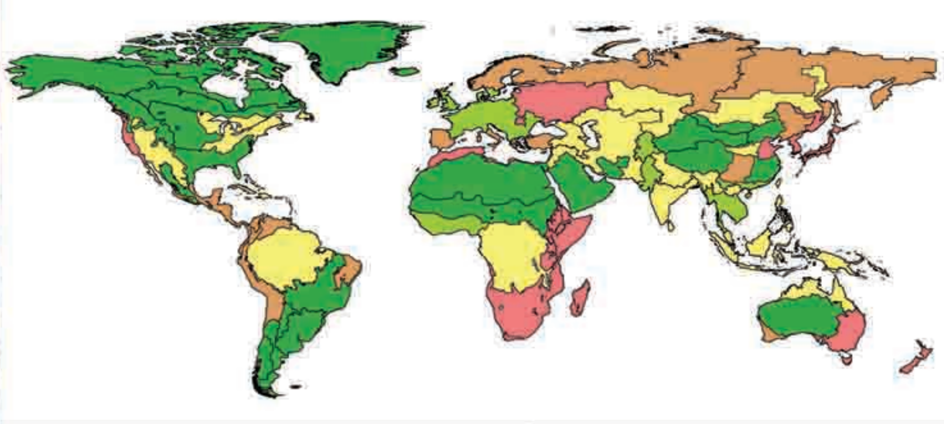

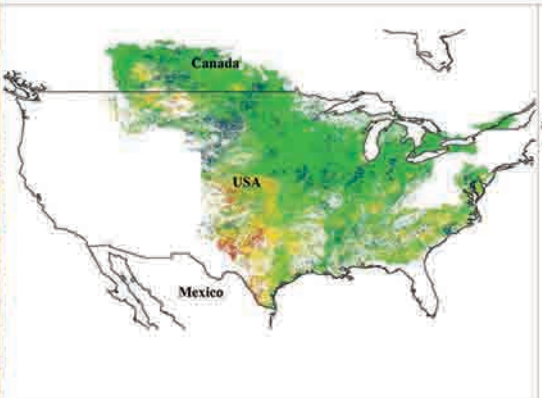

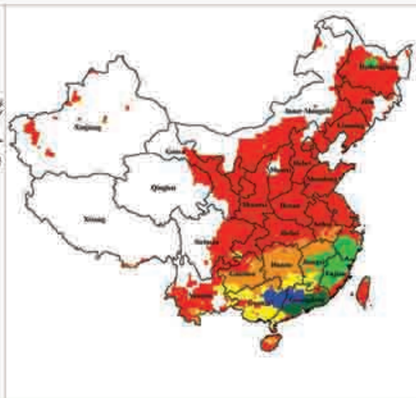

CropWatch bulletin

QUARTERLY REPORT ON GLOBAL CROP PRODUCTION

Monitoring Period: April-July 2014

August 31，2014
Volume 14, No. 3 (No. 94)

Institute of Remote Sensing and Digital Earth (RADI)
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CropWatch Online Resources: This bulletin along with additional resources is also available on the CropWatch Website at http://www.cropwatch.com.cn.

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Note: CropWatch resources, background materials and additional data are available online at www.cropwatch.com.cn.

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Abbreviations

5YA	Five-year average, the average for the April-July periods from 2009 to 2013; one of the standard reference periods and referred to as “recent past.”
13YA	Thirteen-year average, the average for the April-July periods from 2001 to 2013; one of the standard reference periods and referred to as “last decade.”
BIOMSS	Agroclimatic indicator for biomass production potential
CALF	Cropped Arable Land Fraction
CAS	Chinese Academy of Sciences
CWSU	CropWatch Spatial Units
DM	Dry matter
EC/JRC	European Commission Joint Research Centre
FAO	Food and Agriculture Organization of the United Nations
GAUL	Global Administrative Units Layer
GVG	GPS, Video, and GIS data
ha	hectare
ITCZ	Intertropical Convergence Zone
MPZ	Major Production Zone
MRU	Monitoring and Reporting Unit (formerly CPSZ)
NCDC	U.S. National Climatic Data Center
NDVI	Normalized Difference Vegetation Index
NOAA	U.S. National Oceanic and Atmospheric Administration
PAR	Photosynthetically active radiation
RADI	CAS Institute of Remote Sensing and Digital Earth
RADPAR	PAR agroclimatic indicator
RAIN	Rainfall agroclimatic indicator
TEMP	Air temperature agroclimatic indicator
Ton	Thousand kilograms
VCIx	Maximum Vegetation Condition Index
VHI	Vegetation Health Index
VHIn	Minimum Vegetation Health Index
W/m^2	Watt per square meter

Bulletin overview and reporting period

This CropWatch bulletin presents a global overview of crop stage and condition between April 1 and July 31, 2014. It is the 94th bulletin produced by the CropWatch group at the Institute of Remote Sensing and Digital Earth (RADI) at the Chinese Academy of Sciences, Beijing. CropWatch analyses are based mostly on several standard and new ground-based and remote sensing indicators, following a hierarchical approach. The analyses cover large global zones; major producing countries of maize, rice, wheat, and soybean; and detailed assessments of Chinese regions.

In parallel to the increasing spatial precision of the analyses, indicators become more focused on agriculture as the analyses zoom into smaller spatial units. CropWatch uses two sets of indicators: (i) agroclimatic indicators—RAIN, TEMP, and RADPAR, which describe weather factors; and (ii) agronomic indicators—BIOMSS, VHIn, CALF, and VCIx, describing crop condition and development. The indicators RAIN, TEMP, RADPAR and BIOMSS do not directly describe the weather variables rain, temperature, radiation, or biomass, but rather are spatial averages over agricultural areas, which are weighted according to the local crop production potential. For more details on the CropWatch indicators and spatial units used for the analysis, please see the quick reference guide in Annex C, as well as online resources and publications posted at www.cropwatch.com.cn.

Chapter	Spatial coverage	Key indicators
Chapter 1	World, using Monitoring and Reporting Units (MRU), 65 large, agro-ecologically homogeneous units covering the globe	RAIN, TEMP, RADPAR, BIOMSS
Chapter 2	Major Production Zones (MPZ), six regions that contribute most to global food production	As above, plus CALF, VCIx, and VHIn
Chapter 3	31 key countries (main producers and exporters)	As above plus NDVI
Chapter 4	China	As above
Chapter 5	*Special topics and outlook*	
Online Resources	*www.cropwatch.com.cn*	

Newsletter and online resources

The bulletin is released quarterly in both English and Chinese. To sign up for the mailing list, please e-mail cropwatch@radi.ac.cn or visit CropWatch online at www.cropwatch.com.cn. Visit the CropWatch Website for additional resources and background materials about methodology, country agricultural profiles, and country long term trends.

Executive summary

The CropWatch August bulletin assesses the recent agroclimatic and agronomic factors up to July 2014 that determine crop development and the 2014 agricultural production. The analyses of environmental and satellite-based agronomic indicators focus on worldwide patterns and zoom into major production areas and countries. This bulletin also reports about disasters and El Niño perspectives.

Water stress

Vagaries of water supply have played a significant part in shaping the outcome of the 2014 agricultural production. Droughts and excess rainfall, sometimes resulting in floods, have markedly influenced the development of crops in several large and spatially coherent areas. Associated landslides and fires are reported on, although these phenomena tend to be of local importance only. Another remarkable feature of the current period is that very limited areas experienced exceptional temperatures.

East Asia is among the major rainfall deficit areas, with significantly below average values in southern Japan (-34%) and the Korean peninsula (-50%), as well as several zones in China, including the Loess region, north-east China, and particularly the north China Plain (-25%). The most affected provinces in China include Shandong (-31%), Henan (-25%), Shaanxi (-22%), Liaoning (-21%), and Hubei (-16%). The drought was accompanied by moderate increases in temperature (+1.0°C to 1.5°C) and sunshine (+5%) and the effect on crop production was severe.

Less serious impacts characterize another rainfall deficit area in eastern Russia and central Asia (Kazakhstan, Uzbekistan) where many crops suffered water deficits between 20 and 50%, with the drought decreasing in the east to the extent that Tajikistan, Kyrgyzstan, Gansu-Xinjiang in China and areas around Mongolia actually recorded large excesses of rainfall, which benefited agriculture and pastureland.

Southern-central Europe, North America (+17%), and especially South America are among the areas where rainfall significantly affected crops; the South American Major Production Zone recorded an increase of rainfall close to 50%, resulting in an estimated biomass increase of 24% and markedly benefiting crop production. Other droughts occurred in parts of India (Punjab, Gujarat, Goa, and Kerala), Thailand and Myanmar.

Land use intensity

The above-mentioned climatic conditions have interfered with cropland management, which CropWatch assesses through the Cropped Arable Land Fraction indicator for major production zones, important food producing and exporting countries, and for Chinese regions and provinces. The final outcome of the season eventually results from the product of cultivated areas and yields, which are estimated quantitatively as well as qualitatively through several satellite-based indicators.

Significant changes in cropped arable land occurred in Southern Australia (4.4% increase), south and south-east Asia (+5.5%), and in the Gulf of Guinea countries (+1.9%), where Nigeria (+5.5%) displays one of the highest values in the African continent, followed by Ethiopia (+4.9%). On the other hand, South Africa decreased arable land for the winter crops (essentially wheat) by 12.6%. Similarly, Turkey decreased summer crop areas by 6.7%. Several countries in Asia, including drought-affected India, increased cropped arable land significantly, which contributed to limiting the impact of the adverse conditions on projected crop production. Cropped land increases include those in India (+8.6%), Pakistan (+8.3%), and Cambodia (+4.7%).

Projected 2014 production

CropWatch projections for the global 2014 agricultural output include poor performance of maize (-2.7%) compared with 2013 estimates), a near-stagnation of rice (+0.5%) and wheat (+0.3%) production, but a significant rise of soybeans (+4.4%).

The drop in maize mostly affects the major producers, including Canada (-17.9%), the United States (-7.7%), Argentina (-1.8%), and Brazil (-2.8%). Ukraine is one of the few countries that did well (+6.1%).

The slight wheat increase results from the combination of very favorable output in South America (up more than 20% in Brazil and Argentina, where the harvest marks the return to normal or better conditions after two poor seasons affected by drought) with mediocre harvests in North America (-7.5% in Canada and -2.3% in the United States). Rice did not do well among the largest countries, including India (-1.5%), and Indonesia (-1.7%). Production is projected to decline as well in Bangladesh and Thailand (-0.3% and -0.2%, respectively), while expectations are better for the Philippines (+2.8%) and Egypt (+3.5%), in spite of a cyclone affecting the crop in the former.

Soybeans are the only crop that is expected to do well, with a sizeable production increase of 4.4%, mostly driven by the United States (+10.9%) and Brazil (+9.0%). Argentina stayed at a low output increase of 0.5%.

In China, wheat production is estimated to be slightly up (+1.2%) from last year’s, which puts the country’s total cereal production at 544 million tons, virtually the same level as the 2013 output. Maize (217 million tons) is down 1.2% due to drought and rice stagnates at 211 million tons. Soybean continued the recent downward trend (-2.3%).