GLOBAL CROP PRODUCTION REVIEW, 2011

Prepared by USDA's Joint Agricultural Weather Facility

The following is an annual review of regional crop production, comparing 2011 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 2011. Unless otherwise noted, statistics quoted are based on crop estimates released by the United States Department of Agriculture in February 2012.

Wheat and Coarse Grain Summary: Global wheat production rose 6 percent in 2011. Wheat production increased in Canada, the United Kingdom, Spain, Romania, Turkey, Morocco, Russia, Ukraine, Kazakhstan, China, India, and Australia. Production declined in the United States, France, Germany, Iran, and Argentina. The country-level changes in 2011 wheat production from 2010 are shown in Figure 1. Global coarse grain production rose 4 percent in 2011. Production increased in the United Kingdom, France, Spain, Italy, Hungary, Romania, Turkey, Russia, Ukraine, Kazakhstan, China, Brazil, and Argentina. Coarse grain production declined in the United States, Canada, Germany, Poland, India, and South Africa.

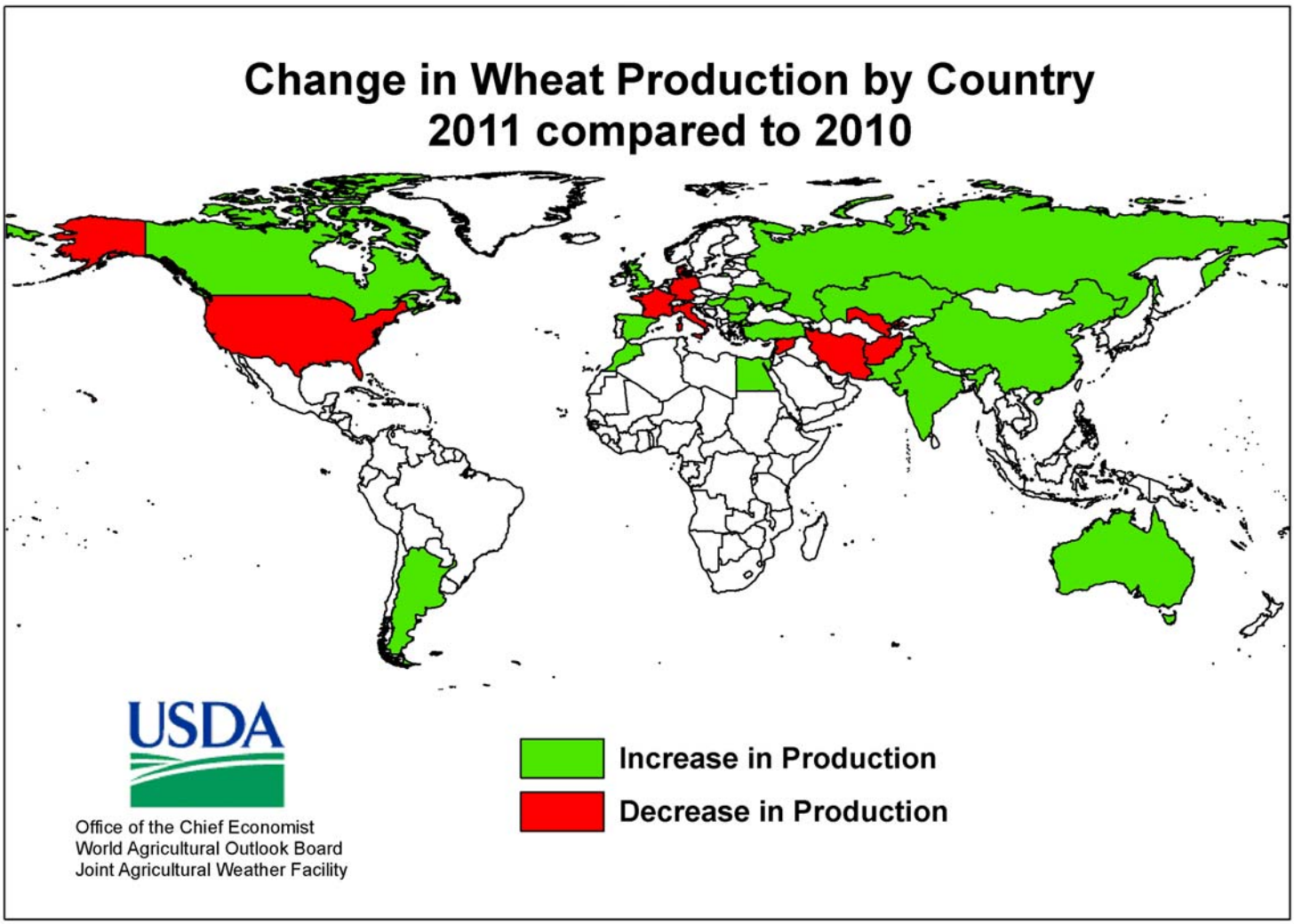

Figure 1. Change in wheat production by country (2011 versus 2010).

Oilseed Summary: Global oilseed production remained virtually unchanged in 2011. Production increased in Canada, Russia, Ukraine India, China, and Brazil, and declined in the United States, the European Union, Indonesia, and Argentina.

Rice Summary: World rice production rose 3 percent in 2011. A favorable Asian monsoon boosted rice production in China, India, Bangladesh, and most countries in Southeast Asia. Production was also up sharply in Pakistan, reflecting the recovery from last year's flooding.

Cotton Summary: World cotton production rose nearly 6 percent in 2011. Production increased in China, India, Pakistan, Uzbekistan, Turkey, Argentina, and Australia, and declined in the United States.

CROP PRODUCTION HIGHLIGHTS

NORTH AMERICA: In the **United States**, wheat production decreased 9 percent from 2010, with production totals down dramatically for spring wheat and durum but up slightly for winter wheat. Winter wheat production was up 1 percent, as generally favorable conditions in northern production areas helped to offset drought-related losses in the south-central U.S. Spring wheat production fell 26 percent from 2010, while durum production plunged 52 percent. On the northern Plains, spring wetness and flooding reduced the area available for spring wheat and durum planting.

U.S. Hard Red Winter (HRW) wheat production was down 23 percent from 2010. The HRW spring growing season featured cool, wet conditions in northern areas but intensifying heat and drought in Oklahoma and Texas. Nearly two-thirds (64 percent) of the Texas winter wheat crop was abandoned due to drought. Farther east, Soft Red Winter (SRW) wheat production rebounded sharply during a mostly favorable growing season, up 93 percent from 2010. Record-high SRW yields were reported in Alabama, Louisiana, Michigan, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. In the northwestern U.S., production of white winter wheat was up 12 percent from last year.

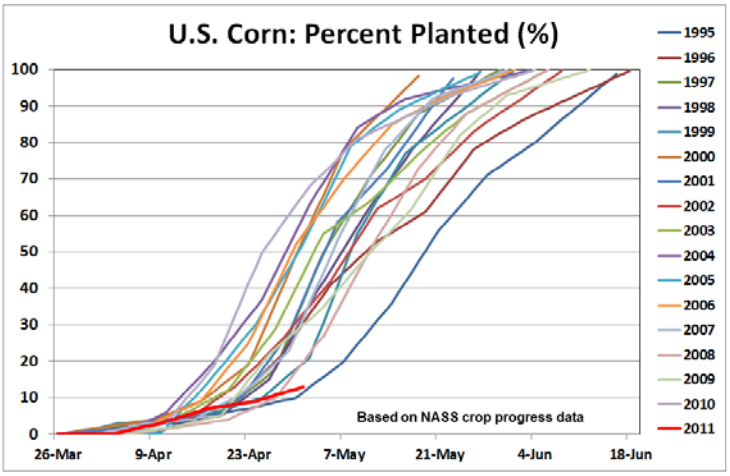

Figure 2. U.S. corn planting progress (1995-2011); Source: USDA National Agriculture Statistics Service.

Meanwhile, U.S. corn production was down 1 percent from 2010, despite a 3 percent increase in harvested area. Last year's near-record to record-setting planting pace was followed by one of the slowest corn planting paces on record (Figure 2), leaving a portion of the crop—mainly across the southern and eastern Corn Belt—vulnerable to heat- and drought-related damage when hot, dry weather arrived during July and August. U.S. corn yield was down 4 percent from last year.

U.S. soybean production attained the sixth-highest level on record, but was down 8 percent from 2010. The decline was a combination of a lower yield (down 5 percent from 2010) and a smaller harvested area (down 4 percent from last year). In some soybean production areas, wet weather during planting and harvest contrasted with unfavorably hot, dry conditions during crop reproduction.

U.S. cotton production was down 13 percent from 2010 due to a record-setting drought in the south-central U.S. Secondary factors included drought in the Southeast and a late-August strike from Hurricane Irene in North Carolina and Virginia. Nationally, cotton yield was down by 5 percent,

while harvested area was down 9 percent. More than half (59 percent) of the Texas cotton crop was abandoned in 2011, breaking the state record of 42 percent set in 1998 (Figure 3). Nationally, a record-high 34 percent of the cotton acreage was abandoned in 2011.

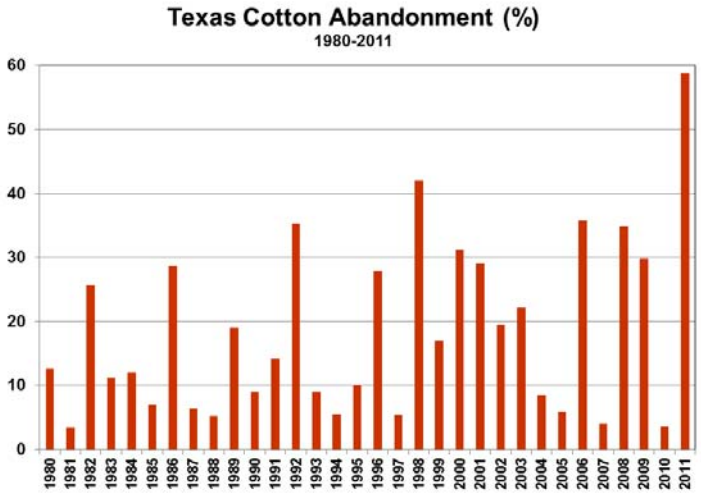

Figure 3. Texas cotton abandonment (1980-2011); Source: USDA / National Agricultural Statistics Service

In **Canada**, national total wheat production rose 9 percent, due to an increase in both yields and area. Barley output was virtually unchanged. Significant spring flooding affected farmlands in the eastern Prairies, initially leading to reductions in planting intentions of spring wheat. However, nearly ideal conditions the remainder of the year aided spring wheat development throughout the Prairie Provinces, and harvest weather was overall favorable in both the Prairies and Ontario (winter wheat). In contrast, the warm, dry conditions favoring Ontario's winter wheat harvest led to declines in corn production of 9 percent from the previous year's record.

Canadian rapeseed output jumped 11 percent from 2010, with both area and production reaching record levels. Production of soybeans, mostly grown in Ontario, was down slightly due to lower yields caused by the untimely summer dryness. In all, total Canadian oilseed production was about 8 percent higher than the previous year.

Mexican corn production was negatively impacted by both an unusual freeze in the main winter production areas of Sinaloa (Figure 4), and a summer drought across major rain-fed production areas of the southern plateau. As a result, total annual production fell 3 percent from the combined losses. The Sinaloa freeze also impacted winter-grown fruits and vegetables, including tomatoes and peppers, which are produced for export.

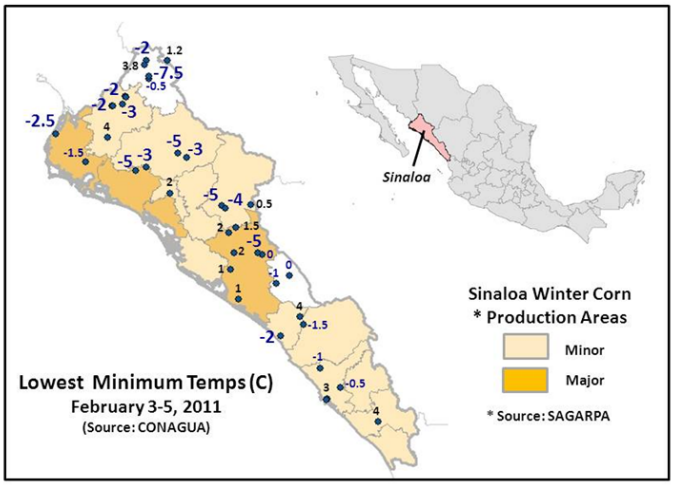

Figure 4. Minimum temperatures recorded in Sinaloa, Mexico, February 3-5, 2011.

EUROPEAN UNION: In the European Union (EU-27), total wheat production increased slightly (1 percent). For the second consecutive year, spring dryness (Figure 5) contributed to production losses in **France** (6 percent) and **Germany** (3 percent). In contrast, excessive early-summer rain and flooding caused quality declines in **Poland**. Wheat yields improved for a second straight year in **Spain**, where abundant spring rainfall boosted crop production by more than 14 percent. Similarly, favorable weather led to increases in wheat production in **Hungary** and **Romania** (8 and 26 percent, respectively). In **Italy**, a 6 percent drop in production was attributed to heavy rainfall during the autumn planting season, which reduced acreage by 8 percent.

Europe's overall coarse grain production improved 6 percent, mostly reflecting a 5 percent increase in

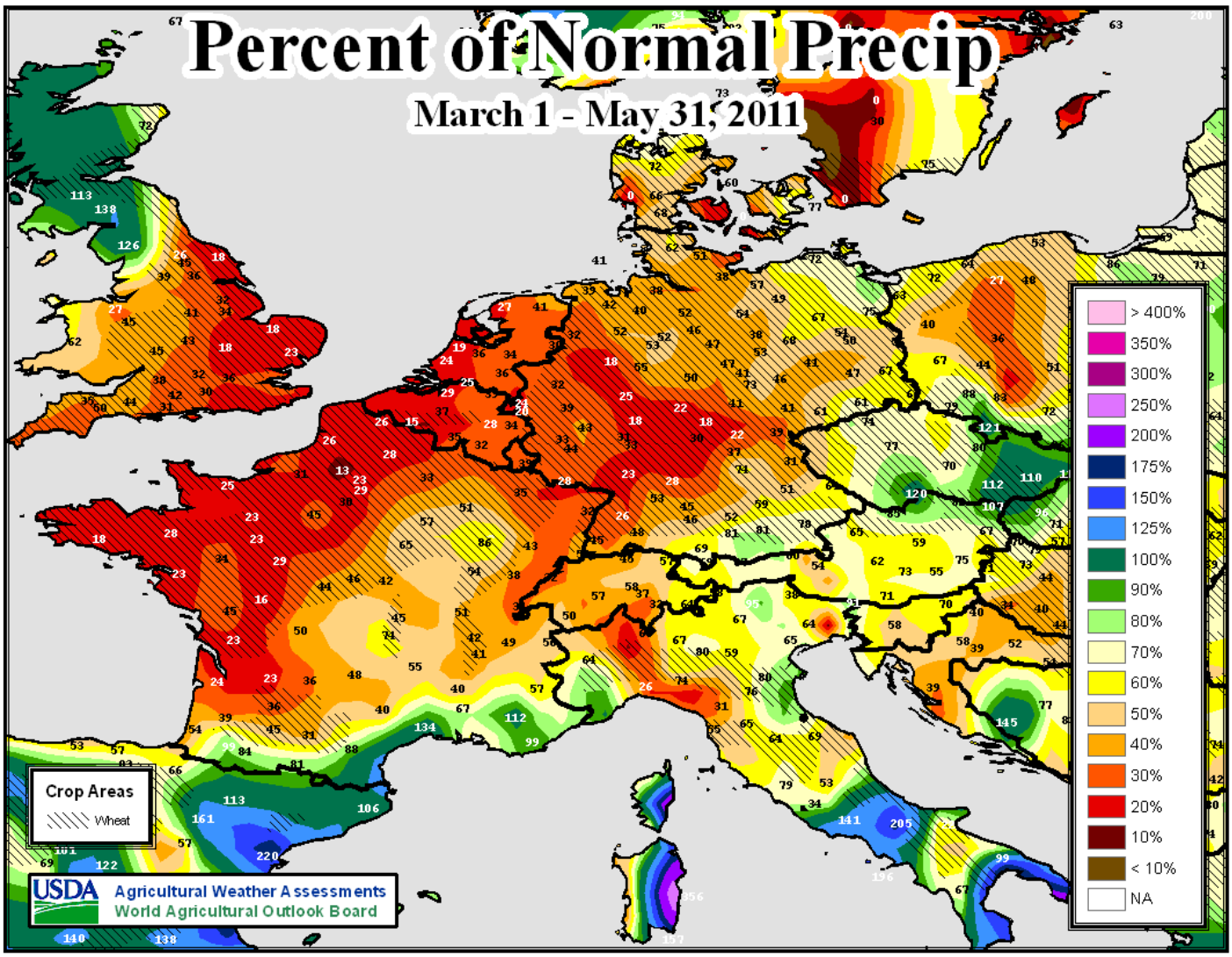

Figure 5. Percent of normal rainfall in Europe observed during the spring of 2011 (March 1-May 31).

yields. However, rye and barley production declined due to decreases in planted acreage. Two of the EU-27's five largest barley producers experienced declines of 12 percent or more (Germany and France), while Spain, the **United Kingdom**, and **Denmark** countered these losses with production gains of at least 4 percent each. Meanwhile, EU-27 corn production increased by 16 percent courtesy of increased acreage (up 10 percent) and improved yields (up 5 percent). Despite spring dryness, favorable summer rainfall in southwestern France (Figure 6) contributed to a 10 percent yield increase (production up 13 percent). Likewise, frequent summer rain coupled with a lack of extreme heat boosted yields 3 percent in Italy, Hungary, and Romania, with the total corn production up 12, 15, and 17 percent, respectively. Similarly, favorable rainfall on the Iberian Peninsula boosted corn yields 13 percent (production increased 14 percent).

In 2011, oilseed production in the European Union was largely unchanged as yield losses were offset by similar increases in planted area. EU-27 rapeseed production dropped 8 percent, as unfavorably dry spring weather contributed to yield declines of almost 30 percent in Germany. In Poland, a late-spring freeze coupled with heavy early-summer rainfall cut yields and harvested area by 13 and 5 percent, respectively (net production

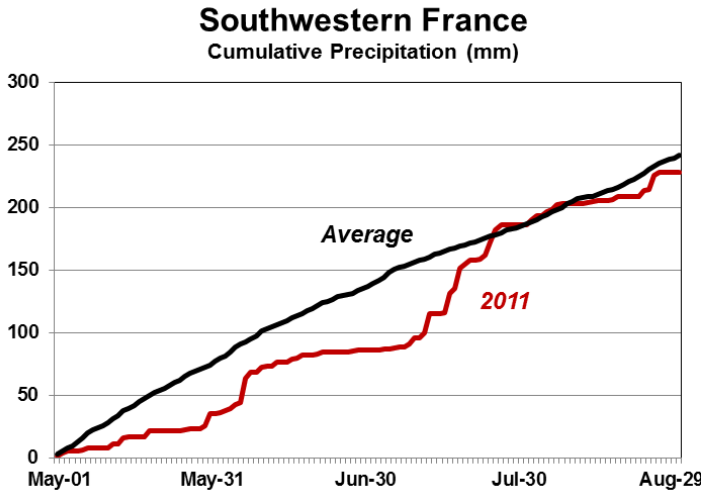

Figure 6. Cumulative growing-season rainfall for corn in southwestern France.

loss of 17 percent). In contrast Europe's sunflower production jumped 17 percent, driven largely by an increase in area (up 11 percent), but likewise accompanied by a 5 percent increase in yields. The EU-27's top two sunflower producers, France and Hungary, saw yields increase by 9 percent or more, as plentiful summer rainfall improved soil moisture for sunflower growth. Spain, Europe's third largest sunflower producer, saw both planted area and production increase nearly 20 percent.

FORMER SOVIET UNION: In **Russia**, total wheat production for 2011 shot up 35 percent. Winter wheat was adequately protected from winterkill by a deep, persistent snowpack. Meanwhile, favorable spring and summer rainfall boosted yields, in contrast to last year's extreme drought and damaging heat (Figure 7). Farther east, an unusually deep winter snow cover rapidly melted, allowing producers to sow spring grains in a timely fashion. Little if any excessive summertime heat in eastern Russia coupled with near-normal rainfall and favorable harvest weather contributed to a vastly improved Russian spring wheat crop. Consequently, Russia's total wheat yield jumped 40 percent, more than offsetting a 4 percent drop in harvested area. Likewise, Russia's rye production increased 81 percent despite an 8 percent decline in area, as a marked improvement in weather versus last year caused yields to nearly double (up 96 percent). As with small grains, Russian coarse grain production increased across the board due to the vastly improved spring and summer growing conditions. Oat and barley production went up 66 and 103 percent, respectively, while corn production reported gains of more than 115 percent. Sunflower production also exhibited yield and area increases of more than 30 percent, contributing to year-to-year production gains of 80 percent.

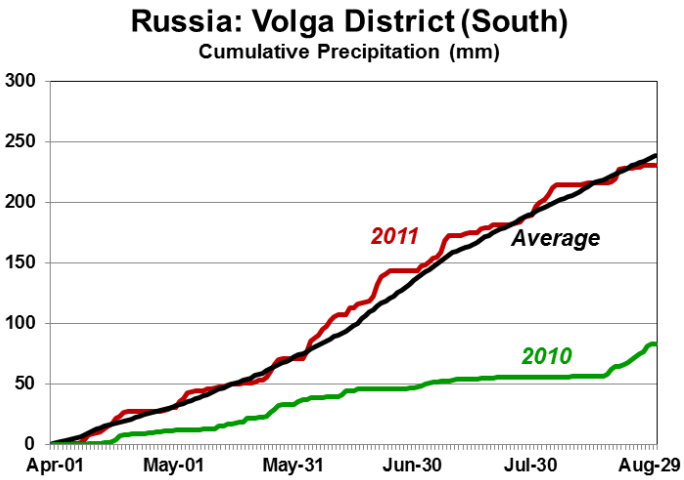

Figure 7. Cumulative rainfall for Russia's Volga District (2011 versus 2010).

As with Russia, **Ukraine** experienced vastly improved growing-season weather versus 2010. Pockets of winterkill caused some damage, but overall beneficial winter snow cover kept losses relatively low. Early concerns over recurring drought were fueled by a drier-than-normal spring, although the largest precipitation deficits were reported in the lower-producing northern and western crop districts. By late spring and early summer, a return of wet weather allayed drought fears and boosted prospects for grains and oilseeds. Wheat production increased 31 percent (yields up 23 percent), while production of barley and rye rose 6 and 19 percent, respectively. Ukraine, the world's largest sunflower producer, saw production of the key oilseed increase more than 13 percent, with weather-driven increases in yields (up 5 percent) accompanied by a 7 percent increase in harvested area. Spring dryness did have some impacts on rapeseed, which experienced only

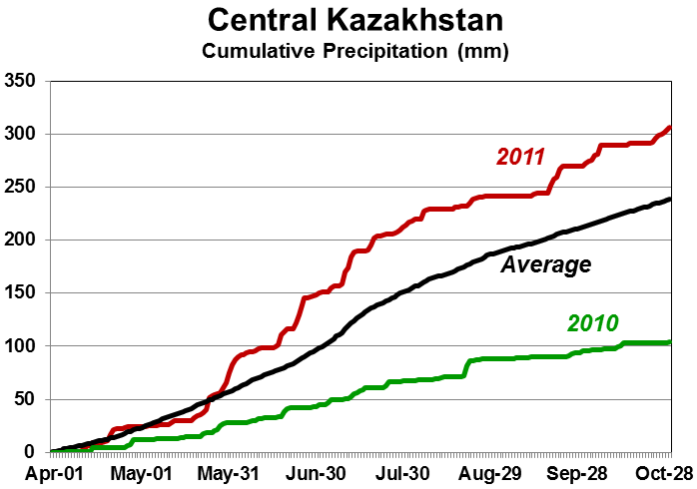

Figure 8. Cumulative rainfall for central Kazakhstan (2011 versus 2010).

modest gains (production up 2 percent). Unlike last year, when summer heat and drought slashed summer crop yields, favorable summer rainfall and seasonable temperatures improved corn yields (up 43 percent), which contributed to an 89 percent increase in production.

Elsewhere in the Former Soviet Union, winter and spring crops saw similar weather-related gains versus 2010. **Belarus**, the world's third largest rye producer, saw yield increases of more than 20 percent for both oats and rye, resulting in productions increases of 81 and 104 percent, respectively. More notably, **Kazakhstan's** spring wheat production jumped over 130 percent versus last year – when drought and heat caused significant yield declines – to establish new record highs. Abundant spring and summer rainfall coupled with nearly ideal harvest weather resulted in yield increases of more than 140 percent in Kazakhstan (Figure 8).

Cotton production in the Former Soviet Union dipped 2 percent. Production was largely mixed, with yield-assisted production gains in **Tajikistan** offset by lower yields and production in **Turkmenistan** and **Kazakhstan** (production decreased 20 and 9 percent, respectively). The region's largest cotton producer, **Uzbekistan**, saw minor yield losses (down 1 percent) accompanied by a 3 percent increase in planted area, resulting in a 2 percent increase in production.

MIDDLE EAST: In the Middle East, favorable growing conditions in the west contrasted with untimely drought in central and eastern crop districts. **Turkey's** wheat and barley yields improved 15 percent over last year, boosting production by roughly 10 percent. Consistent rain in the fall and spring coupled with a lack of winterkill led to the pronounced yield gains. Meanwhile, persistent autumn dryness in **Syria**, **Iraq**, and **Iran** depleted soil moisture for winter wheat and barley growth. Consequently, grains entered the winter poorly established, and emerged in the spring in poor condition. A resumption of spring rainfall allowed for some crop recovery, although the impacts of the autumn drought were not totally reversible. As a result, wheat production dropped in Syria (down 10 percent), Iran (11 percent), and Iraq (15 percent) due to yield losses of 9 to 19 percent. Similar impacts on total barley production were also noted in all three countries (down 7 to 14 percent). Cotton production in the region increased, due in part to abundant spring rains which recharged reservoirs and irrigation supplies. Double-digit production gains were noted in Turkey (48 percent), Syria (22 percent), and Iran (14 percent).

AFRICA: Across northwestern Africa, wheat and barley production was mixed, although the overall favorable 3-year trend for grain production continued. In **Morocco**, wheat production jumped 23 percent, with consistent season-long rainfall contrasting with last year's dry autumn. Conversely, **Algeria** wheat and barley production dropped 10 percent due to a drier-than-normal spring, which reduced yields (also down 10 percent) as grains advanced through reproduction. Farther east, consistent, occasionally heavy rain boosted grain production in **Tunisia**, with wheat and barley up 58 and 172 percent, respectively.

In **South Africa**, corn production fell nearly 20 percent on declines in both yield and area. After a favorable start to the growing season, unseasonable warmth and dryness (Figure 9), contrary to what is normally expected during a La Niña season, dropped yields below 4 metric tons per hectare

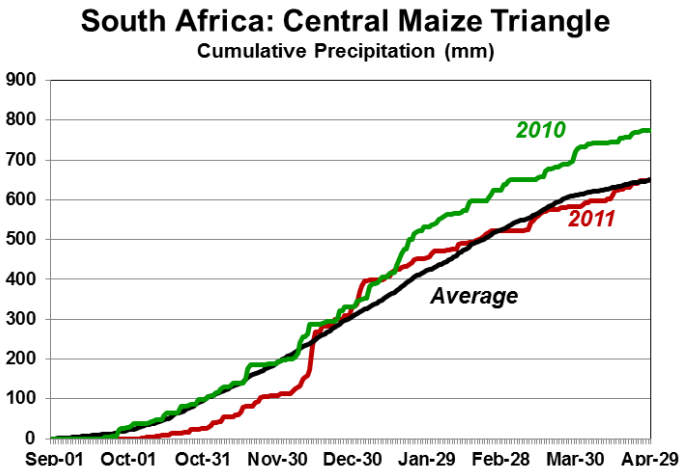

Figure 9. Cumulative rainfall for South Africa's central corn production areas (2011 versus 2010).

(3.82) for the first time since the 2007/08 season. Conditions were also reportedly unfavorable for production of sugarcane in key rain-fed growing areas.

ASIA: In **China**, despite drier-than-normal conditions on the North China Plain through the winter, wheat production reached near record levels. Moisture reserves were adequate for autumn establishment, and consistent spring rainfall during reproduction and favorably dry weather during harvest boosted wheat prospects. Similar conditions in the Yangtze Valley resulted in slightly higher yields for winter rapeseed; however, due to a reduction in area, production was virtually unchanged. Rice production increased slightly in China, despite dry spring weather for early double-crop rice. More favorable moisture conditions prevailed, however, during the summer, aiding single-season and late double-crop rice output. Corn production reached record levels on increased area in Manchuria and record yields were recorded, despite some dryness and unfavorably warm weather in the northeast growing region. A reduction in soybean planted area across the northeast in favor of corn reduced production by 10 percent from the previous year's levels. At the same time, cotton area in China rose slightly, with nearly the entire increase taking place in Xinjiang. Because of Xinjiang's high yields, production rose by nearly 10 percent over 2010.

Flooding rains in **Japan** and **South Korea** resulted in a slight reduction in rice output from 2010. Tropical cyclone activity was below normal in the Northwest Pacific, with few land falling storms causing any significant damage.

In **India**, wheat production rose over 7 percent from 2010 on increased area and favorably cool weather during the growing season. Rapeseed production was unchanged. The summer monsoon performed well in 2011, bringing widespread near- to above-normal rainfall to most areas. Most changes in production, however, were the result of shifts in area. Increases in soybean area helped lift production by over 12 percent from 2010, despite poor yields. Groundnut production dropped 9 percent due to decreased area. A significant rise in rice area boosted year to year production by over 6 percent. Finally, cotton area expanded into lower yielding areas of central India, reducing overall yields slightly but raising production by 2 percent.

Winter wheat production in **Pakistan** remained relatively unchanged from last year. However, compared with last year's flood damaged crop in northern Pakistan, rice production increased 1.55 million metric tons. Similarly, cotton production rose over 18 percent from last year, this in despite of damage caused by heavy rainfall in Sindh province.

Rice production in Southeast Asia remained virtually unchanged on generally seasonable rainfall and minimal damage from tropical cyclones. Additionally, the production remained steady despite widely reported flooding in **Thailand**. The flooding — as a result of releases from northern reservoirs and dams (Figure 10) — occurred on fallow land with indications that lost production would be offset by increases in dry season acreage.

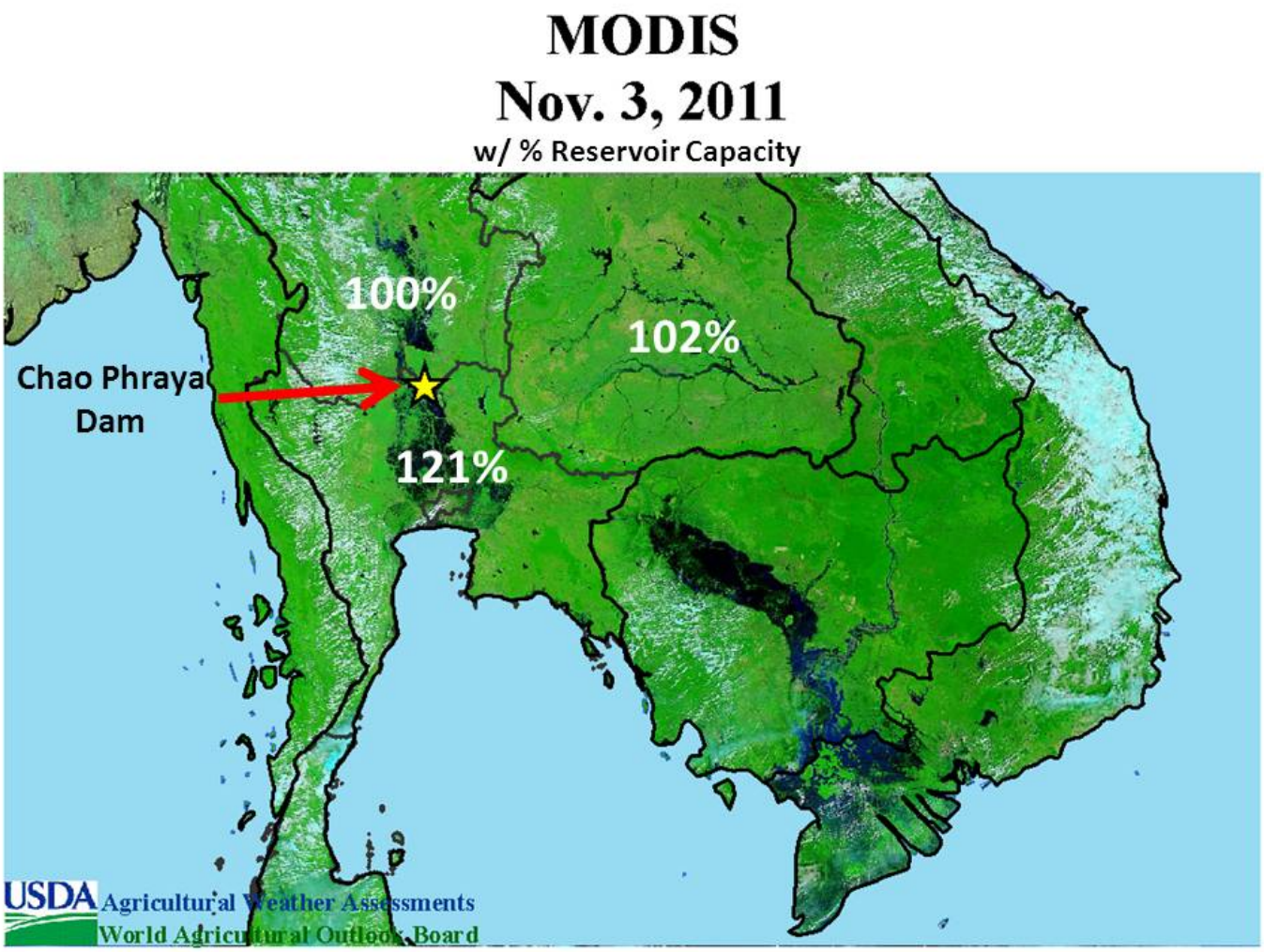

Figure 10. MODIS depiction of flooding in Southeast Asia (November 3, 2011).

SOUTH AMERICA: A substantial portion of the region experienced anomalous weather patterns due to the existence of La Niña throughout the summer growing season. In **Argentina**, periods of untimely dryness and warmth helped to lower yield potential of some vulnerable **crops (Figure 11). However**, coarse grain production rose about 7 percent from the previous season, as substantial increases in area offset drought-related reductions in yield. Corn yields fell about 25 percent from the previous year's record, offsetting a more than 30 percent increase in area and resulting in a 3 percent reduction from the previous year's production. Other, less drought-sensitive crops, including sorghum and barley, posted gains in production, offsetting the losses to corn. Production of Argentina's wheat, which was harvested through the early part of 2011, jumped more than 30 percent on record yields as crops developed under very favorable conditions before the onset of the summer drought.

Argentine soybean production fell 10 percent from the previous season's record levels due to lower yields and slightly lower area. In contrast, cotton production rose nearly 30 percent as a large increase in harvested area offset modest declines in yield.

Unlike Argentina, farmers in **Brazil** experienced mostly favorable weather conditions, following a late start to the summer rainy season. Corn production rose slightly from the previous season

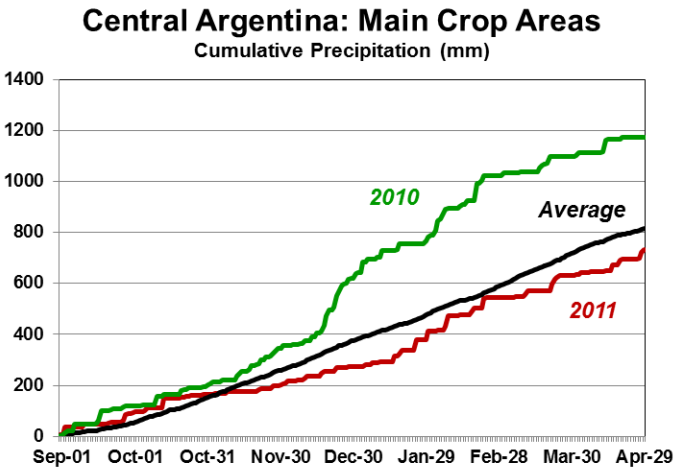

Figure 11. Cumulative rainfall for major summer crop production areas of central Argentina (2011 versus 2010).

as increases in area for both main-season and winter-grown (safrinha) portions of the crop offset modest declines in yield. Wheat production rose more 15 percent as record yields more than offset a 10 percent reduction in acreage. As in Argentina, wheat harvests lingered into the early part of 2011.

For the second consecutive season, Brazilian soybean production reached record levels, jumping 9 percent to 75.5 million metric tons. This was a result of both record area (24.2 million hectares) and yield (3.12 metric tons per hectare) as nearly all major production areas enjoyed favorable growing conditions for most of the season upon the arrival of seasonal rains. Cotton output jumped more than 60 percent due to a substantial increase in harvested area.

AUSTRALIA: Following record production in 2010, Australian wheat production moved even higher in 2011, increasing 1 percent. Barley production fell short of a record but increased 4 percent relative to 2010 production levels. For the second consecutive year, the wheat belt experienced near ideal weather throughout most of the growing season. In May and June, periods of rain and sun favored winter grain planting and aided early crop development. During the winter and spring, near- to above-normal rainfall and relatively cool weather benefited vegetative, reproductive, and filling winter grains. During the harvest period, occasionally heavy rain in western (Figure 12) and northeastern Australia slowed fieldwork and caused some reductions in grain quality. Harvesting progressed with little delay in southeastern Australia, where near-normal rainfall favored fieldwork and helped maintain grain quality.

Australian cotton production surged higher in 2011, jumping 137 percent relative to 2010 production levels. Nearly continuous, heavy rains during the spring and summer saturated soils and filled many reservoirs to their highest levels in nearly a decade. The La-Niña driven wet and relatively cool weather pattern was overall beneficial for dry land and irrigated cotton development, but locally extreme rainfall caused severe flooding in some areas.

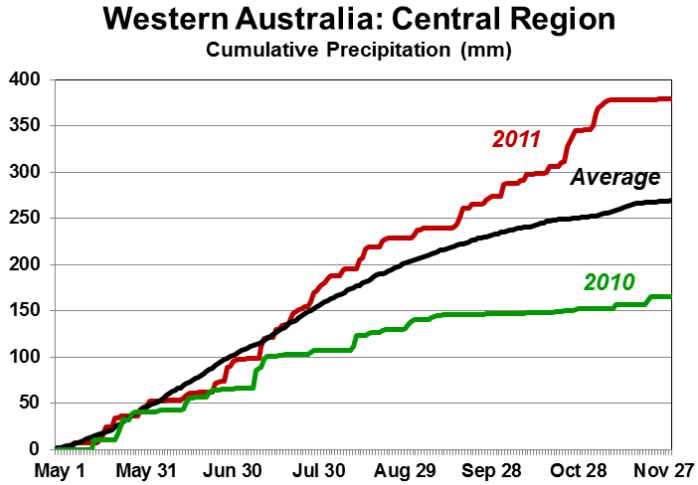

Figure 12. Cumulative rainfall for central farming areas of Western Australia (2011 versus 2010).