10

Seasonal conditions were favourable during 2008–09 in many of the world’s major wheat producing countries and yields were at historical highs. In 2009–10, global wheat production is forecast to fall as yields are assumed to return closer to historical averages. Demand for wheat, particularly as a feed ingredient for livestock, is forecast to decline in 2009–10.

World grain prices

The world wheat indicator price (US hard red winter, fob Gulf ports, in 2008–09 US dollars) is forecast to fall by around 7 per cent in 2009–10 to average US$244 a tonne. Despite the forecast reduction in price, it is still a relatively high price by historical standards.

Following sharply lower prices in 2008–09, world coarse grain prices are forecast to fall slightly in 2009–10, as prices adjust to relatively large supplies of feed grains and weaker demand.

The world indicator price (US corn, fob Gulf, in 2008–09 US dollars) for coarse grains is forecast to average US$166 a tonne in 2009–10, around US$8 a tonne lower than the previous year and US$57 lower than the average price in 2007–08. But such a price outcome would still be well above prices recorded in the early 2000s, in real dollar values.

Key factors influencing this market outlook in 2009–10 are the likelihood of continuing high supplies of coarse grains in North America, Europe and South America; the impact of lower oil prices on the production and consumption of ethanol, and hence the demand for corn by the US ethanol industry; and, weaker demand for feed grains from livestock industries.

The world oilseed indicator price (soybeans, cif, Rotterdam, in 2008–09 US dollars) is forecast to decline by 5 per cent in 2009–10 to average US$370 a tonne.

Lower oilseed demand is forecast for 2009–10 placing downward pressure on prices, outweighing a forecast decline in supplies which will provide some support to the price.

Wheat production lower in 2009–10

Under an assumption of a return to average yields, a decline in world wheat production is forecast for 2009–10. Global wheat production in 2009–10 is forecast to be 632 mt, down around 55 mt from the previous season’s record 687 mt.

The decline in production is forecast for the five major producing countries of China, the European Union, India, the Russian Federation and the US. Yields in all five countries were above average in 2008–09 as seasonal conditions were favourable. For 2009–10, it is assumed yields will return closer to historical averages and therefore production will decline from the previous season’s record.

In the EU, the mandatory set aside rate (land left fallow) has been abolished.

Despite the increased area available to be planted to crops, the lower wheat price and high input costs (fertiliser) are leading to a forecast 2 per cent fall in the area planted to wheat.

In 2009–10, the area planted to winter wheat in the US is forecast to be around 9 per cent lower than the area planted in 2008–09.

Winter wheat is the major wheat variety produced in the US and the area planted to spring wheat will compete with crops such as corn and soybeans. Wheat yields were estimated to be around 3 tonnes a hectare in 2008–09 which was above the five year average of 2.81 tonnes a hectare.

Assuming a decline in the total area planted to wheat and a return to historical average yields, wheat production in the US is forecast to decline by 12 per cent in 2009–10.

Wheat production in China has been above 100 mt for the past three years. In 2009–10, the area planted to wheat in China is forecast to remain largely unchanged at around 23 million hectares. Poor seasonal conditions are currently being experienced across China and may result in yields being below average. Total wheat production in China is forecast to be lower than in the previous season.

Coarse grains production lower in 2009–10

World coarse grain production is forecast to decline to 1.07 billion tonnes in 2009–10, 27 mt lower than the record output of the previous year, largely reflecting the prospect of attaining average yields compared to record yields in 2008–09. But carryover stocks from the previous year are expected to maintain supplies at close to record levels.

The area planted to corn in the US is forecast to increase slightly in 2009–10, following a significant fall in the previous year. While both corn and soybean prices have declined sharply over the past eight months, their expected relative returns favour a shift into corn production. The prospect of
lower wheat and cotton plantings in 2009–10 is also likely to increase the available arable land for summer cropping. A portion of this land is likely to be used to increase plantings of both corn and soybeans.

Overall, US corn production is forecast to decline in 2009–10 as a result of lower average yields.

Following a sharp increase in corn production in 2008–09 in the EU, production is expected to be lower in 2009–10. EU barley production is forecast to decline by 5 per cent to 62.3 mt reflecting a decline in both the area planted and yields.

In 2008–09, good growing conditions across much of Eastern Europe and the Russian Federation resulted in record yields and significantly higher coarse grain production.

At the end of 2008, the Russian Government commenced buying stocks of wheat, rye and barley to support domestic prices received by farmers. In late December 2008, the Russian Government added corn to this list and for the first time commenced buying corn stocks. Such support is expected to maintain resources in crop production for 2009–10. In 2009–10, barley yields are assumed to decline by around 20 per cent. Consequently, barley production in the Ukraine and the Russian Federation are forecast to fall significantly.

Dry conditions have affected barley production in Australia during the past three years and an assumed improvement in seasonal conditions is expected to result in an increase in production of winter coarse grains in 2009–10. Barley production is forecast to reach around 7.3 mt, reflecting better yields.

In Canada, despite expected returns for barley production remaining relatively unchanged, the area planted to barley is forecast to increase by 3 per cent in 2009–10. But Canadian barley production is forecast to decline by around 7 per cent reflecting an assumed fall in yields.

Oilseeds production also lower

World oilseed production is forecast to fall by 3 per cent in 2009–10. Among the major oilseed crops (soybeans, canola/rapeseed and cottonseed) produced globally, yields in 2008–09 were above the five year average.

World soybean production

- United States
- Brazil
- other
- Argentina
Soybeans account for around 57 per cent of total world oilseed production, with the US, Brazil and Argentina being the largest producers. In 2008–09, yields in Brazil and Argentina are expected to be above the longer term average. Despite a forecast increase in the area planted to soybeans in these countries in 2009–10, production is forecast to decline as yields return closer to historical averages.

In the US a record area was planted to soybeans in 2008–09, as growers moved out of cotton and corn production to take advantage of the higher prices on offer at the time. In 2009–10, the area planted to cotton is expected to decline further, while some land will be moved into corn production. Overall, the area planted to soybeans in the US is forecast to fall slightly.

In 2009–10, production is expected to be lower in the major canola/rapeeseed producing countries such as Canada, China and the EU.

The area planted to canola/rapeeseed in Canada in 2009–10 is forecast to be below the previous season’s record 6.5 million hectares. Combined with the forecast decline in area planted is a decline in yields. Canola yields in 2008–09 increased to a record 1.94 tonnes a hectare, around 20 per cent above the five year average.

The 2008–09 season was one of above average yields for cottonseed and sunflower seed production. In 2009–10, assuming a return to average yields, production is forecast to decline.

Wheat consumption to decline in 2009–10

Reductions in wheat consumption in 2009–10 are expected to be driven by a decline in the use of wheat for livestock feed. Food wheat consumption over recent years has increased by around 1 per cent a year.

Wheat consumption is forecast to fall from 648 mt in 2008–09, to 628 mt in 2009–10. The use of wheat for livestock feed increased to a record 117 mt in 2008–09, largely as a result of wheat feeding in the EU. In 2009–10, EU feed grains consumption is forecast to fall as livestock production declines. Lower wheat production in the EU in 2009–10 is also likely to reduce the available supplies of wheat for livestock feed.

Slower economic growth dampens demand

World coarse grain consumption is forecast to decline by 9 mt to 1.07 billion tonnes in 2009–10, reflecting reduced demand for feed grains as livestock production contracts in response to weaker demand for livestock products.

The expansion of biofuels industries in the US and the EU was a significant factor underpinning the strong rise in global grain prices in 2007–08. In the past two years, corn used in ethanol production in the US increased by 70 per cent to an estimated 91 mt in 2008–09, representing around 30 per cent of US corn production. The US has been able to meet the increased demand for corn by expanding production.

But the US is a significant exporter of feed grains and developments in the US ethanol industry have important implications for the world coarse grain market.

The global financial crisis and the sharp decline in oil prices since mid-2008 have significantly reduced profitability in the US ethanol industry, with plants being closed and plans to construct additional distilleries being shelved. While these developments have the potential to lower the supply of ethanol over the next year, an increase in the use of ethanol has been mandated under the Energy Independence and Security Act of 2007.

The Renewable Fuel Standard has been set at 10.21 per cent for 2009, ensuring that 11.1 billion gallons (42 billion litres) of renewable fuel would be blended into transportation fuel. If the Renewable Fuel Standards are binding then there is likely to be another large increase in the use of corn for ethanol – around 12 per cent – in 2009–10.

Strong feed grain prices during the first half of 2008 placed downward pressure on the profitability of the livestock sectors in the US and Europe.

In the US, lower breeding cattle numbers at the beginning of 2009 are expected to lead to reduced numbers on feed through to 2010–11. Similarly, the production of pig meat in the US is forecast to fall by 1.4 per cent in 2009, and poultry production is expected to decline by 2 per cent.

These developments in the US livestock industries are expected to lower the demand for feed grains. Furthermore, pig numbers have also declined in the EU and this is expected to result in reduced use of feed grains in 2009–10.

Lower oilseed demand in 2009–10

World oilseed consumption is forecast to decline by 9 mt in 2009–10, as the derived demand for oilseed products falls. Oilseed meal consumption is forecast to decline by 3 per cent in 2009–10 and vegetable oil consumption by 2 per cent.

The use of oilseeds is derived from the demand for lower levels of world wheat consumption, and softer demand, are forecast to reduce wheat prices. But prices will be higher than historical levels.
oilseed products. The demand for vegetable oil has been driven by increasing use in the processed food sector and biodiesel production.

The demand for oilseed meal is driven by its use as a livestock feed in the meat and dairy industries and this demand is forecast to decline in 2009–10, as the demand for meat is forecast to slow.

The assumed sharp slowing of world economic growth in 2009 will have a dampening effect on the demand for meat-based products particularly in developing economies. Assuming economic growth recovers in 2010, the demand for oilseed meal is likely to increase in the latter half of the 2009–10 financial year.

The use of vegetable oil for industrial purposes (primarily biodiesel) has increased from 8.6 mt in 2000–01 to an estimated 24.8 mt in 2008–09.

The increase has been the result of government mandated blending targets. In 2009–10, the use of vegetable oil in the production of biodiesel is forecast to remain high. But vegetable oil for use in biodiesel production is forecast to ease, as lower oil prices have reduced the demand for blended fuels.

**World grain trade**

Ocean freight rates have been at historically high levels during the previous few years, adding to the cost of landed grain in importing countries. Since peaking at 10,844 in May 2008, the ocean freight rate index has been falling, averaging 1974 in mid-February 2009. Freight rates are expected to stay relatively low during 2009–10, assisting those countries importing grain.
increased by 2 mt and 7 mt, respectively, in 2008–09. In 2009–10, export supplies are forecast to decline from both countries as yields are assumed to return closer to historical averages.

Declining world grain prices and record production has prompted the Chinese Government to reduce export taxes on a number of grain products. The tax on maize (5 per cent) has been removed, and the tax on wheat has been reduced from 20 per cent to 3 per cent. These reductions in export taxes could increase China’s presence as a world grain exporter in 2009–10.

World barley trade is forecast to decline in 2009–10, as supplies in the major exporting countries of the Ukraine and the Russian Federation contract. In recent years, Saudi Arabia has consistently imported around 7 mt of feed barley (around 50 per cent of world trade), and is expected to import a similar quantity in 2009–10.

Following sharp declines in world feed barley prices in 2008, Saudi Arabia reduced its subsidy on imported barley from US$320 to US$200 a tonne in October 2008. While Australian exporters are expected to maintain shipments of barley to this market in 2009–10, they are likely to continue to face strong competition from the Russian Federation and the Ukraine.

Chinese imports of malting barley are expected to be lower in 2009–10, reflecting slower Chinese income growth. Chinese beer consumption is responsive to changes in income, and lower economic growth in 2009–10 is expected to slow the increase in Chinese beer consumption.

While the volume of world oilseed trade is forecast to decline in 2009–10, it is still one of the highest traded volumes on record.

The volume of world soybean trade has increased from around 54 mt in 2000–01 to an estimated 77 mt in 2008–09. Increased world oilseed trade has been largely the result of increased import demand from China. In 2009–10, import demand from China is forecast to decline slightly, as demand for oilseed products declines.

The share of soybean exports from Brazil and Argentina has increased at the expense of the US. In 2000–01, Brazil and Argentina accounted for around 42 per cent of world trade and the US for around 50 per cent. In 2007–08, Brazil and Argentina increased their market share to just less than half, while the share of the US declined to 40 per cent of world trade.

**Grain stocks increasing**

Global end of season wheat stocks increased to an estimated 155 mt in 2008–09, the highest since 2002–03. In 2009–10, end of season stocks are forecast to increase by around 4 mt, the second consecutive year of rising stocks.

Stocks of high quality milling wheat held by the major grain exporting countries (Argentina, Australia, Canada, the EU and the US) had been trending down since 2004–05. But in 2008–09, stocks grew by around 16 mt. Despite a forecast decline in production in 2009–10, stocks held by the five major exporters are forecast to increase, as grain consumption is expected to decline.

In the previous few years, much of the run down in stocks has been the result of lower stocks in China, China’s wheat stocks declined to a low of around 25 mt in 2005–06, and have increased in each year since, as annual production has been more than 100 mt.

**End of season wheat stocks**

World coarse grain stocks are estimated to have increased by around 14 per cent over the past two years, reaching around 180 mt as at the beginning of the 2009–10 marketing year.

**Oilseed stocks declining**

World end of season oilseed stocks are forecast to decline by 3 mt in 2009–10, to 59 mt. Since 2000–01, the majority of the world’s oilseed stocks have been held in Brazil and Argentina. Combined stocks in these two countries have increased from 20 mt in 2000–01 to around 38 mt in 2008–09. In 2009–10, stocks are forecast to increase slightly in Brazil and Argentina, as import demand softens.

**GLOBAL OUTLOOK FOR THE MEDIUM TERM**

**Price trends**

World grain and oilseed prices are projected to remain relatively high over the medium term.

Relatively low grain stocks and increased demand, particularly for biofuels production, are providing some support to grains prices over the projection period.

Grain stocks have been relatively low for the past few years, and despite increasing in 2008–09, are still low by historical standards. The stocks to use ratio for wheat is projected to be around 20.3 per cent in 2013–14, compared with 23.9 per cent in 2008–09, 28.1 per cent in early 2000, and 31.6 per cent in the late 1990s. The stocks to use ratio for coarse grains is projected to decline over the five years to 2013–14, to be 14 per cent, compared with 16.6 per cent in 2008–09.

These low stocks to use ratios will provide support to grain prices over the outlook period.

Expected productivity improvements in grains production will result in increased volumes of grains being produced over the medium term. In the past, short-term price spikes have been linked to production shortfalls in key producing and exporting countries. Low grain stocks and
increased demand for grains mean abrupt changes in production are likely to be translated quickly into significant price fluctuations.

**World demand**

Over the medium term, world demand for biofuels will continue to be a key driver of demand for grains and oilseeds, particularly in the US, EU and Asia. Ethanol and biodiesel compete directly with petroleum based petrol and diesel in energy markets.

Consequently, oil prices will continue to drive biofuel prices and influence the prices of their agricultural feedstocks.

World wheat consumption is projected to be 672 mt in 2013–14, compared with a record 648 mt in 2008–09. The largest use of wheat is for human consumption, accounting for an average of slightly more than 70 per cent of total use. The volume of wheat used per person appears to be declining. But total wheat used for human consumption has risen as populations have grown.

Use of coarse grains and oilseeds is projected to grow over the medium term. The demand for coarse grains and oilseeds for biofuels is expected to continue increasing over the projection period. Traditional uses such as in animal feed and for human consumption are also expected to increase. Coarse grains and oilseeds consumptions are projected to reach 1.1 billion tonnes and 456 mt, respectively, by 2013–14.

**Biofuels continues to drive demand**

The major biofuels producers are the US, Brazil and the EU, with each using a different feedstock in biofuels production. The main feedstocks used in biofuels production are corn in the US, sugar in Brazil, and vegetable oils in the EU.

**Industrial use**

The use of coarse grains and vegetable oil in the production of biofuels has increased dramatically since early 2000. Coarse grains use increased by nearly 50 per cent between 2000–01 and 2008–09. The use of vegetable oil has nearly tripled over this period.

Assuming economic growth strengthens in the major industrial economies after 2009–10, the price of crude oil is forecast to increase over the medium term. The price of oil (in 2008–09 dollar terms) is projected to increase by 63 per cent to reach US$72 a barrel by 2013–14. Such an outcome, if it eventuates, would lead to higher biofuels prices, improving the profitability of the biofuels industry and supporting higher production.

**Government mandates remain**

Many governments around the world support the production and use of biofuels as an alternative source of fuel, and have mandates supporting the production of these renewable fuels. These policies are a driver of increased grains and oilseed demand over the outlook period.

The EU has a mandatory biodiesel target of 10 per cent by 2020. The US has mandated biodiesel use to increase from 500 million gallons (1.9 billion litres) to 1 billion gallons (3.8 billion litres) by 2012. In Indonesia, fuel blending is not mandatory but there is a plan to increase the blend from around 5 per cent biodiesel to 10 per cent in 2010.

In Thailand, the government has a plan to replace 20 per cent of its vehicle fuel consumption with biofuels and natural gas by 2012. In the Republic of Korea, biodiesel fuel blending is expected to increase from 0.5 per cent to 3 per cent in 2012.

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US an important contributor

In the past two years there has been considerable expansion in the distillery capacity of the US ethanol industry. But the sharp decline in biofuel prices since mid-2008 is expected to lead to some consolidation of the US ethanol industry in the short term, with less profitable firms closing plants and even exiting the industry. However, over the medium term, several factors are likely to influence the profitability of the biofuels industry. These include:

• An expected recovery in the price of oil;
• The price of feedstocks;
• The continuation of government policies supporting ethanol production and consumption; and,
• The development of technologies to use cellulosic feedstocks.

The US Government mandated progressively increasing use of renewable fuels in transport in the Energy Independence and Security Act of 2007. Under the Act, the Renewable Fuel Standard was set at 9 billion gallons (34 billion litres) in 2008, and mandated to rise to 36 billion gallons (136 billion litres) by 2022. But from 2016, all the increase in the RFS mandate must be met from cellulosic ethanol (plant material other than corn starch).

This means corn starch is likely to be used as the main feedstock to produce a maximum 15 billion gallons (57 billion litres) of ethanol by 2015. This would be equivalent to 137 mt of corn, and is 70 per cent more than the quantity of corn used to produce ethanol in 2007. If the Renewable Fuel Standards are binding, these targets will provide substantial support to US domestic demand for corn over the projection period.

The US biofuels industry receives additional support through tax refunds. Between 2004 and the passage of the 2008 Farm Bill, the US Government provided a US$0.51 a gallon (US13 cents a litre) tax refund to ethanol blenders and US$1.00 a gallon (US26 cents a litre) for biodiesel produced from vegetable oil and animal fat. In the 2008 Farm Bill, if combined annual production and imports of ethanol exceed 7.5 billion gallons (28 billion litres) in any year, this refund will fall to 45 cents a gallon (12 cents a litre) in the following year. Given that the threshold was exceeded in 2008, the lower refund was introduced in 2009.

The commercial development of second generation feedstocks will be important in meeting the mandated ethanol targets over the longer term. Cellulosic ethanol, a key next generation biofuel, can be made from switch-grass, corn stover, forest waste, fast growing trees, wood chips and other plant material.

Under the 2008 Farm Bill, the US Department of Agriculture can issue loan guarantees of up to US$250 million to develop commercial plants to produce second generation biofuels. Such support is likely to accelerate the development of commercial plants producing cellulosic ethanol in the next few years.

Biodiesel could drive the emergence of other oilseed crops

The rapid expansion in the biodiesel sector has seen the industrial use of the different vegetable oils increase. Palm oil, soybean oil and canola/rapeseed oil have increased by an average 12 per cent, 54 per cent and 32 per cent a year, respectively, over the past five years.

The expansion of biofuels has been a contributing factor to the rapid rise in grains and oilseed prices during 2007 and 2008. As a result, concerns have been raised about food crops being diverted into the production of renewable fuels. Research into different feedstocks has provided alternative oilseed crops that may be used.

Jatropha is a plant commonly found in India, Central America, and North America. It produces poisonous, inedible oil that cannot be used for food purposes but can be used in the production of biodiesel. Jatropha is a hardy crop and can be grown in harsh climatic conditions. Because it can be grown in soils not suitable for other crops, the production of jatropha will not take land away from food crops.

India produces jatropha-based biodiesel and has identified around 39 million hectares of land where jatropha can be produced. Research on the production and use of jatropha is being conducted in Malaysia and Indonesia.

Livestock another major consumer

The use of grains and oilseeds for livestock feeding purposes is projected to increase towards the end of the outlook period, as demand for livestock products recovers and therefore animal numbers expand. But there is likely to be some substitution of distillers grains for cereal grains in livestock feed over the medium term.

In January 2009, the University of Minnesota's agricultural marketing resource centre projected the production of distillers grains in the US would increase each year to 2010–11. In 2009–10, the production of distillers grains is projected to increase by 16 per cent to 36 million bushels (0.9 mt). In
2010–11, production is projected to increase by a further 11 per cent to be around 40 million bushels (1 mt).

Over the same period, the University is projecting that use of distillers grains in the US livestock sector will increase. In 2009–10, domestic use is projected to increase by around 15 per cent, and in 2010–11 by a further 12 per cent, to be 31.67 million bushels (0.84 mt).

With favourable policies encouraging ethanol production in the US there is likely to be increased availability and use of distillers grains over the medium term.

**TRENDS IN GLOBAL GRAIN SUPPLY**

Since the 1970s, the area planted to grains has remained fairly constant at around 546 million hectares. Over the same period, the area under oilseeds has increased by an average 3 per cent a year. Production of grains and oilseeds has increased over this time because of productivity improvements. Wheat and coarse grains production has increased by an average 2 per cent a year since the 1970s.

Production of oilseeds has increased at an average rate of nearly 5 per cent a year since the 1970s. Over the medium term, it is expected that with continued productivity improvements, production will continue to rise. Wheat production is projected to increase to 661 mt in 2013–14, coarse grains to 1.1 billion tonnes and oilseeds to 445 mt.

**European Union**

The EU’s common agriculture 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 0 per cent.

In November 2008, the Agricultural Ministers of the EU member states agreed the arable land set aside requirement would be removed permanently. Eliminating the set aside is expected to increase the area of land available for cropping in the EU by close to 4 million hectares over the medium term.

Grain yields in the EU are among the highest in the world. However, over recent years, seasonal conditions have been less than ideal and average yields have declined. In the five years to 2007–08 wheat, barley and corn yields in the EU declined by an average 3.4 per cent, 0.7 per cent and 1.2 per cent a year, respectively. In 2008–09, with favourable growing season conditions, grain yields increased to well above their longer term averages.

Canola/rapeseed yields in the EU are also some of the highest in the world. On average over the past five years, yields in the EU have been 3 tonnes a hectare compared with 1.78 tonnes a hectare in China and 1.62 tonnes a hectare in Canada.

As demand for biodiesel is expected to remain strong in the EU over the medium term, prices for canola are likely to remain favourable. The price outlook is expected to encourage increased areas to be planted to canola/rapeseed in the EU.
In Brazil, the area of wheat and corn has increased by an average of 1 per cent a year and barley by 2 per cent a year. The area of wheat, barley and corn has also increased in Argentina by an average 1 per cent, 9 per cent and 3 per cent, respectively.

The increase in area has come about through the conversion of some rainforest and pastures to crops. The US Department of Agriculture (2003), in its report Brazil: Future Agricultural Expansion Potential Underestimated, suggests that more than 150 million hectares of land could be cleared without additional deforestation in the Amazon Basin.

Over the medium term there is potential for Brazil and Argentina to increase grains and oilseeds production through area increases and continued productivity improvements.

But investment in crushing facilities and transport infrastructure will be required for expansion potential to be met.

**The Russian Federation and the Ukraine**

Since 2000, the Russian Federation and the Ukraine have increased their presence on the world grains markets. In terms of production, the Russian Federation has increased its share of world wheat production from 6 per cent in 2000–01 to 9 per cent in 2008–09. Over the same period, barley production has increased from 11 per cent of world production to 15 per cent in 2008–09. Ukraine’s production has grown from 2 per cent of world wheat production to 4 per cent in 2008–09. Barley production in the Ukraine has grown from 5 per cent of world production in 2000–01 to 8 per cent in 2008–09.

As production has increased in these countries, so has the availability of grain for export to world markets. In 2000–01, the Russian Federation exported 1.1 mt of wheat, and in 2008–09 this has increased to 14 mt of wheat. The Russian Federation has become an important exporter of wheat to the Middle East and North Africa.

Ukraine exports of wheat, barley and corn have all increased since 2000. Wheat exports have risen from 0.1 mt in 2000–01 to 8.5 mt in 2008–09. Barley and corn exports have increased from 1 mt and 0.4 mt, respectively, in 2000–01 to 5.5 mt and 3.5 mt in 2008–09.

In 2006, an upgrade to port facilities in the Black Sea region included a new grain export terminal with capacity of 3.6 mt. Continued investment in transport infrastructure, storage facilities and port facilities will increase export capabilities. Over the outlook period, as production continues to increase grain exports could also continue to rise.

The Russian Federation imposes short-term trading polices to influence domestic prices. New tariff laws were put in place from 12 November 2007 to 30 April 2008 in an attempt to prevent exports. In response to record grain production and lower prices, the Russian Government purchased grain in an attempt to increase domestic prices.

Currently, the Russian Government is reportedly considering export subsidies and reducing grain rail freight charges to encourage exports. Changes in government policies will influence the Russian Federation’s grain exports.