

GLOBAL CROP PRODUCTION REVIEW, 2010

Prepared by USDA's Joint Agricultural Weather Facility

The following is an annual review of regional crop production, comparing 2010 with the previous year. For both the northern and southern hemisphere, these summaries reflect growing season weather for crops that were harvested in the calendar year of 2010. Unless otherwise noted, statistics quoted are based on crop estimates released by the United States Department of Agriculture in February 2011.

Wheat and Coarse Grain Summary: Global wheat production fell 5 percent in 2010. Wheat production increased in the United Kingdom, Spain, Romania, Iran, Australia, and Argentina. Production declined slightly in the United States, China, Pakistan, and France, and fell sharply in Canada, Russia, Ukraine, Kazakhstan, and Germany. Wheat production was virtually unchanged in India. The country-level changes in

2010 wheat production from 2009 are shown in Figure 1. Global coarse grain production fell 2 percent in 2010. Production increased in Spain, Romania, India, China, Brazil, Argentina, and South Africa. Coarse grain production declined in the United States, Canada, France, the United Kingdom, Germany, Poland, Italy, Hungary, Turkey, Russia, Ukraine, Kazakhstan, and Australia.

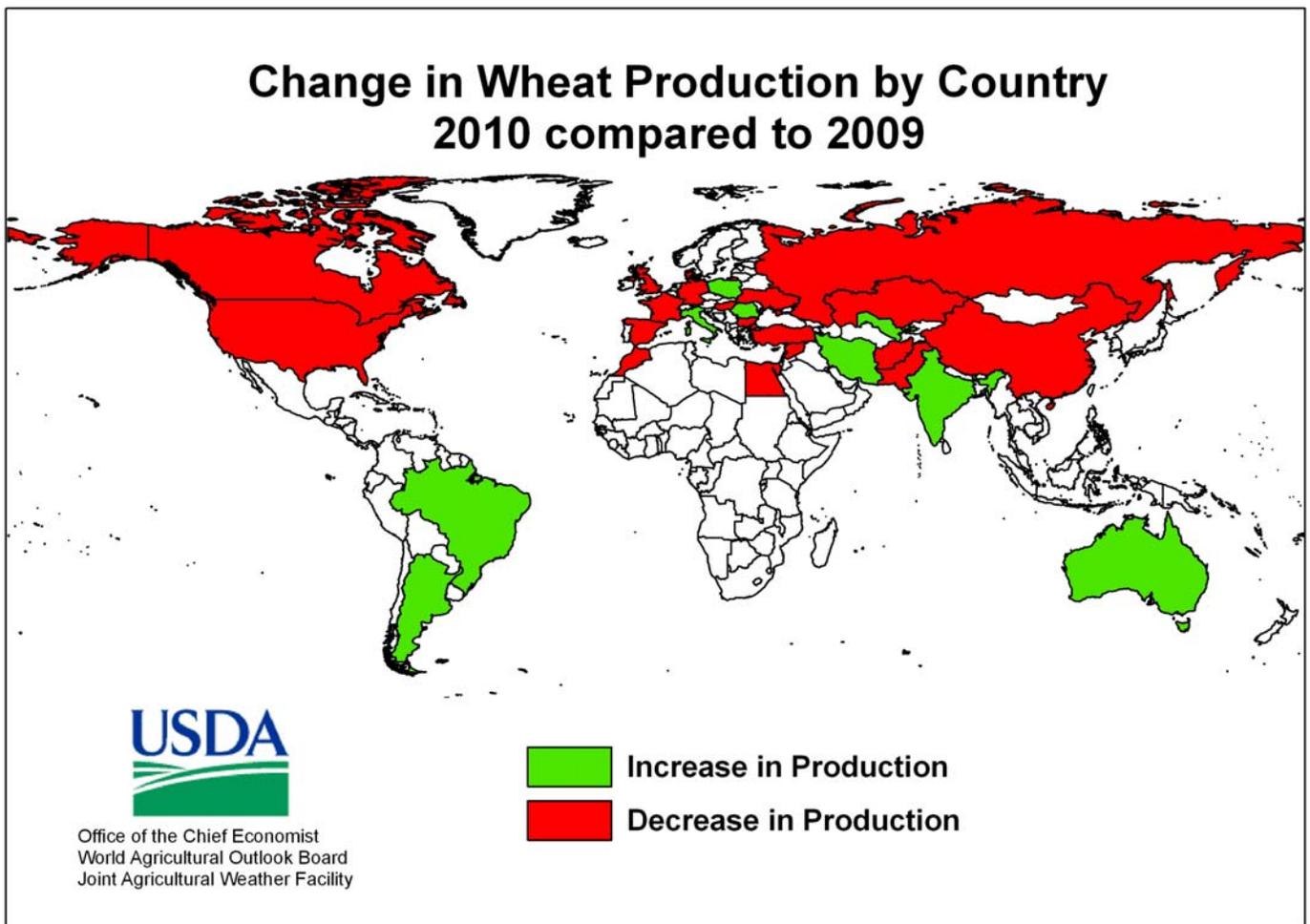


Figure 1. Change in wheat production by country (2010 versus 2009).

Oilseed Summary: Global oilseed production remained virtually unchanged in 2010. Production increased in the United States, Canada, India, Ukraine, Indonesia, Brazil, Argentina, and Australia, and declined in the European Union, Pakistan, Russia, and China.

Rice Summary: World rice production rose 2 percent in 2010. Rice production was higher in China, India, Bangladesh, and most countries in Southeast Asia. Production declined sharply in Pakistan.

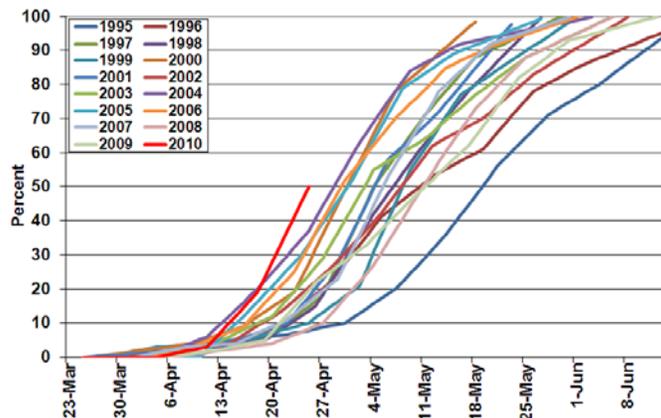
Cotton Summary: World cotton production rose 14 percent in 2010. Production increased in the United States, India, Uzbekistan, Turkey, and Argentina, and declined in China and Pakistan.

CROP PRODUCTION HIGHLIGHTS

NORTH AMERICA: In the **United States**, wheat production decreased less than one-half percent from 2009, with production totals down for winter wheat and durum but up for spring wheat. Winter wheat production was down just 3 percent, despite an 8 percent decline in harvested area. Spring wheat production climbed 5 percent from 2009, while durum production dipped 2 percent from the previous year. Growing conditions were favorable in most major winter wheat production areas, although a cool, wet spring and summer slowed crop development and harvesting across the northern Plains and Northwest.

U.S. Hard Red Winter (HRW) wheat production was up 11 percent from 2009. The HRW growing season progressed without significant weather-related issues in most areas. Soft Red Winter (SRW) wheat production showed a 41 percent decline from 2009, largely due to sharp decreases in planted and harvested area. For example, SRW production was down 53 percent in Arkansas, despite a yield increase of 10 bushels per acre. Production of white winter wheat was up 14 percent from 2009.

U.S. CORN: Percent Planted



Based on NASS crop progress data.

Figure 2. Planting pace of U.S. corn (NASS).

Meanwhile, U.S. corn production was down 5 percent from the record established in 2009. A near-record to record-setting pace for corn planting (Figure 2), development, and harvesting highlighted the season, although late-summer heat and drought development trimmed yield prospects from the eastern Corn Belt into the Mid-Atlantic States. In contrast, excessive wetness plagued parts of the western Corn Belt. U.S. corn yield was down 7 percent from the 2009 record high.

U.S. soybean production attained the second-highest level on record, down 1 percent from the mark established in 2009. U.S. yield was also 1 percent below the 2009 record.

United States cotton production was up 50 percent from 2009, largely due to a sharp increase in harvested acreage. The U.S. cotton yield was up 6 percent from 2009, while harvested area was up 42 percent from last year. Among the weather challenges in the Cotton Belt was heat and drought development from the lower Mississippi Valley into the Southeast—concerns that were partially offset by irrigation.

In **Canada**, wheat production fell about 14 percent, due mainly to a reduction in area. Similarly, barley output fell 20 percent. As in 2009, a wet spring hampered grain and oilseed planting in parts of the Prairies. Unlike the previous year, however, harvest weather was often poor, resulting in

significant delays and losses in quality. Production of corn, predominantly grown in Ontario, rose 22 percent mainly on improved yields from the previous season. Total national coarse grain production fell about 2 percent, however, as the increase in corn could not offset declines in Prairie barley output.

Canadian oilseed production rose about 2 percent. Production of soybeans, mostly produced in Ontario, rose 24 percent due to increased yields resulting from favorable growing season weather. Canola production fell more than 4 percent as a slight area increase failed to offset declining yields.

EUROPEAN UNION: In the European Union (EU-27), wheat production dropped slightly (1 percent). Spring dryness contributed to production losses in Germany (5 percent) and to a lesser extent, France (down less than 1 percent). In contrast, excessive rain and flooding caused yield and quality declines in Poland (down 3 percent) and Hungary (14 percent). Wheat yields improved over last year in Spain, where abundant spring rainfall boosted crop production by more than 15 percent. Similarly, favorable weather led to increases in wheat production in Italy and Romania (9 and 13 percent, respectively).

Europe's coarse grain production dipped almost 10 percent, due mostly to a decrease in planted area (down 9 percent). However, yields declined slightly in France, Germany, and Poland (the EU-27's three largest coarse grain producers), but were up in Spain due to favorable rainfall. EU-27 corn production dropped more than 3 percent. This decline was driven largely by a 12 percent decline in France, where drier-than-normal weather during the summer across southwestern growing districts reduced soil moisture as the crop progressed through reproduction and into the filling stage of development. Likewise, four of the EU-27's five largest barley producers experienced declines of 15 percent or more (Germany, France, United Kingdom, and Denmark); smaller planted area and lower yields due to spring and early summer

dryness were the primary factors. Only Spain reported year-to-year gains (up 14 percent) in response to favorable rainfall and plentiful irrigation reserves.

In 2010, oilseed production in the European Union dropped nearly 4 percent. Four of the top five oilseed producing countries reported losses of 8 percent or more, with only Romania (up 25 percent) reporting year-to-year gains. In particular, rapeseed production declined 6 percent in the EU-27, with losses in Germany and France (6 and 9 percent, respectively) partly due to spring and early summer dryness. In contrast, excessive wetness and flooding across Poland contributed to an 18 percent decline in rapeseed production. Sunflower production in the European Union dropped 1 percent, mostly in response to lower planted area.

FORMER SOVIET UNION: In **Russia**, total wheat production for 2010 was down more than 30 percent from the previous year due to extreme drought and unrelenting, damaging heat (Figure 3). Despite mostly favorable overwintering conditions and adequate to abundant early spring moisture, drought became firmly entrenched over western Russia's winter wheat areas as the crop entered the flowering and filling stages of development. The drought began in early April across winter and spring wheat areas of the southern Volga District, and expanded westward into winter wheat areas of the Central District and northern Southern District by late May. Farther east, abnormal dryness began to afflict heading to flowering spring wheat in the Urals and western Siberia District by late May and early June, with little if any soil moisture available as the crop entered the filling stage. The drought of 2010 will go down as one of the most severe in the past 100 years, and ranked as the worst in at least the past 30 years in the Central, Volga, and Urals Districts. In contrast, eastern portions of the Siberia District escaped the drought, although abnormally dry weather arrived in time to impact filling spring wheat by late July. To make matters worse, frequent occurrences of damaging heat (highs greater than 35°C) accompanied the extreme dryness. From mid-May to mid-June, highs

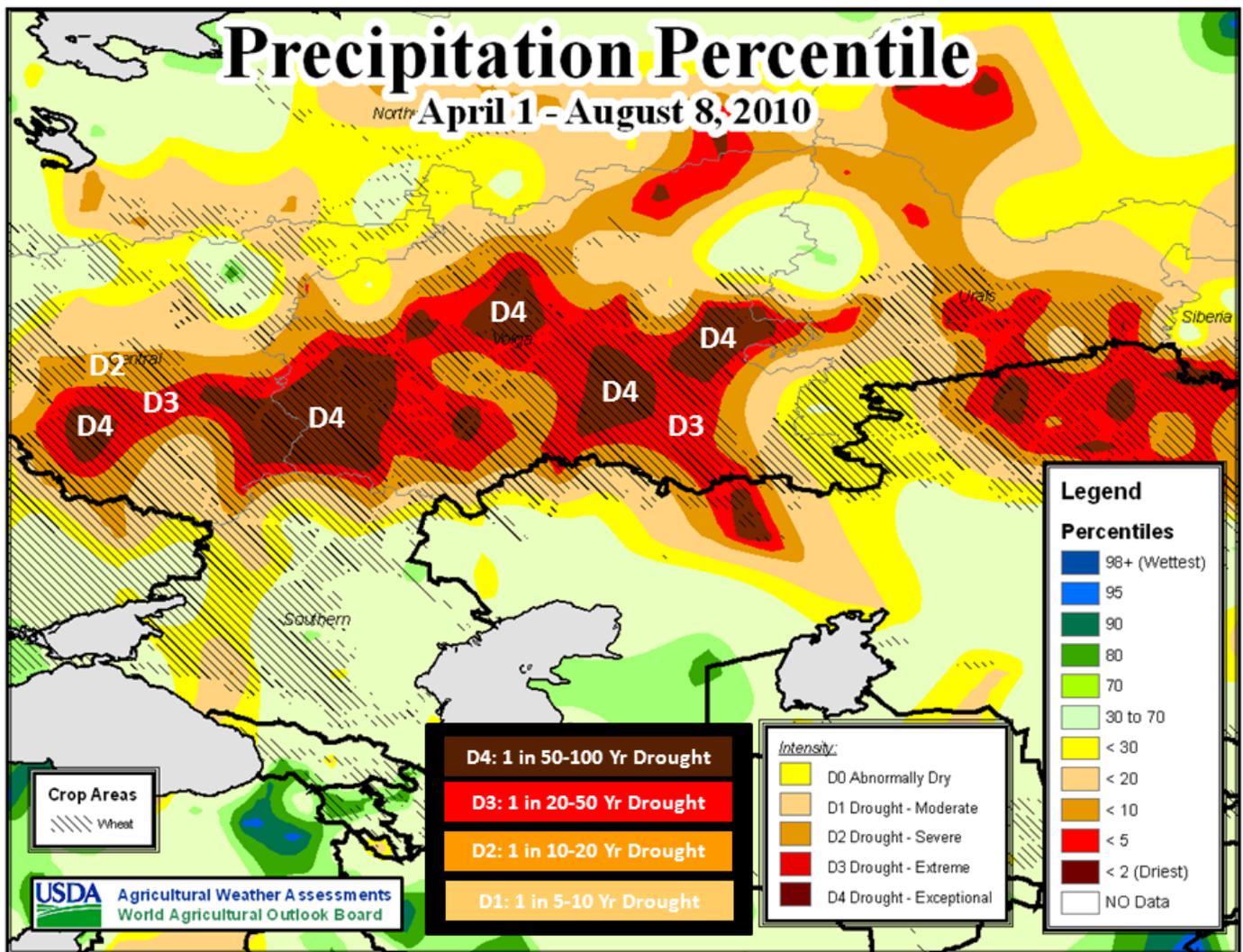


Figure 3. Depiction of severe summer drought conditions in Russia.

exceeded 35°C (the damage threshold for reproductive to filling wheat) on several occasions in the Southern District and southern portions of the Volga District. Damaging heat afflicted reproductive to filling spring wheat grown in the southern Volga with startling frequency (more than 20 days), and by early summer impacted crops as far east as the Siberia District. Key winter wheat areas in southern portions of the Southern District were spared from the drought, although untimely dryness in late May and early June coincided with the flowering and filling stages of development. During this time, occurrences of stressful (30°C) or damaging heat (35°C or greater) were noted in the Southern District, reducing the yield potential of late-filling winter wheat. In summary, one of the driest,

hottest periods on record caused widespread yield losses over much of Russia.

Impacts of the Russian heat and drought were also noted on most other crops grown in the region. Coarse grain production was down more than 48 percent, with corn production down more than 20 percent as the summer heat wave slashed yields. Russia's barley production dropped an astounding 54 percent, while oats and rye were down 41 and 62 percent, respectively. Russia's total oilseed production was somewhat less impacted by the heat and drought, with year-to-year losses of 11 percent. Of the major oilseeds, rapeseed losses were the most prominent (down 25 percent), while sunflowers were far enough developed to better withstand the heat and drought (down 14 percent).

In **Ukraine**, wheat production for 2010 was down 19 percent, as heat and drought in northern and eastern portions of the country contrasted sharply with wetter-than-normal weather in western Ukraine. Winter grains were protected from winterkill by a deep snowpack, although ice crusting was reportedly an issue. However, the bigger concern for Ukraine's wheat was the westward expansion of heat and drought from Russia, which arrived as the crop entered the filling stage of development. Conversely, the excessive wetness in western Ukraine caused quality declines and harvest delays.

Ukraine's coarse grain and oilseed production was mixed. Barley, which consists of winter and spring varieties, was down 28 percent, partly due to yield losses of almost 20 percent. Total corn production rose 13 percent, although this was attributed to a 24 percent increase in planted area; yields were down more than 8 percent versus last year due to heat during the filling stage. In contrast, sunflower production increased 6 percent; an increase in planted area (up 8 percent) in addition to the crop being more tolerant of drought and heat contributed to the production gains. Ukraine rapeseed, which also consists of both winter and spring varieties, declined 23 percent primarily due to the expanding heat and dryness in the east.

In **Kazakhstan**, spring grains were likewise adversely impacted by the extreme drought and intense heat that slashed crop production in Russia. A lack of rainfall beginning in early April rapidly diminished soil moisture for northern Kazakhstan's spring wheat and barley; drought and heat persisted through the summer with only limited relief. Consequently, wheat and barley production plunged 43 and 50 percent, respectively, over last year. Similarly, drought-slashed yields for coarse grains resulted in year-to-year production losses in excess of 41 percent.

Cotton production in the Former Soviet Union, grown primarily across the south, rose 20 percent. The increase in production was largely attributed to region-wide yield gains, with production going up 19 percent or more in **Uzbekistan**, **Turkmenistan**,

and **Tajikistan**. However, production dipped over 20 percent in Kazakhstan (yields down 27 percent).

MIDDLE EAST: In the Middle East, growing conditions were mixed when compared with last year. In **Iran**, wheat production jumped 20 percent due to an increase in planted area as well as favorable spring and early summer rainfall. In contrast, a drier-than-normal spring coupled with above-normal temperatures resulted in a drop in wheat production in **Turkey** and **Syria** (8 and 10 percent, respectively). Cotton production in the region increased, as gains in Turkey and Iran (29 and 17 percent, respectively) more than offset a 25 percent decline in Syria. Syria producers continued to battle long-term drought and above-normal temperatures, which maintained higher-than-normal irrigation demands.

AFRICA: In northwestern Africa, a second consecutive year of near- to above-normal rainfall led to generally favorable prospects for winter grains. However, a dry start to the wet season led to poor soil moisture for the establishment of wheat and barley, most notably in **Morocco** and western **Algeria**. Consequently, Moroccan wheat production dropped 23 percent from last year's record high, while Algeria's barley production dropped more than 37 percent (also from a record high). Farther east, rainfall distribution was more uniform, although **Tunisia's** small grain production nevertheless slipped from last year's record highs.

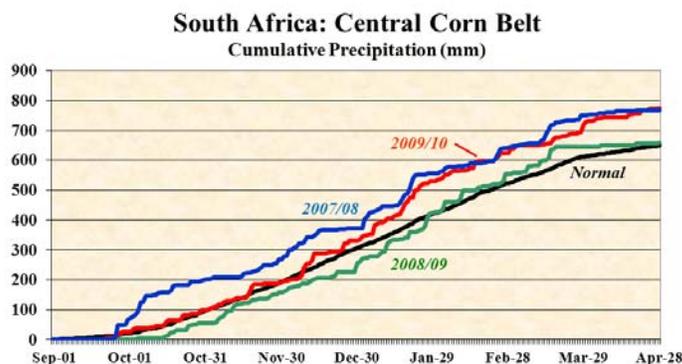


Figure 4. Growing season rainfall in the South African corn belt for the 2007/08, 2008/09, and 2009/10 seasons.

In **South Africa**, corn production rose 7 percent

from the 2008/09 season due to a substantial (12 percent) increase in area. Yields fell about 5 percent from the previous year's record levels, though the country as a whole experienced a third consecutive year of favorable growing conditions (Figure 4) and, nationally, average yields were the second highest on record (4.11 metric tons per hectare versus 4.34 in 2008/09).

ASIA: In **China**, winter wheat production remained virtually unchanged compared to last year, as favorable moisture conditions and good harvest weather prevailed across the North China Plain. In contrast, corn production rose 6 percent over last year due to more consistent rainfall in July and August than occurred in 2009 across major producing zones in northeastern China.

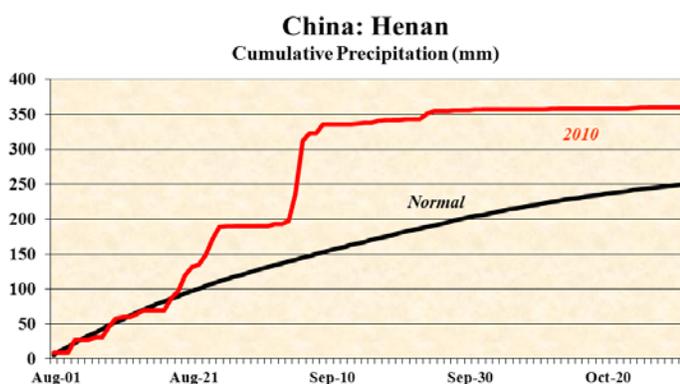


Figure 5. Cumulative rainfall for in Henan, China, reflecting late-summer wetness (2010).

Rapeseed production in China fell 6 percent compared to last year as adverse weather in early spring lowered overall yields. Soybean production also fell slightly (2 percent) from reduced planted area amid growers' concerns over low returns. Late-season wetness across eastern growing areas (Figure 5) lowered yields, and along with a small decline in area, lowered cotton production by over 6 percent from 2009.

Rice production remained generally unchanged in China and **Japan**, rising a modest 2 percent on improved yields. In contrast, excessive wetness throughout the growing season reduced rice production on the **Korean Peninsula**. Rice production rose nearly 5 percent in **Laos** and

Indonesia and 7 percent in the **Philippines** compared to last year with improvements in yields as a result of increased rainfall in these areas. Although, prolonged rainfall in Indonesia had a negative effect on rice quality as moisture increased broken rice. Elsewhere in Southeast Asia, rice production remained unchanged from last year.

Wheat production was flat in **India** and **Pakistan** compared to 2009. Unlike in Pakistan, though, where area and yields were unchanged, wheat in India experienced a slight reduction in yields due to heat stress at maturity, which offset increases in area.

Cumulative Rainfall (mm)
July 11 - August 21, 2010

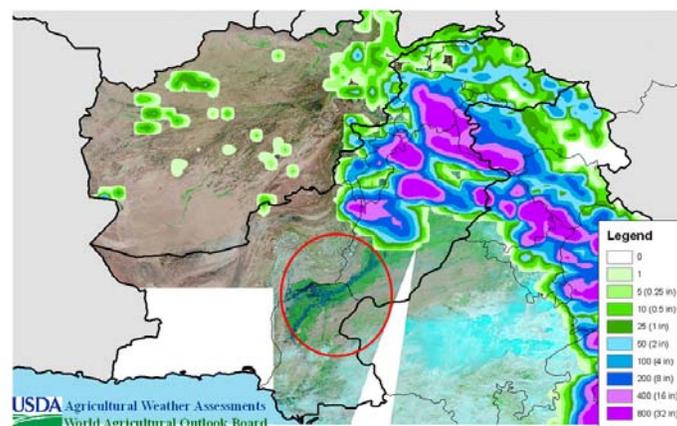


Figure 6. Cumulative precipitation in the upper Indus Valley ahead of 2010 flooding.

Rapeseed in India escaped the high temperatures of March 2010; subsequently, yields and production rose nearly 10 percent. In addition, late-season monsoon rains of 2009 aided in establishment of the crop with sufficient carry-over moisture. Similarly, a more favorable monsoon in 2010 boosted soybean production in India nearly 7 percent from last year.

An improved monsoon increased rice production over last year across India and **Bangladesh** despite pockets of dryness. In Pakistan, however, widespread flooding along the Indus River (Figure 6) caused severe damage and crop loss, resulting in a 25 percent reduction from 2009's production level.

Vastly improved moisture conditions in India resulted in an increase in cotton production of 12 percent, although late-season rainfall reduced yields in some northern and western producing areas. In contrast, flooding in Pakistan that resulted in crop damage to rice also caused significant damage to cotton. Cotton in Pakistan was reduced by over 8 percent from last year.

SOUTH AMERICA: In **Argentina**, coarse grain production rose more than 40 percent due to markedly better weather conditions following one of the worst droughts in memory (Figure 7). Corn production rose 47 percent on increased area and record yields (8.44 metric tons per hectare). Argentine wheat production was similar to the previous year; due to lingering drought at planting time, area fell about 30 percent, but improved weather resulted in yields over 40 percent above those recorded in 2008/09.

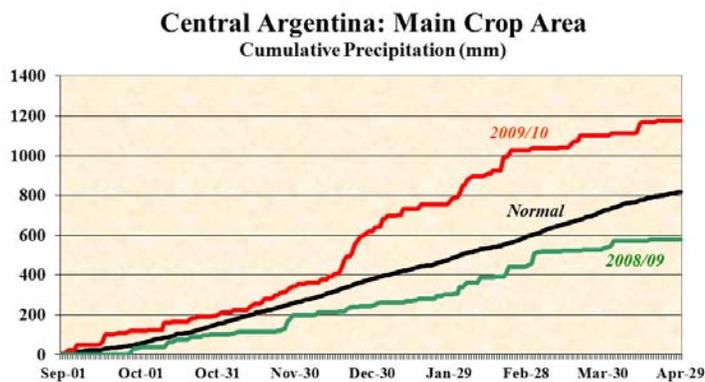


Figure 7. Comparison of seasonal cumulative rainfall during the 2008/09 and 2009/10 growing seasons (September to May) in central Argentina.

Argentine soybean production jumped 70 percent from the previous season's drought-affected levels, owing to record yields (2.93 metric tons per hectare) and near-record area (18.6 million hectares). Similarly, cotton production jumped over 60 percent in Argentina, as recovery from the previous season's drought engendered large increases in both area and yields.

In **Brazil**, corn production rose 10 percent from the previous season as record yield (4.34 metric tons per hectare) more than offset a reduction in area. In

contrast, wheat production in Brazil fell about 15 percent due mainly to a drop off from the previous year's near-record yields.

Brazilian total oilseed production rose 18 percent, largely due to improved soybean production from the previous year. Because of favorable growing-season weather in nearly all major production areas, Brazil experienced national-level records in both soybean yield (2.94 metric tons per hectare) and area (25.5 million hectares), resulting in a record production of 69 million metric tons. Cotton output remained fairly stable in Brazil.

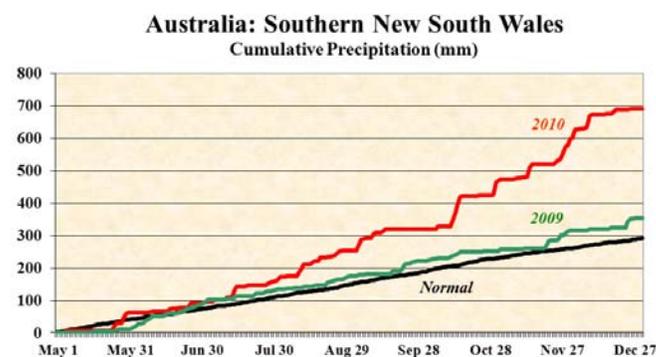


Figure 8. Comparison of seasonal cumulative rainfall during the 2009 and 2010 growing seasons (May to December) in southern New South Wales, Australia.

AUSTRALIA: Nearly ideal growing conditions throughout most of the Australian wheat belt buoyed 2010 farm output, helping national wheat and barley production increase 14 and 24 percent, respectively, relative to 2009 estimates. In southern and eastern Australia, near- to above-normal rainfall (Figure 8) and relatively cool weather benefited jointing, heading, and filling winter grains. Frequent, heavy rainfall during harvesting reduced grain quality, caused severe local flooding, and slowed fieldwork, but crop losses were relatively small compared with national production estimates. More significant losses were reported in Western Australia, where increasing dryness during the growing season eventually evolved into drought. The drought caused wheat and barley production to fall well short of potential in Western Australia, but the very favorable growing conditions elsewhere in the wheat belt more than offset these crop losses.

2010 Australia cotton production increased 19 percent relative to 2009 estimates. Near-normal spring rainfall aided planting and early development. Above-normal rainfall followed during the summer, maintaining reservoir levels for irrigated crops and providing timely moisture for dryland cotton as the crops advanced through reproduction.