GLOBAL CROP PRODUCTION REVIEW, 2003

Prepared by USDA's Joint Agricultural Weather Facility

The following is an annual review of regional crop production, comparing 2003 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 2003. For most countries, changes in production for 2003 are based on crop estimates released by the United States Department of Agriculture in February 2004.

Wheat and Coarse Grain Summary: In 2003, world wheat production declined by about 3 percent. Wheat production increased in the United States, Canada, Mexico, Morocco, Australia, Brazil, and Argentina, and declined in countries in the European Union, Central Europe (previously referred to as eastern Europe), Russia, Ukraine, Kazakstan, India, Pakistan, China, and South Africa. Wheat production remained the same in Turkey and Iran. Country-level changes in 2003 wheat production from 2002 are shown in Figure 1. World coarse grain production increased slightly (about 1 percent). Production increased in the United States, Canada, India, Argentina, and Brazil, and declined in Mexico, countries in the European Union, Central Europe, Russia, Ukraine, Kazakstan, China, Australia, and South Africa.

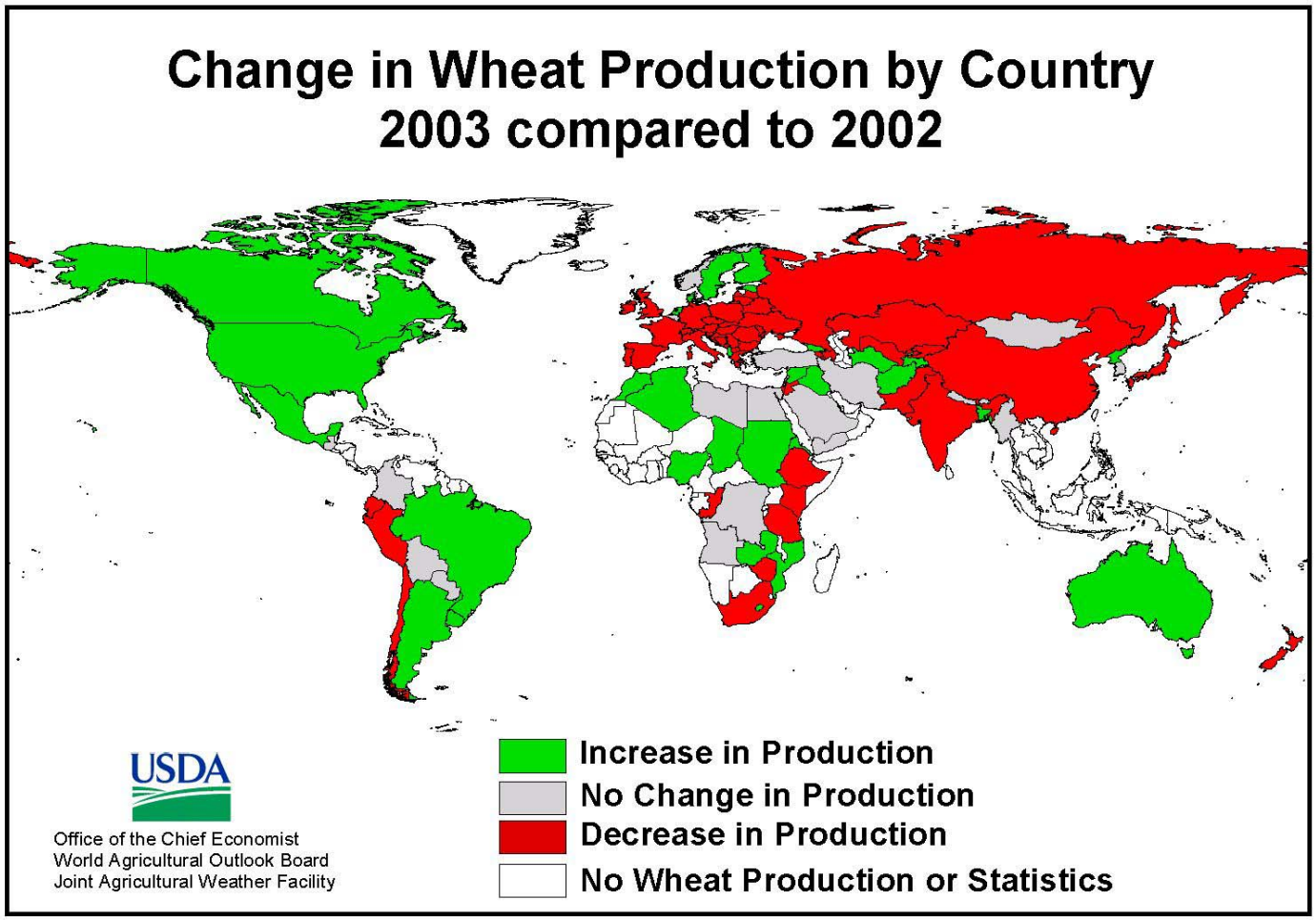

Figure 1. Country-level change in 2003 wheat production from 2002.

In the United States, wheat production (winter, spring, and durum) was up 44 percent from 2002. Favorably cool weather and timely spring rains contributed to the sharp production increase from the previous year's drought-affected crop. U.S. corn production rose 12 percent above 2002, and was the highest on record, edging the standard established in 1994. Following favorable growing conditions in the spring and early summer, hot, dry weather overspread much of the Corn Belt in August. However, the heat and dryness arrived too late to significantly affect overall corn production.

In Canada, improved weather conditions followed 2 years of widespread drought, raising 2003 wheat production 45 percent above that of 2002. Despite the improvement in weather, there were still periods of heat and dryness, especially in southern spring wheat areas, keeping yields below the long-term 20-year trend. Coarse grain production rose 32 percent compared with 2002. Barley production jumped 64 percent over the previous year's drought-reduced crop. Corn production rose 7 percent, due to favorable growing conditions in the main producing province of Ontario. In Mexico, corn production declined only slightly from the previous year, as summer rainfall averaged near normal across most areas.

In the European Union, the countries of France, Germany, the United Kingdom, Italy, and Spain account for about 85 percent of total wheat production. A harsh winter was followed by unseasonably warm, dry weather in the spring and early summer, causing 2003 European Union wheat production to decline by nearly 13 percent relative to 2002 levels. Above-normal precipitation in the autumn and early winter provided adequate to abundant moisture supplies for winter wheat germination and establishment. The favorable autumn weather was followed by several bitterly cold episodes in January and February. Combined with a lack of snow cover, the bitter cold caused isolated winterkill in portions of eastern France and northern Germany. Beginning in March, unfavorable warmth and dryness prevailed over wheat areas from England and France eastward into Germany, stressing crops and reducing yield. A prolonged heat wave that lasted from June into early July was especially stressful, adversely affecting wheat in the filling stage (Figure 2). As a result, wheat production declined

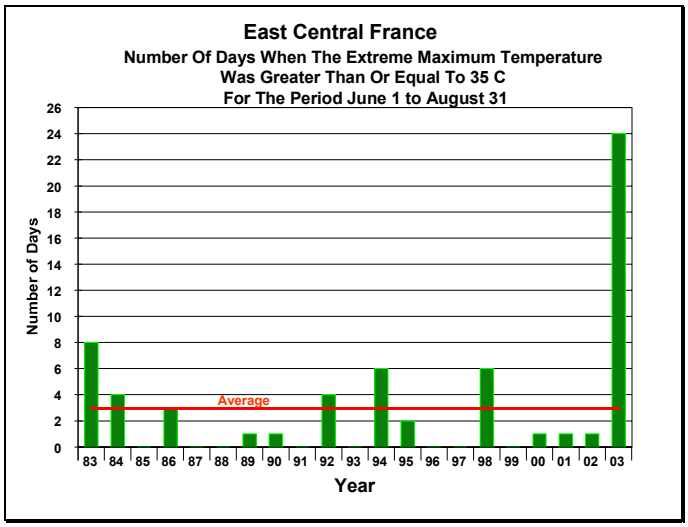

Figure 2. Duration of heat in east central France.

nearly 21, 11, and 7 percent, in France, the United Kingdom, and Germany, respectively. Unfavorable weather conditions also caused European Union coarse grain production to decline by about 13 percent, with corn production decreasing 23 percent. In France and Italy, where most of the corn crop is irrigated, summer drought and prolonged heat caused severe moisture shortages, reducing irrigation supplies for the crop. Subsequently, corn production declined 30 percent in France and 22 percent in Italy. European Union barley production declined about 3 percent. Decreases in France, Germany, and Italy (down 10, 2, and 9 percent, respectively) were partially offset by 4 percent increases in both Spain and the United Kingdom.

Across Central Europe, wheat production decreased 32 percent due to adverse weather during the entire growing season. Typically, Romania and Poland each contribute about 25 to 30 percent to regional wheat production, while Bulgaria, Hungary, and the

Czech Republic each contribute 10 to 15 percent to the Central European total. In many areas, wet weather during the fall delayed winter wheat planting, shortening the period of time required for crop establishment. During the winter, episodes of bitterly cold weather threatened poorly established crops throughout the region. In December, bitterly cold weather along with a lack of snow cover extended from Poland southward into northeastern Romania, causing above-average winterkill. Winter's unusually cold weather pattern persisted into the spring, hampering winter grain development. Large temperature swings during the late winter and early spring were followed by a summer drought and heat wave, causing additional yield declines. In Poland, Hungary, the Czech Republic, and Bulgaria, wheat production declined 15, 25, 32, and 51 percent, respectively. In Romania, wheat production declined 53 percent to a record low of 2.0 million metric tons.

Central European coarse grain production (mainly winter barley and corn) decreased nearly 17 percent from 2003, due to similar adverse weather. Compared with other winter crops, winter barley is typically more vulnerable to extreme cold. As a result, the combination of bitterly cold winter weather and spring drought caused significant declines in production. In Poland, Hungary, and Romania, barley production decreased 17, 24, and 32 percent, respectively. The exception was in the Czech Republic, where winter barley production increased 16 percent from the previous year. The major Central European corn producers also experienced sharp production declines due to summer drought and extensive heat. In Romania, Hungary, and Serbia, corn production decreased 18, 25, and 34 percent, respectively.

In Russia, winter wheat is mostly grown in the Southern Region and southern areas of the Central and Volga Regions. Most of the spring wheat crop is grown from the Volga Region eastward through the Siberia Region. Winter wheat is higher yielding than spring wheat, but more area is planted to spring wheat than winter wheat. As a result, the two commodities contribute equally to total wheat production, each accounting for about 50 percent. In 2003, winter wheat experienced unfavorable weather throughout its entire growth cycle. During the fall of 2002, persistent wetness delayed planting, shortening the period for crop establishment prior to dormancy. In December, bitterly cold weather overspread winter wheat areas that were protected by little, if any, snow cover, resulting in widespread winterkill. A cold spring hampered tillering and plant development, and drought conditions in May further lowered crop yield potential. As a result, winter wheat production declined by 50 percent from 2002. In most spring wheat producing areas, wet weather in May hampered planting activities. Although the wetness persisted throughout the month of June in many areas, it was interspersed with periods of heat and dryness in Siberia. Hot, dry weather developed in the Urals Region in late July and continued throughout the remainder of the growing season, increasing stress on crops. While spring wheat yields remained virtually unchanged from the previous year, a sharp decrease in planted area caused production to decline by about 9 percent. Coarse grain production declined by 9 percent in 2003, mainly due to severe winter conditions that led to a 41 percent drop in winter rye production and a 37 percent drop in winter barley production. Favorable growing season weather raised corn production 29 percent, while spring barley production remained virtually unchanged.

In Ukraine, most of the wheat grown in the country consists of winter varieties. In the fall of 2002, wet weather in September and October delayed planting and establishment of the winter wheat crop. In December, the coldest weather in at least the past 24 years prevailed over winter wheat areas. The combination of insufficient hardening along with a lack of snow cover resulted in some winterkill, especially in southern and eastern Ukraine, where temperatures fell below the threshold for winterkill for two consecutive days (Figure 3). Repeated cycles of thawing and refreezing during February and March resulted in the development of a

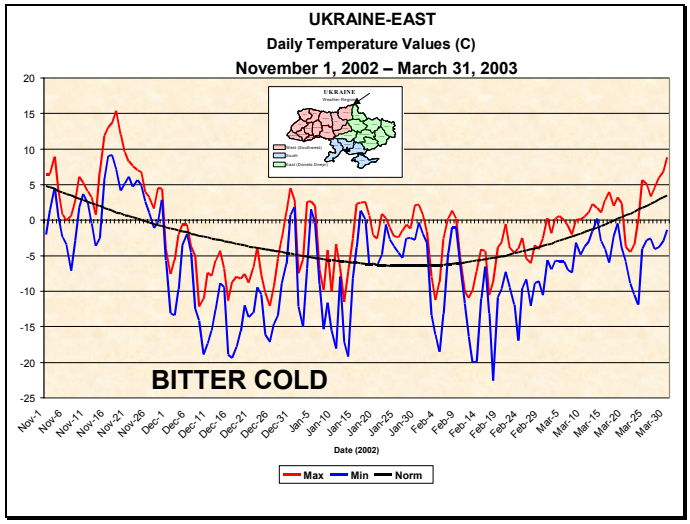

Figure 3. Eastern Ukraine minimum temperatures.

persistent ice crust that smothered winter grains and caused additional winterkill. Winter wheat broke dormancy in the spring in a weakened condition, having suffered substantial winterkill losses in excess of 50 percent. Unusually cold spring weather hindered tillering, reducing the potential for recovery. A drought in May further reduced prospects for the winter wheat crop, stressing the crop as it advanced through reproduction. As a result, winter wheat production fell by about 83 percent from the previous year. Coarse grain production declined nearly 9 percent from 2002 levels. A decline in barley production of 34 percent offset an increase in corn production of about 63 percent. The severe winter conditions destroyed most of the winter barley crop, while a cold spring followed by spring and early-summer drought reduced prospects for spring barley. Above-normal precipitation in July along with cool weather favored corn pollination, boosting yield prospects.

In Kazakstan, most of the wheat grown in the country are spring varieties. Wheat production in 2003 declined 5 percent from 2002. Below-normal rainfall and above-normal temperatures in August followed a wet weather pattern that had persisted in primary spring wheat producing areas during most of the growing season, hastening crop maturity and lowering yield prospects. Coarse grain production declined by 12 percent, caused by late-season heat and dryness in key spring barley producing areas of western Kazakstan, lowering crop yield potential. Spring barley typically accounts for about 85 percent of coarse grain production.

In Turkey, winter wheat production remained unchanged due to generally favorable weather, while barley production decreased 5 percent. In Iran, favorable growing season weather maintained record wheat production, similar to the previous year. In northwestern Africa, abundant growing season rainfall greatly boosted 2003 wheat and barley production above 2002 levels. In Morocco, Algeria, and Tunisia, wheat production increased by 55, 186, and 210 percent, respectively. Likewise, barley production in these countries surged by 68, 207, and 594 percent, respectively. In all three countries, wheat and barley production was the highest since 1996, except in Algeria, where a 57 percent increase in wheat area and the extremely favorable weather resulted in record wheat production.

In China, wheat production fell 5 percent on declining area. However, yields reached their highest level since 1999 due to generally favorable overwintering conditions and the timely arrival of spring moisture in major growing areas of the North China Plain. Corn production fell 6 percent in 2003, from a combination of reduced area and lower yields. Spring dryness reportedly caused planting delays in parts of Manchuria (Heilongjiang), but favorable summer rainfall and a delayed arrival of the first killing freeze in the fall allowed late-planted crops to reach maturity, preventing larger yield reductions.

In Southern Asia, marginal decreases in both planted area and yield caused 2003 wheat production in India to decline by 4 percent. Pakistan wheat production remained virtually unchanged. In India, coarse grain production rose 31 percent in 2003, due to an increase in planted area and generous monsoon rains (Figure 4).

Southern Asia
Percent of Normal Precipitation
June 1 – September 30, 2003

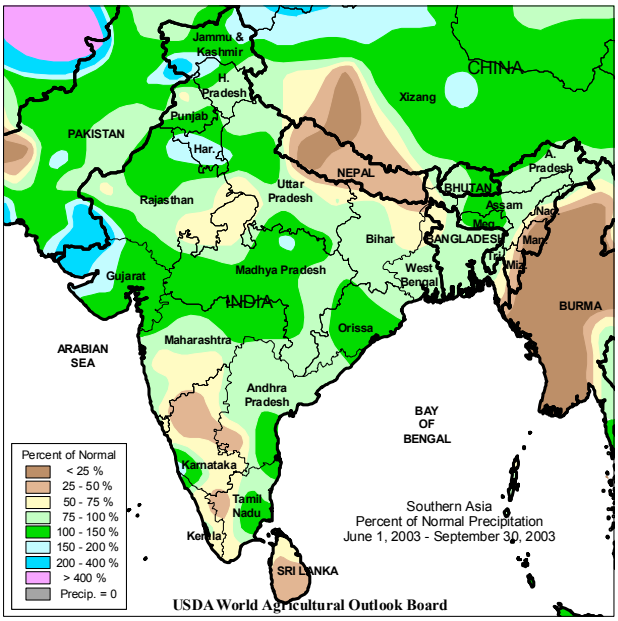

Figure 4. Percent of normal precipitation.

In the southern Hemisphere, after a disappointing, drought-plagued 2002 growing season, Australian wheat production rebounded strongly in 2003, increasing nearly 144 percent. Although lingering drought in eastern Australia prevented crops from achieving their full yield potential, a 13 percent increase in planted area and nearly ideal weather in Western Australia combined to produce a bumper winter wheat crop. In South Africa, wheat production plummeted 39 percent from 2002 levels, as a spring drought stressed crops advancing through the critical moisture sensitive reproductive and filling stages of development. Corn production fell 4 percent, mainly due to untimely periods of summer warmth and dryness. In contrast, favorable weather in Argentina led to increases in corn and wheat production of 5 and 10 percent, respectively, with corn achieving record yields. In Brazil, corn and wheat production rose 27 and 87 percent, respectively, with both crops achieving records in both yield and area.

Oilseed Summary: World oilseed production rose 5 percent in 2003. Oilseed production increased in Canada, Russia, Ukraine, China, India, Brazil, and Argentina, and declined in the United States, European Union, Indonesia, and Central Europe.

In North America, United States soybean production was down 12 percent from 2002, falling to its lowest level since 1996. This reduction was caused by a mid- to late-summer heat wave and drying trend in the western Corn Belt. In Canada, rapeseed (canola) production jumped 60 percent, due to increased area and better weather conditions than those experienced by last year's drought-reduced crop in the Prairies. Soybean production was down slightly (about 3 percent) in the major producing province of Ontario.

In the European Union, 2003 total oilseed production declined almost 2 percent from 2002. A 2 percent increase in rapeseed production was more than offset by an 8 percent decline in sunflowerseed production due to summer drought. Rapeseed production remained virtually unchanged in France, declined 5 percent in Germany, and increased 23 percent in the United Kingdom.

In Russia and Ukraine, additional increases in area along with mostly favorable weather during the growing season raised 2003 sunflowerseed production by 32 percent and 30 percent, respectively, above the previous year.

In China, spring rains boosted 2003 winter rapeseed production nearly 10 percent, with increases in both area and yield. In contrast, soybean production was slightly lower than the previous year, primarily on drought in northern Manchuria.

In India, an exceptional monsoon season increased oilseed production by 42 percent from 2002. Peanut (groundnut) production was boosted 48 percent by abundant rainfall in major western growing areas. Soybean production increased 55 percent due to abundant July rainfall in the major

producing state of Madhya Pradesh. Winter rapeseed production increased by 61 percent in India.

In Argentina, record yield and area pushed soybean production up 18 percent, but sunflowerseed production fell 4 percent, as untimely summer heat in southwestern growing areas resulted in lower yields. In Brazil, soybean production rose 21 percent from 2002's record production, on record yields and the continuation of unprecedented rises in area.

Rice Summary: World rice production rose 3 percent in 2003. Rice production increased throughout most of Southeast Asia and South Asia. In India, a much-improved monsoon over last year resulted in a significant increase in planted area and an increase in rice production by nearly 18 percent. Pakistan and Thailand experienced increases in production of 16 and 4 percent, respectively. In Vietnam, a reduction in area planted brought rice production down nearly 1 percent from last year. In China, 2003 rice production declined 6 percent, resulting from a continued reduction in planted area and lower yields.

Cotton Summary: World cotton production increased about 5 percent in 2003. Cotton production increased in the United States, India, and Brazil, and declined in Turkey, Uzbekistan, China, Australia, and Argentina.

In the northern hemisphere, United States, cotton production was up 6 percent from 2002. Most of the U.S. cotton belt experienced favorable growing and harvest conditions, although drought and hail were problems on the southern High Plains. In China, production fell slightly in 2003, as flood damage on the North China Plain offset an increase in area. In Uzbekistan, a cold, wet spring resulted in some replanting with shorter-season varieties that are typically lower yielding, resulting in a 9 percent decline in cotton production from 2002. Turkish production decreased by nearly 2 percent due to slightly lower yields. In India, an excellent monsoon allowed for an increase in area and yield, resulting in an increase in cotton production by almost 20 percent over 2002. In Pakistan, 2003 production declined by 3 percent.

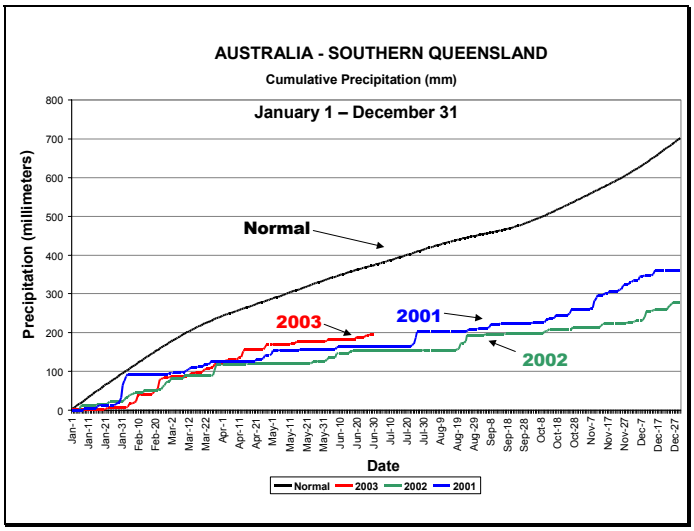

Figure 5. Cumulative precipitation for southern Queensland, Australia.

In the southern hemisphere, Australian cotton production declined sharply in 2003, dropping nearly 47 percent. These declines resulted from the same drought that devastated the 2002 winter grain crop, with hot, dry weather severely limiting soil moisture and irrigation supplies throughout the growing season, and thus preventing cotton from achieving its full yield potential (Figure 5). In Argentina, production fell slightly due to declining area. Brazilian cotton production rose 11 percent on record yields.