Chapter 3. Production and crop condition of key countries

Following information on global environmental indices (chapter 1) and indicators of farming intensity and stress (chapter 2), chapter 3 presents CropWatch assessments for thirty individual countries, from Argentina (ARG) to South Africa (ZAF). For each, CropWatch analyses include a comprehensive array of variables and indicators. Section 3.1 summarizes—as far as possible—the global production outlook based on these country assessments, while section 3.2 presents details and analysis for each of the countries. Additional information is presented in Annex A, including environmental indices by country (table A.3) and indices for major regions within some of the larger countries (tables A.5 through A.12, covering Argentina, Australia, Brazil, Canada, India, Kazakhstan, Russia, and the United States. For each of those countries, only major producing areas are listed.

3.1 Production outlook

As implicitly mentioned in previous sections, this CropWatch bulletin is very much "between seasons:" the harvest of winter crops (wheat) was completed in the southern hemisphere, while summer crops are currently growing, with several months left before the time of harvest. In the northern hemisphere, winter crops have been planted before or up to the beginning of the reporting period; they are currently dormant at the higher latitudes and actively growing in the southernmost areas. Summer crops will be planted in a couple of months in the cooler climates.

This must be kept in mind when comparing and interpreting the data in table 3.1, which summarizes environmental indices and crop indicators for the countries, listing departures from the recent twelve-year average (environmental indices) and five-year average (crop indicators).

It is interesting to highlight the extreme values listed in the table. Rainfall shortage, for instance, was largest in Australia (-27 percent), followed by Ukraine (-25 percent), and Poland (-16 percent), ignoring Egypt where all crops are irrigated. The largest positive departures occur in mostly semi-arid countries, where the availability of additional water is definitely going to improve crop prospects, for instance in Uzbekistan (+72 percent), Mexico (+48 percent), Iran and Pakistan (+42 percent), and India (+52 percent), which, however, is much less arid than the other listed countries. Looking at the global spatial patterns of the environmental indicators (figures A.1 to A.3), it becomes obvious that the extremes stressed in this subset of thirty countries do in fact quite naturally occur in adjacent areas as well; the most extreme conditions do not even necessarily occur in the thirty countries examined here.

Cold spells affected North America (United States -1.0°C, Canada -1.3°C) and part of Southeast Asia (Thailand, -1.0°C), while large expanses of Eurasia, from Siberia and Russia (+1.7°C) to Germany (+1.2°C), enjoyed above average temperatures compared to the twelve-year average. Argentina (+1°C) is also mentioned here, as the country experienced drought early in the growing season of summer crops. Whether the high temperatures in Eurasia will eventually result in improved winter crop output is open to debate, as the direct and indirect effects need to be evaluated against the weather of the period between February and the time of harvest.

Table 3.1. Environmental and crop indices for October 2013 to January 2014, departure from 5YA and 12YA

	Environmental indices departure from 12YA (2001-2013)				Crop indicators departure from 5YA (2008-2013)	
	Rainfall total (%)	Temperature average (°C)	PAR accumulation (%)	Biomass accumulation (%)	Uncropped arable land in % of pixels (Absolute difference in % points)	Maximum VCI (absolute difference)
Argentina	5	1.0	0.1	-1	0.7	-0.05
Australia	-27	0.3	3	3	9.2	0.01
Bangladesh	11	-0.5	-0.5	33	-0.2	0.06
Brazil	-1	0.2	-0.4	2	-0.4	0.01
Cambodia	5	-0.8	5	8	0.5	-0.01
Canada	8	-1.3	6	-2	10.7	0.01
China	19	0.5	8	21	-3.3	0.03
Egypt	-24	0.2	3	26	-1.0	0.05
Ethiopia	28	0.3	0.2	16	-4.3	0.01
France	-3	0.8	0.1	4	-2.0	0.07
Germany	5	1.2	-0.4	8	-10.7	0.11
India	52	-0.3	1	33	-3.0	0.11
Indonesia	-2	-0.2	-2	-2	0.4	-0.01
Iran	42	-0.4	2	19	-2.8	0.06
Kazakhstan	25	2.0	4	17	-1.9	0.23
Mexico	48	-0.1	-3	31	-4.3	0.04
Myanmar	27	-0.2	2	4	-4.8	0.01
Nigeria	23	0.3	6	9	1.6	-0.01
Pakistan	42	-0.1	3	14	-3.5	0.04
Philippines	11	-0.3	-4	-0.2	-0.4	0.00
Poland	-16	1.2	4	-7	-24.2	0.09
Romania	-8	1.2	2	-6	-12.5	0.10
Russia	-1	1.7	4	6	11.8	0.12
South Africa	-3	0.0	3	0.0	3.0	-0.03
Thailand	13	-1.0	5	6	0.6	0.02
Turkey	-6	-0.2	7	-9	18.9	-0.03
United Kingdom	42	0.7	1	10	-3.0	0.09
Ukraine	-25	0.7	-1	-11	-30.5	0.04
United States	-4	-1.4	3	-2	5.9	0.05
Uzbekistan	72	0.5	4	52	-8.6	0.01
Vietnam	-1	-0.6	1	-7	-1.5	-0.01

Note: Departures are expressed in relative terms (percentage) for all variables, except for temperature, for which absolute departure in degrees Celsius is given. Zero means no change from the average value; Relative departures are calculated as (C-R)/R*100, with C=current value and R=reference value, which is the five- or twelve-year average for the same period between October 2008 and January 2013 (5YA) or October 2001 and January 2013 (12YA). VCI=Vegetation condition index.

Satellite derived PAR is less variable than rainfall or temperature and no large extreme values occur. Nevertheless, high departures occurred in China, Canada, Turkey, and Nigeria (between +6 and +8 percent). Low sunshine in Mexico (-3 percent) and in the Philippines (-4 percent) is associated with abundant precipitation. In Mexico, water is a major limiting factor in many areas and the benefits of abundant rain will outweigh the negative effect of reduced PAR, while in the Philippines, the large impact of Haiyan combined with low sunshine is bound to result in production loss.

Biomass departures from the reference values (figure 3.1) can result from either higher than normal temperatures or higher than normal rainfall. The relative contribution of rainfall is most marked in warm, semi-arid climates; this is the case in Mexico (+31 percent), India (+33 percent), and Uzbekistan (+52 percent). The effect of temperature is dominant in areas where rainfall is normally not limiting, or in irrigated areas, such as China (+21 percent). The largest decreases occur in countries that were already mentioned for their poor performance in terms of rainfall (Poland with -7 percent and Romania with -6 percent). Two countries combine a relatively mild drought with below average temperature: Turkey (-9 percent) and Vietnam (-7 percent).

One of them (Turkey) also displays the largest uncropped arable land (UAL) value (+18.9 percent) indicating a dramatic increase in uncropped land. Although the mechanism is difficult to assess with the available data, the detailed national analysis in section 3.2 clearly identifies the most affected areas, based on the biomass map and VHI profiles. Other large UAL departures occur in Canada and the United States because of the cold spell, and in Russia (+11.8 percent), where the increase is more difficult to interpret. It is, however, confirmed by national sources.

Maximum VCI departures are consistent with the environmental indices in most instances, starting with Kazakhstan (+0.23, due to a favorable combination of rainfall (+25 percent) and temperature (+2.0°C)), followed by most of the Eurasian countries that experienced a "warm spell," for example +0.12 in Russia and +0.11 in Germany. The largest negative departures for VCI are reported for Argentina (-0.5) and South Africa (-0.3). See also figure 3.2.

Figure 3.1. Global map of biomass accumulation by country and sub-national areas, departure from twelve-year average (2001-13) average (percentage)

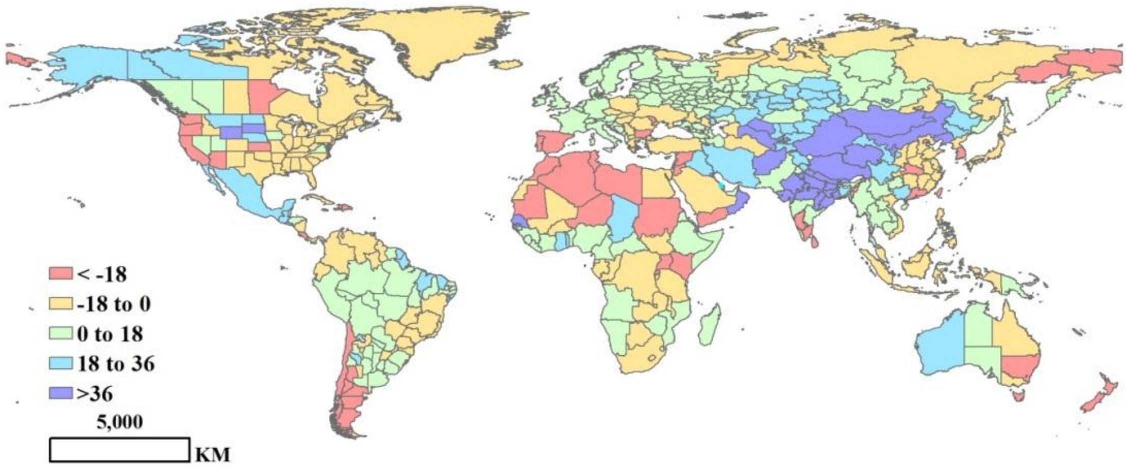
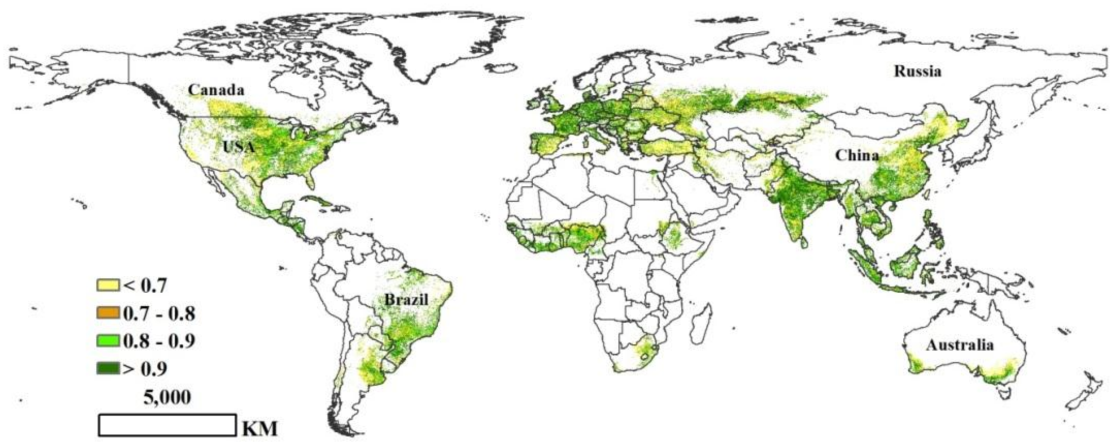


Figure 3.2. Global map of maximum VCI by country and sub-national areas



Argentina is one of the countries where CropWatch has estimated wheat yield and production, alongside with other major wheat producers of the southern hemisphere: Brazil and Australia (table 3.2). All countries underwent significant production increases in the range from about 15 percent (Argentina, Australia) to 30 percent (Brazil). The production drop in South Africa is the continuation of a trend, mostly due to the fact that wheat is less profitable than other crops.

Table 3.2. CropWatch estimates of 2013 wheat production in the southern hemisphere (Australia, Brazil, and Argentina), together with South-African production data (x1000 tons)

	Wheat					
	Yield	Δ%	Area	Δ%	Production	Δ%
Argentina	2.82	8.9	3321	5.1	9356	14.1
Australia	1.96	11.3	13335	4.3	26181	16.5
Brazil	2.60	12.3	2212	16.9	5750	31.3
South Africa (*)					1750	-6

Note: Δ%=Percentage increase expressed against 2012 data from national sources; (*) national data.
Source: CropWatch estimates (Australia, Brazil, and Argentina); South African data is from national sources.

3.2 National crop condition

On the subsequent pages, results are presented for each of the thirty key countries. For each, CropWatch results include information—maps, graphs, and text—on crop condition, covering maximum vegetation condition index (VCI), NDVI, and biomass. The maps refer to crop growing areas only, except biomass maps, which are given for the whole country to not exclude rangeland, which is important in the economy of livestock producers on all continents.

Information for each country is presented as follow: (a) Maximum VCI (over arable land mask) for October 1 2013-January 30 2014 by pixel; (b) Spatial NDVI patterns for October 2013- January 2014 (compared to the 5YA); (c) NDVI profiles associated with the spatial pattern under (b); (d) Biomass for the period October 1 2013 – January 30 2014 compared to the 5YA, difference expressed in absolute values (gDM/m^2); and (e) Crop condition development graph based on NDVI, comparing the latest season (since October 2013) to the five-year average (5YA), the five-year maximum, and the October 2012-September 2013 period. Note that biomass in these graphs is based in temperature and rainfall and expresses to what extent rainfall and temperature were conducive to biomass development (see also CropWatch online resources on methodology.)

As mentioned before, additional resources for the countries are available in Annex A, tables A.3 and A.5-A.12, as well as online at www.cropwatch.com.cn, where brief agricultural profiles for each country are posted (visit online resources: Country profiles).

Figures 3.3-3.32. Crop condition for individual countries ([ARG] Argentina- [ZAF] South Africa) for October 2013-January 2014

[ARG] Argentina

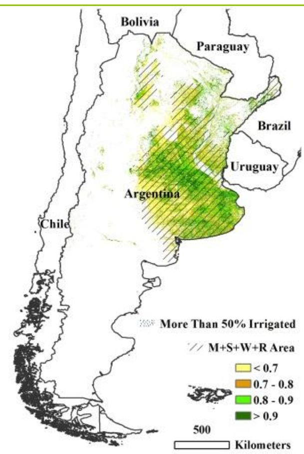
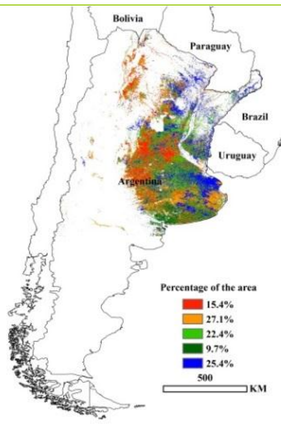


Figure 3.3. Argentina crop condition, Oct. 2013-Jan. 2014 (a)

November and December are the harvesting months for wheat in Argentina; summer crops, in particular maize and the first soybean crops, are in emergence and establishment stages. Rainfall from October to January was 10 percent above the previous five years, but 6 percent below last year's. Temperatures were above normal. The crop condition profiles indicate that the development of soybean and maize was delayed due to the hot and dry weather conditions. Recent rainfall in January promoted crop emergence and establishment in part of the main soybean and maize planting regions, but more rainfall is needed in western Buenos Aires and eastern La Pampa regions. Droughts there resulted in low maximum VCI and lower biomass, compared to the five-year average.

As indicated by the NDVI clustering profiles, crop condition is changing from 'above normal' to 'normal' or 'below normal' in most of Argentina, except for scattered regions in northwestern Buenos Aires and northern Santa Fe (figure (b), regions in light green). This confirms the unfavorable conditions that started from November. Winter wheat in the southern coastal regions of Buenos Aires province—the key winter wheat producing regions contributing 50 percent of total wheat production—was not affected by the dry season. In contrast, the above normal PAR in the grain filling and maturing stage is beneficial for winter wheat yield, as shown by the CropWatch estimate of a 9 percent increase in yield compared to last year. Together with the increasing planting area, CropWatch puts the wheat production estimates for Argentina at 9.4 million tons, 14 percent up from last year's severely reduced production, but still well below the five-year average.



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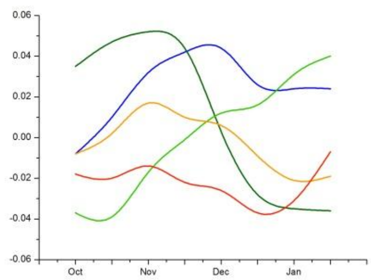

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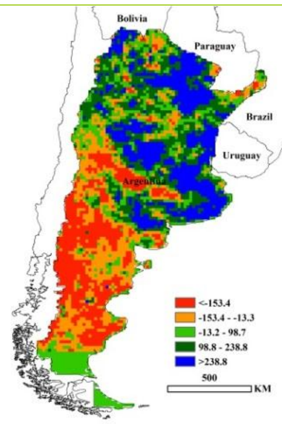

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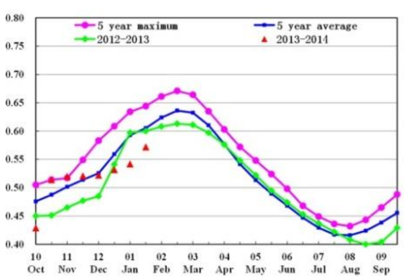


(e)

Table 3.3. Argentina wheat production estimate for 2013-2014

	Area (kHa)	Yield (tons/ha)	Production (kT)
Chaco	85	1.26	107
Tucuman	97	1.13	110
Salta	153	1.05	160
La Pampa	171	2.22	379
Entre Rios	226	1.83	414
Santiago Del Estero	237	2.90	688
Santa Fe	407	2.85	1157
Cordoba	424	2.82	1196
Buenos Aires	1495	3.41	5101
Other regions	27	1.62	45
Total	**3321**	**2.82**	**9356**

Note: Data are CropWatch estimates calibrated against national statistics.

[AUS] Australia

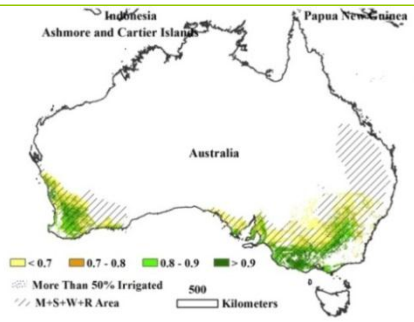
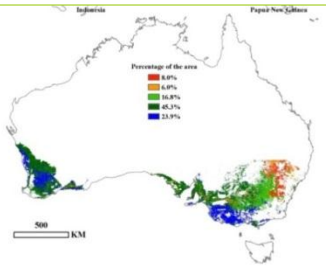


Figure 3.4. Australia crop condition, Oct. 2013-Jan. 2014 (a)

In Australia, November is the main harvesting season for wheat, which is planted in the southwestern part of Western Australia, the southeastern part of South Australia, across Victoria, and in the southeastern part of New South Wales. For the period under consideration, the crop condition in Australia shows average to above-average conditions compared to last five years, except for the beginning of October and the period from mid-December to mid-January when conditions are below average. For the environmental indexes in general, the maximum VCI increases by 0.01 compared to the five-year (2008-2013) average. The average temperature increases by 0.3°C, which is confirmed by the NOAA NCDC climate anomalies reporting that the warmest September-February period from 2013-2014 contributed to overall record warmth in Australia. Consistently, PAR increases also by 3 percent. Total rainfall, however, decreases by 37 percent from the recent decadal average, which is confirmed by the Australia Bureau of Meteorology reporting a drought in October and January. In this situation, irrigation is provided to assure the rapid growing of wheat before harvest. In general, CropWatch results indicate a biomass accumulation increase of 3 percent, which means wheat in Australia is still looking at a good production season in 2013-2014.

In terms of production, the production of wheat in Australia has attained to 26,181 kton (kT) for 2013-2014, with a yield of 1.96 tons/ha and a total wheat area of 13,335 kHa. Compared with the previous season in 2012-2013, production has increased by 16.5 percent, with the yield and area each increasing by 11.3 percent and 4.3 percent respectively, consistent with a report from the Australian Bureau of Agricultural Resource Economics and Sciences. Specific production in the individual states varies; the poor condition in New South Wales and Victoria has led to the decrease of production, while increases in production are mainly concentrated in Western and South Australia.



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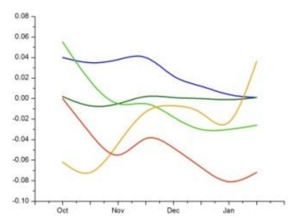

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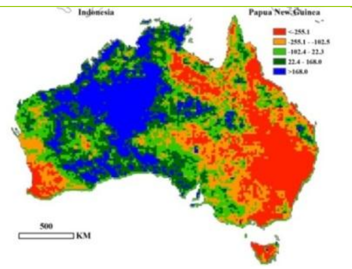

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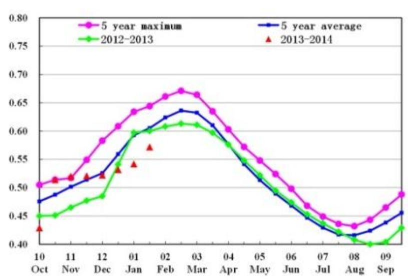

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Table 3.4. Australia wheat production estimate for 2013-2014

	Area (kHa)	Yield (tons/ha)	Production (kT)
Western Australia	5015	1.75	8845
South Australia	2172	1.89	4120
New South Wales	3617	2.15	7777
Victoria	1623	2.28	3701
Other regions	908	1.91	1738
Total	13335	1.96	26181

Note: Data are CropWatch estimates calibrated against national statistics.

For a description of (a) through (e), see introduction to section 3.2.

[BGD] Bangladesh

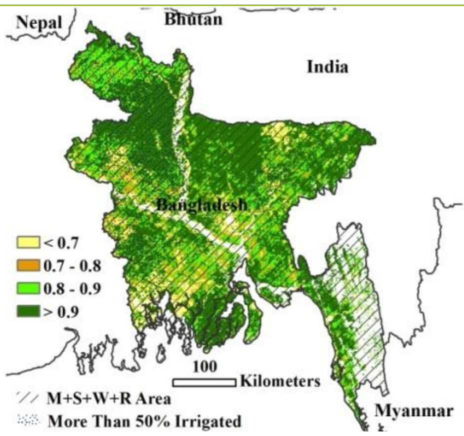
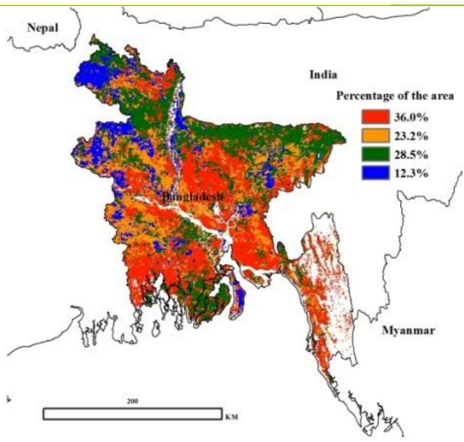


Figure 3.5. Bangladesh crop condition, Oct. 2013-Jan. 2014 (a)

The period covered by this bulletin includes the harvest of the 2013 Aman rice, the planting of the irrigated Boro rice and wheat, as well as the early season crops, which is now completed.

As illustrated in figures A.1-A.3, Bangladesh suffered from a combination of lower rainfall and PAR. The temperature kept the same level as the previous 2001-2013 average. Almost 60 percent of the crops were below average in the current monitoring season. Crop condition during the Aman season from October to December was inferior to that of the recent five year, due to poor rainfall. Only the northern and central southern part of the country show favorable conditions over the whole period from October to the end of January.

The distribution of poor crop conditions coincides with the low maximum VCI in the southwest of the country, where the value is less than 0.7. For the irrigated Boro season, crop condition kept balance with that of the previous five year average, indicating good prospects for the future rice crop. As for biomass, the whole country seems to enjoy a more favorable condition than during the recent five year period.



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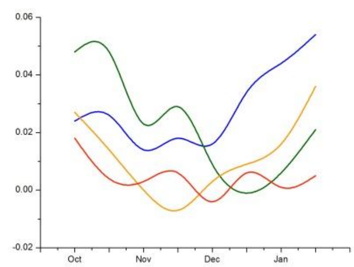

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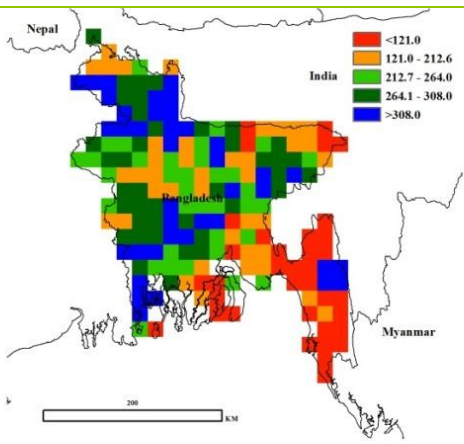

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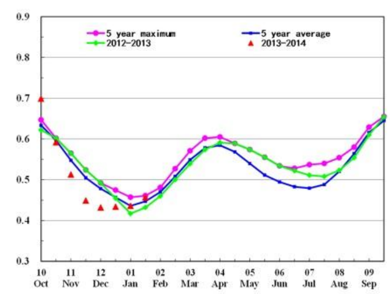

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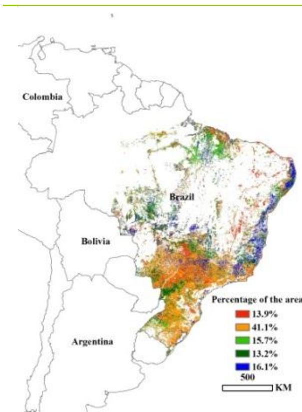
For a description of (a) through (e), see introduction to section 3.2.

[BRA] Brazil

Figure 3.6. Bangladesh crop condition, Oct. 2013-Jan. 2014 (a)

At the end of December, the harvest of both maize in the northeast and wheat (planted in May to June) was completed. First season maize has reached maturity and is ready to be harvested. Generally, rainfall over the monitoring period was below the five- and twelve-year averages, but still 10 percent above the same period last year. The below normal precipitation for the last four months is still sufficient for wheat and first season maize yield establishment. Crop condition was generally above normal and better than the same period one year ago, confirmed by the crop condition development graph (e). Considering the spatial patterns of NDVI departure clusters and corresponding profiles, most areas in Brazil benefited from average to above average conditions, except for central and southern Goiás. Crop condition in Rio Grande Do Sul, the first wheat producing state in Brazil, is slightly above normal with high maximum VCI and biomass. Low precipitation (12 percent below normal) in the second wheat producing state—Parana—significantly affected wheat yield; CropWatch estimates the yield for this state at 1.84 ton/ha, 30 percent below the country's average yield. Below normal rainfall in Goiás, Mato Grosso Do Sul, Minas Gerais, Parana, and Sao Paulo resulted in low biomass compared to the five year average (d).

In general, unevenly distributed rainfall was the dominant stress factor for crops over the monitoring period, but the key wheat producing regions were rarely or slightly affected by the water stress. Maize and soybean in the field may be influenced by the dry weather conditions if lack of rainfall continues. Overall, CropWatch estimates put the output of the recently harvested wheat crop at 5.75 million tons (table 3.5), coinciding with national estimates and representing a welcome improvement (about 30 percent increase) over the reduced 2012 output.



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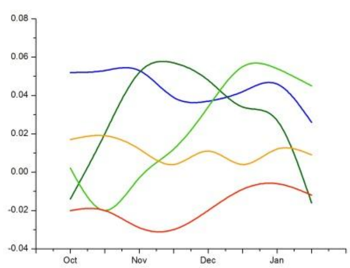

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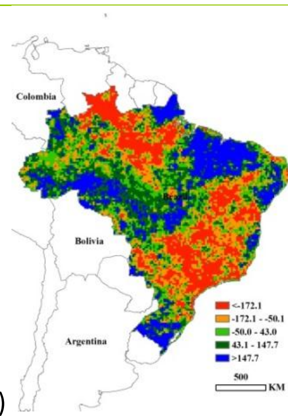

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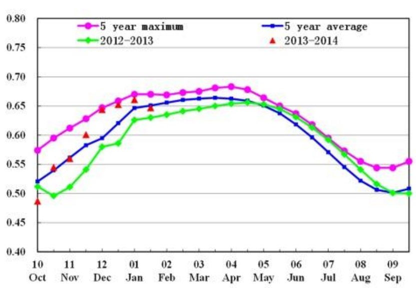

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Table 3.5. Brazil wheat production estimate for 2013-2014

	Area (kHa)	Yield (tons/ha)	Production (kT)
Minas Gerais	36	3.36	121
Sao Paulo	35	2.40	84
Parana	990	1.84	1823
Santa Catarina	74	3.01	223
Rio Grande Do Sul	1061	3.26	3464
Other regions	16	2.19	35
Total	2212	2.60	5750

Note: Data are CropWatch estimates calibrated against national statistics.

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU EGY ETH FRA GBR IDN IND IRN KAZ KHM MEX MMR NGA PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[CAN] Canada

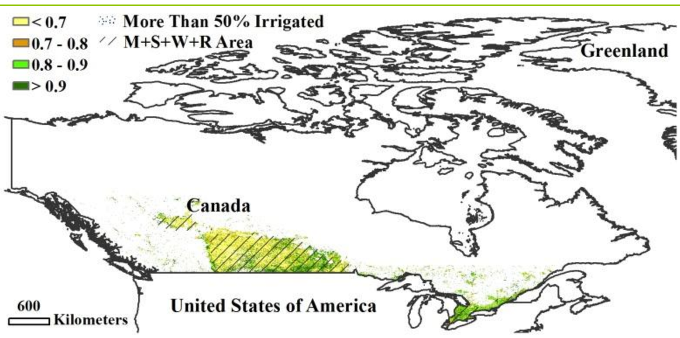
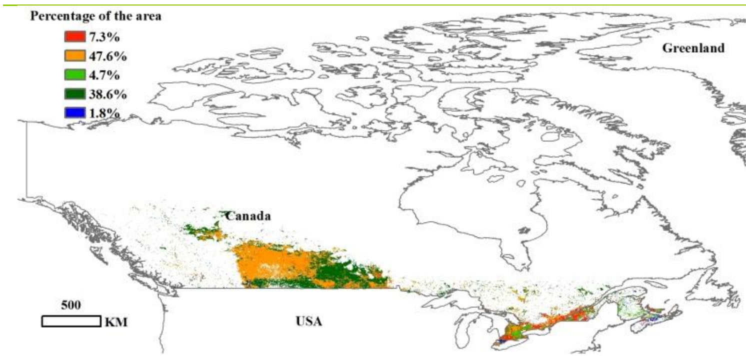


Figure 3.7. Canada crop condition, Oct. 2013-Jan. 2014 (a)

Winter crops in Canada are sowed in September-October, with almost all crops growing in the southern parts of Alberta, Saskatchewan, and Manitoba. Over the monitoring period, all crops have been harvested completely and are currently waiting to be sowed in the coming crop season. The maximum VCI, NDVI, and biomass have little meaning in this period due to the absence of crops. In comparison with the recent twelve-year average for the same period, rainfall tends to increase (+7 percent) and temperature was slightly below normal. As almost croplands in Canada are rainfed, the abundant rainfall in this period would create wet conditions for the coming crop growing season; the lower temperature could also decrease the risk of insect pest.



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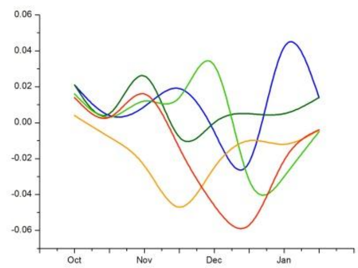

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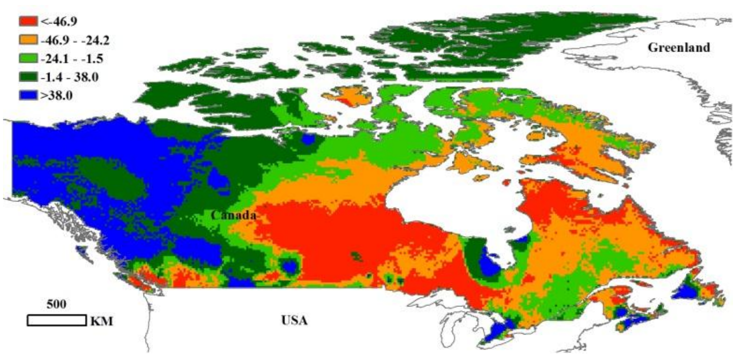

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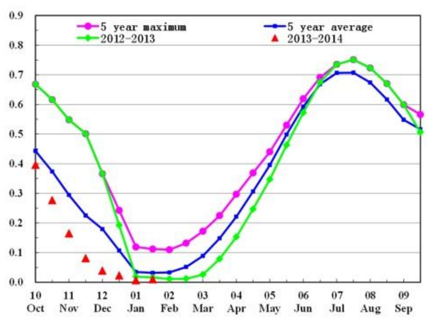

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For a description of (a) through (e), see introduction to section 3.2.

[DEU] Germany

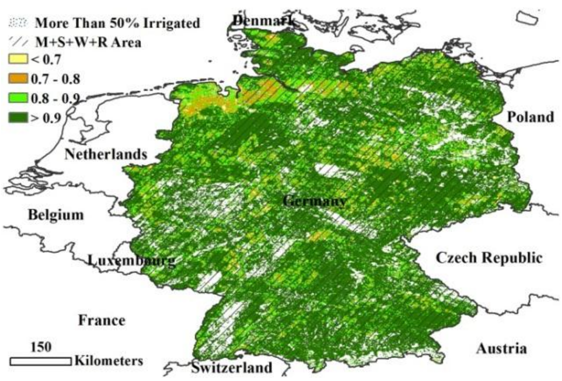
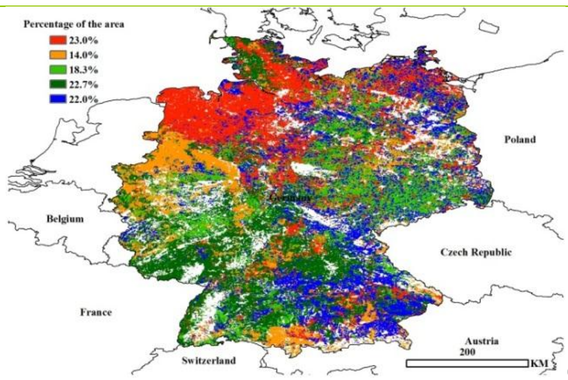


Figure 3.8. Germany crop condition, Oct. 2013-Jan. 2014 (a)

This analysis covers the late stages of sugar beets (October harvest) and the early vegetative stages of winter wheat and winter barley (planted in October). According to HGCA crop updates, the maize harvest was completed at the beginning of December, 2013. The CropWatch environmental indices indicate above average rainfall, temperature, and PAR accumulation (3 percent increase, 1.2℃, and 1 percent increase respectively compared with the last five years' average), which is consistent with the NOAA NCDC report on climate anomalies that Germany experienced the 10th warmest December since its national records began in 1881. With the positive moisture and thermal anomalies, biomass is expected to increase by 10 percent compared to the five-year average at the national scale. This observation is confirmed by the NDVI profiles, with the national NDVI values well above average and even higher than the five-year maximum (except for a sharp drop at the end of January). The NDVI clusters also indicate that NDVI values over the country are above average from the end of October to early January; a sharp drop of NDVI in January is mostly occurring in Niedersachsen, Mecklenburg-Vorpommern, and Bavaria (the red and blue color). The maximum VCI map presents an overall good crop condition with one exception in the northwest of Niedersachsen (a), which is consistent with the red area and red curve in the NDVI clusters (figures (b) and (c).



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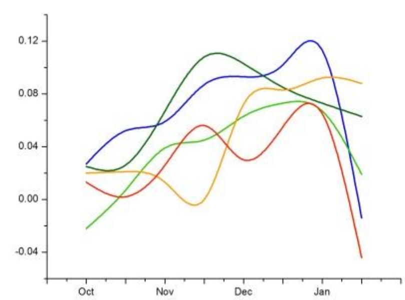
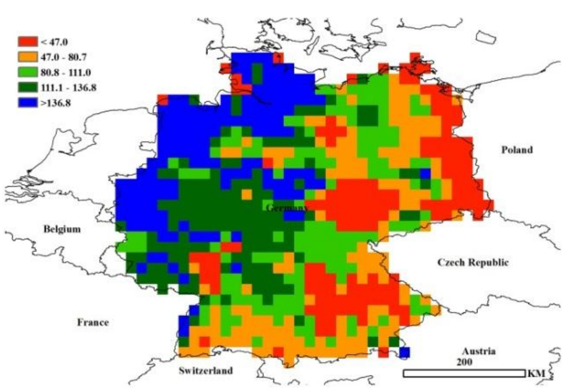


(c)



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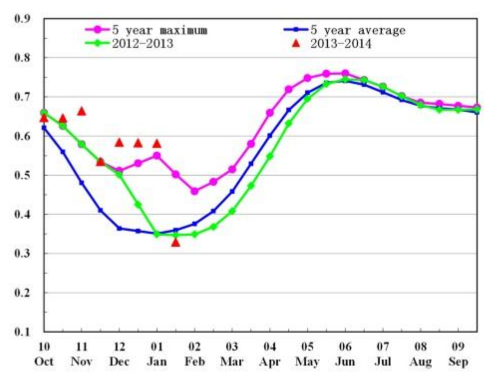


(e)

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU **EGY** ETH FRA GBR IDN IND IRN KAZ KHM MEX MMR NGA PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[EGY] Egypt

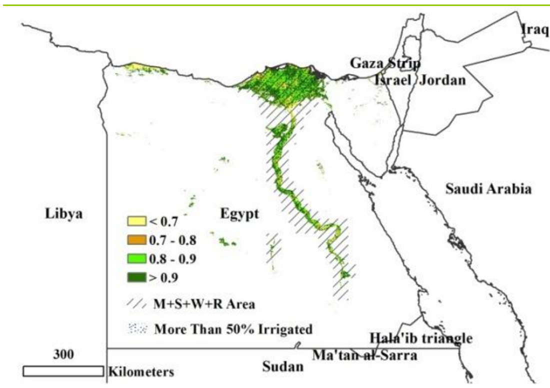
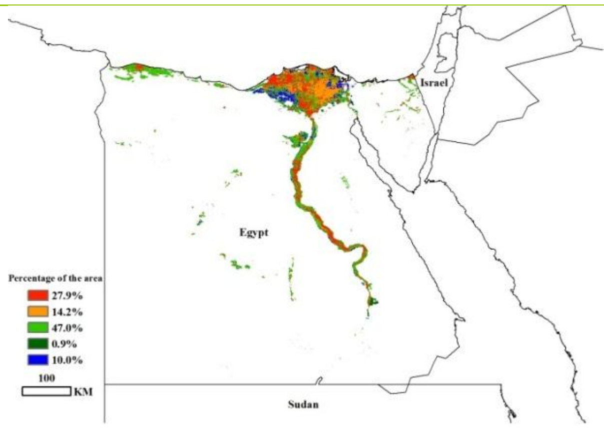


Figure 3.9. Egypt crop condition, Oct. 2013-Jan. 2014 (a)

Egypt is notoriously difficult to monitor, as close to 100 percent of agriculture is irrigated; even the wettest places in the north can only rarely sustain a pure rainfed crop. The environmental indices, which measure conditions only over agricultural areas, indicate below average rainfall (-20 percent), but average temperatures and a slight but positive PAR departure from the last decade. The national biomass increase is listed as about +20 percent. Maximum VCI is close to the 0.9, which denotes a season that is comparable with the best conditions of the recent five years, although the NDVI profile stays below the reference values, possibly reflecting the influence of lower than expected rainfall on natural vegetation, considering all crops are irrigated. The profiles of NDVI clusters are mostly above average but very variable. Biomass accumulation is not meaningful over most of the country, except over the Delta (Behera to Islamailia) where the indicator shows negative (-20 percent in the west) to close to average conditions (-3 percent in the east). Qualitatively, the available indices are compatible with close to average or slightly below conditions for crops harvested in October and November. At the time of reporting, winter wheat is in average to slightly above average condition.



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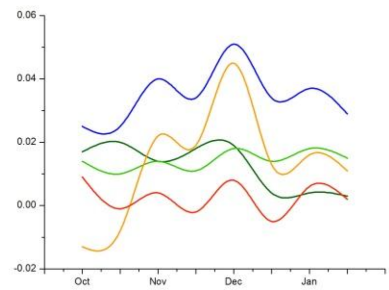

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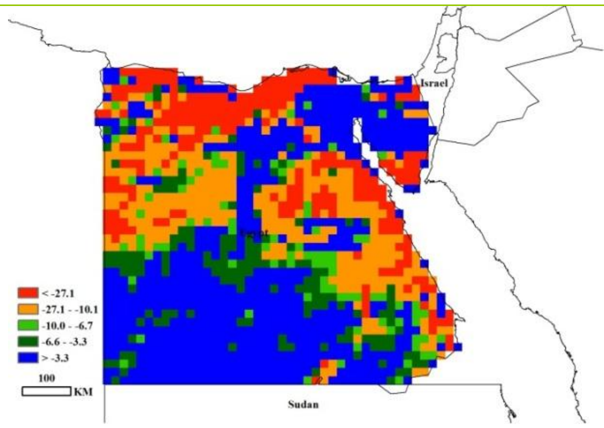

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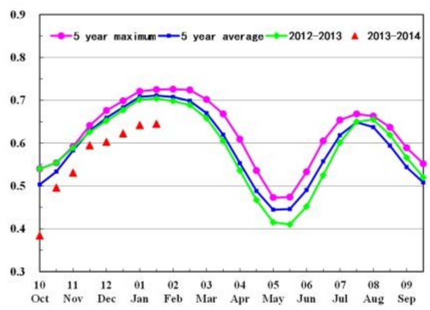


(e)

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU EGY **ETH** FRA GBR IDN IND IRN KAZ KHM MEX MMR NGA PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[ETH] Ethiopia

December is the main harvesting season for all "meher" crops in Ethiopia, although many of them mature earlier and stay in the field until labor availability permits their harvest. This report thus covers the late stages of the 2013 crops. The national environmental indices (October to January) are average for temperature and PAR but above average for rainfall (+30 percent) and biomass accumulation (about +20 percent over both the last decade and the last five years). Vegetation condition indices are mostly high or very high (>0.8) confirming the overall positive outcome of the 2013 season, except in limited areas bordering the semi-arid Afar, or east SNPP and adjacent areas in central Oromia. The biomass departure map confirms that some areas had close to average outcomes, but large portions of the country were above.

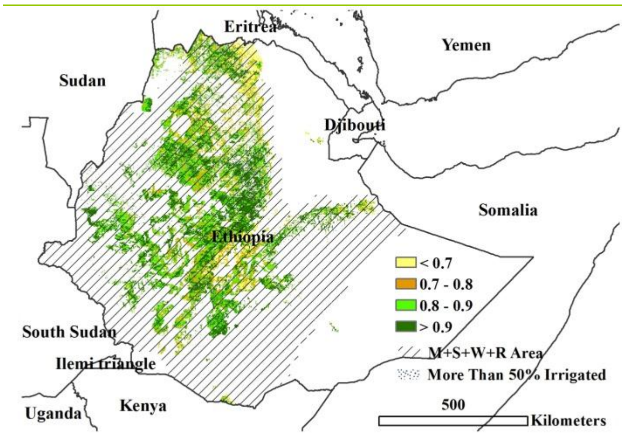
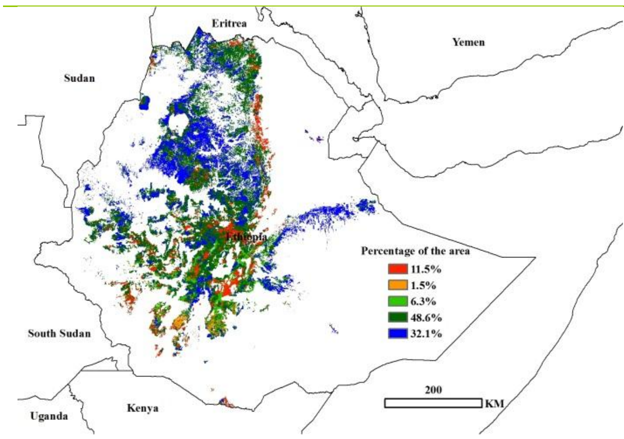


Figure 3.10. Ethiopia crop condition, Oct. 2013-Jan. 2014

(a)



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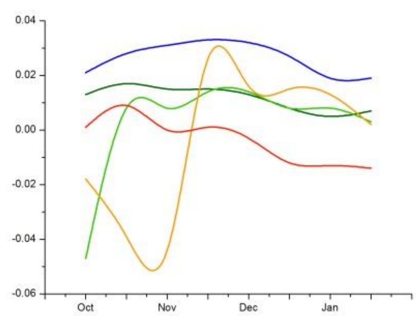

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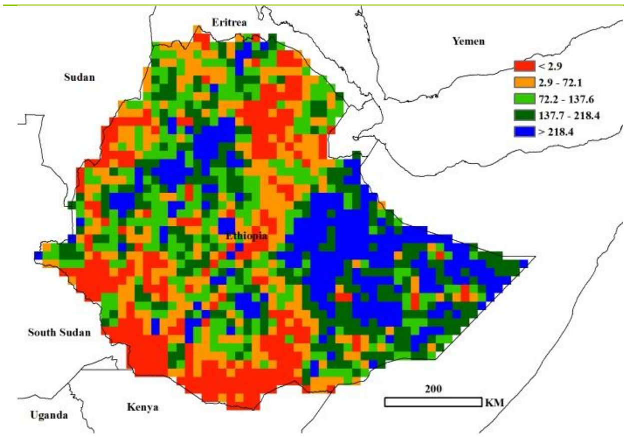

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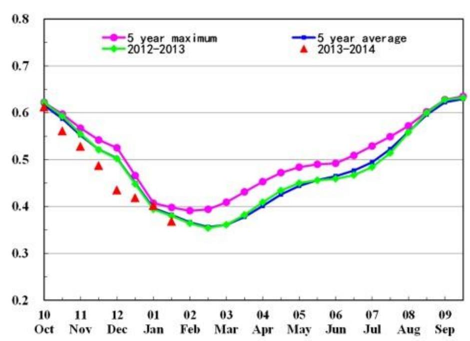


(e)

For a description of (a) through (e), see introduction to section 3.2.

[FRA] France

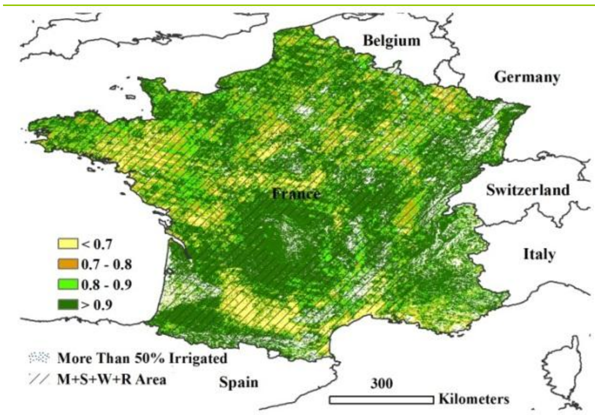
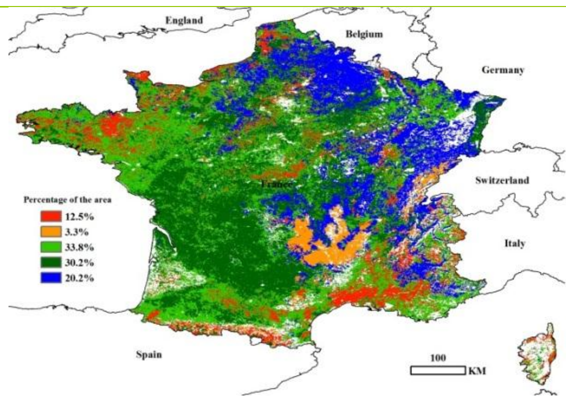
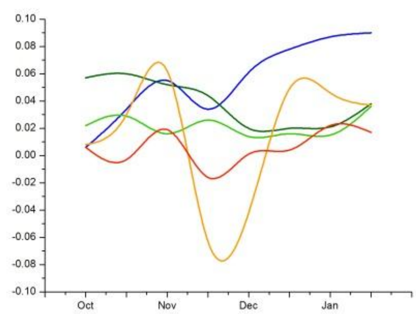


Figure 3.11. France crop condition, Oct. 2013-Jan. 2014
(a)

This analysis covers the late stages of sugar beets (October harvest) and the early vegetative stages of soft wheat and winter barley (planted in October). According to HGCA crop updates, the maize harvest was a little delayed with 85 percent of maize area harvested by December 2, 2013, compared with 99 percent harvested at the same time last year. Compared with the last five-year average, the CropWatch environmental indices show warmer than average weather and close to normal PAR at the national scale. These observations are consistent with the warmer than usual weather in Europe recorded in the JRC/MARS bulletin. At the national level, biomass presents a 3 percent increase compared to the recent five-year average, which agrees with the increase of national maximum VCI value and the well above average national NDVI values in the NDVI profiles (e). According to the NDVI clusters ((b) and (c)), NDVI values are above average across the country with the exception of the south of Auvergne and the north of Languedoc-Roussillon region, where NDVI values are below average from late November to mid-December. The Aquitaine and Midi-Pyrenees regions (dark green in figure (b)) present high NDVI values from October to November, but gradually decrease thereafter, after maize has been harvest. Generally good NDVI conditions are present in Picardie and Champagne-Ardenne region and the east and south of Bourgogne-Franche Comté (figures (b) and (c)), which agrees well with the positive biomass departure shown in dark green and blue in figure (d).



(b)



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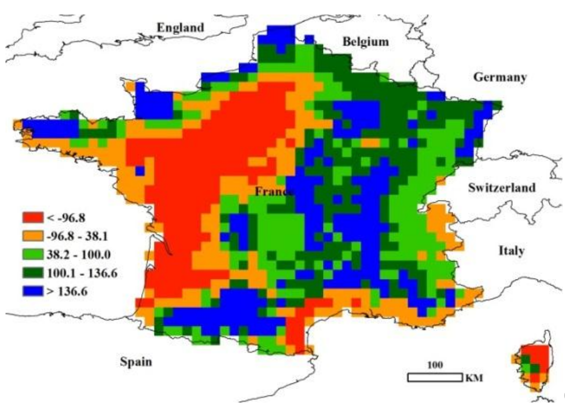

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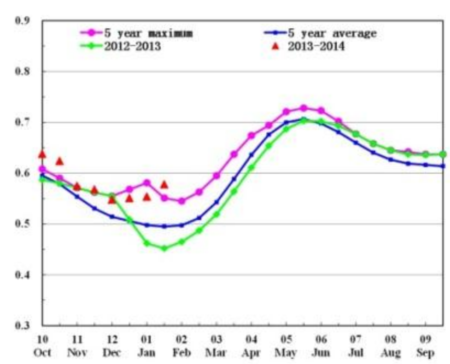


(e)

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU EGY ETH FRA **GBR** IDN IND IRN KAZ KHM MEX MMR NGA PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[GBR] United Kingdom

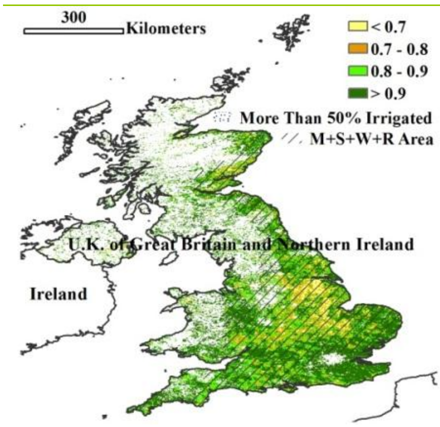
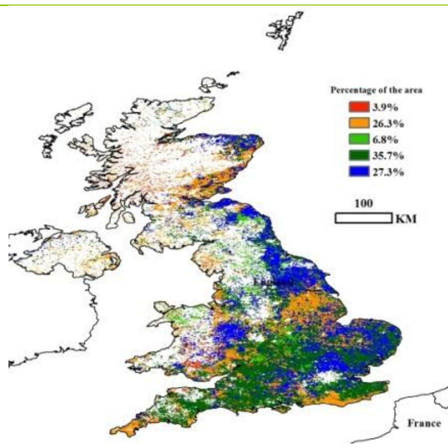
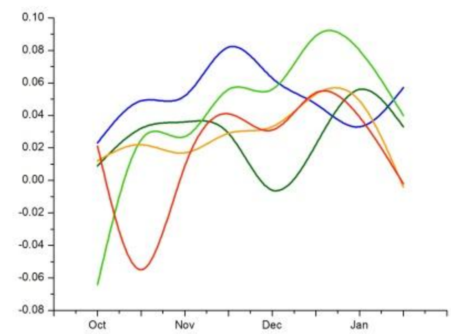


Figure 3.12. United Kingdom crop condition , Oct. 2013-Jan. 2014 (a)

This analysis covers the late stages of sugar beets (December harvest) and the early vegetative stages of winter wheat, winter barley, and rapeseed. According to HGCA crop updates, by the end of November 2013, 94 percent of intended wheat area was planted and the planting of winter barley and winter oilseed rape had been completed. The United Kingdom presents abnormal weather conditions in this period with an increase of all CropWatch environmental indices, especially rainfall (up 43 percent compared with both the recent five years and the 2001-2013 average). These observations are supported by the NOAA NCDC report on climate anomalies and the JRC/MARS bulletin, which suggested that the national mean temperature during December 2013 was the warmest since 1988 and that the country continued to have wetter than average conditions in January. Based on this period, the biomass at the national scale is expected to increase by 14 percent compared with the last five years, assuming favorable conditions prevail from now onwards. This is consistent with the interpretation of the NDVI profile (e), which shows that the national NDVI average is well above the recent five-year average and close to the five-year maximum value. According to the NDVI clusters, from November onwards, the NDVI values across the country are above average. The southwest and southeast regions present a NDVI decrease from November to December due to excess water, but have since recovered. A shift from positive departure to negative departure of biomass from south to north is observed in figure (d).



(b)



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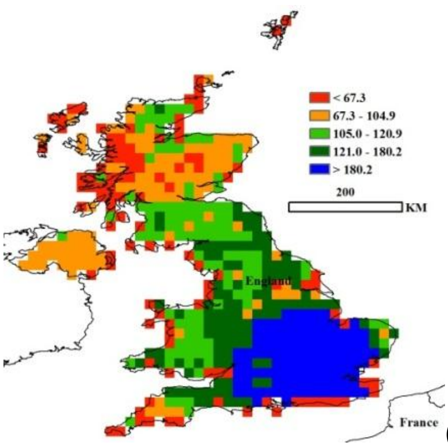

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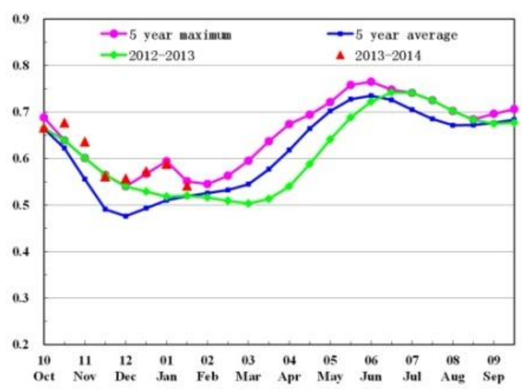


(e)

For a description of (a) through (e), see introduction to section 3.2.

[IDN] Indonesia

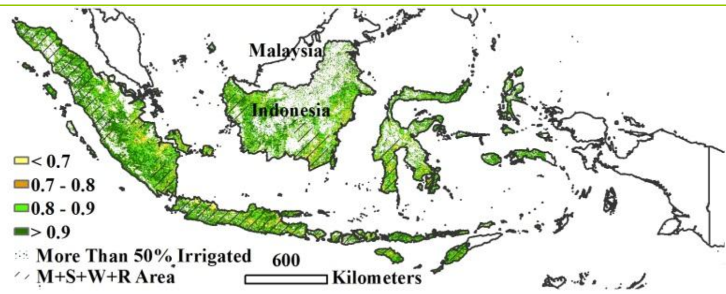
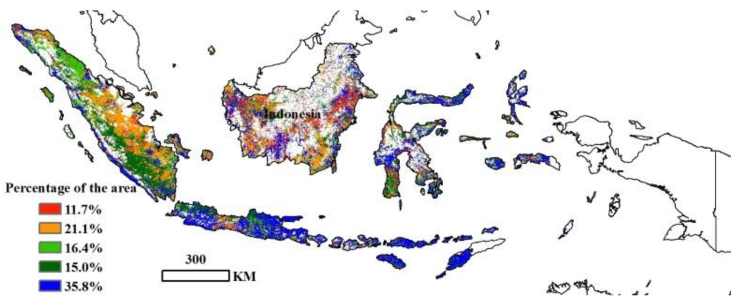


Figure 3.13. Indonesia crop condition , Oct. 2013-Jan. 2014 (a)

Wet season crops are currently in the field, to be harvested from March. Low environmental indices (including PAR and air temperature) indicate unfavorable crop condition, possibly compensated by normal to above-normal rainfall conditions. Compared with the recent past, the national NDVI profile was below average in December, but improved at the end of January. As a result, crop condition is now generally average or above average, except for the west of Sumatra, possibly as a result of recent flooding.



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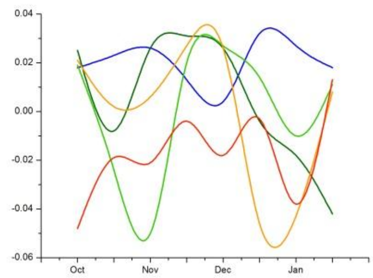

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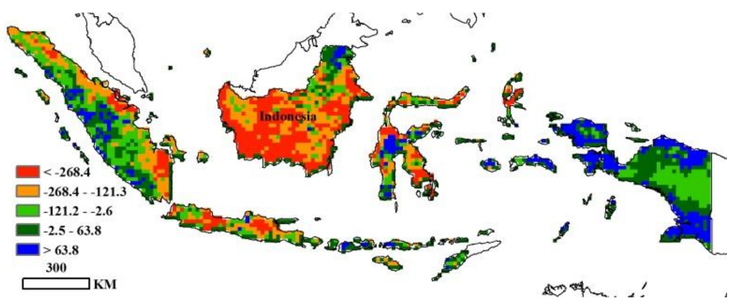

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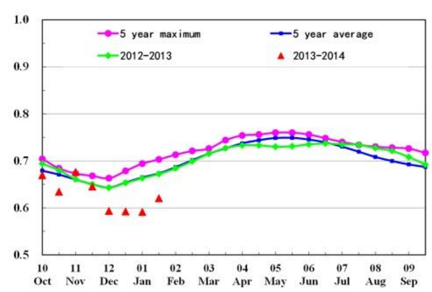


(e)

For a description of (a) through (e), see introduction to section 3.2.

[IND] India

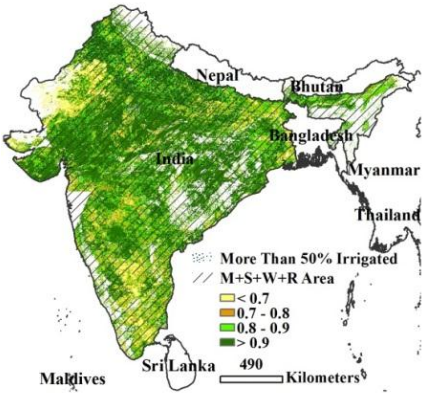
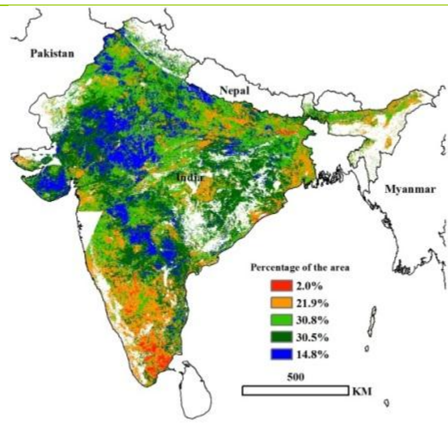


Figure 3.14. India crop condition , Oct. 2013-Jan. 2014 (a)

The period from October 2013 to January 2014 is of relevance for the rabi (winter) wheat and rice crops in India, whose planting has been completed by December. The results of the environmental conditions monitoring by CropWatch indicate that the country enjoyed favorable rainfall over the whole monitoring period except in the southern region where rainfall was below the 2001-2013 average. On the contrary, the air temperature was generally lower than the average except in the northwestern tip of India. The PAR kept balance with that of the reference period.

Crop condition in India was below average from October to end November; it then improved until January, when it came close to the recent five-year average. The favorable rains boosted planting of rabi cereal crops and the prospects for maize and rice are good. The NDVI was below the five-year average in the southern tips of Tamil Nadu throughout the monitoring period. This is confirmed by maximum VCI: most of India enjoys a maximum VCI in excess of 0.9, with the exception of Rajasthan in the northeast, the southern tip of Tamil Nadu, and Puducherry where the maximum VCI is below 0.7. Low biomass accumulation in the southwestern part of India (including Maharashtra, Goa Karnataka, southern Andhra Pradesh, and Puducherry) coincides with the lower rainfall regions.



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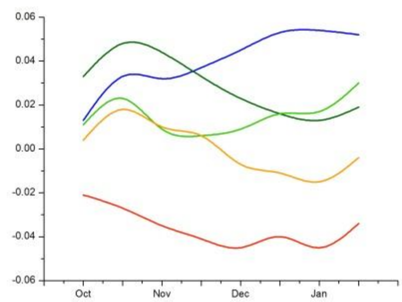

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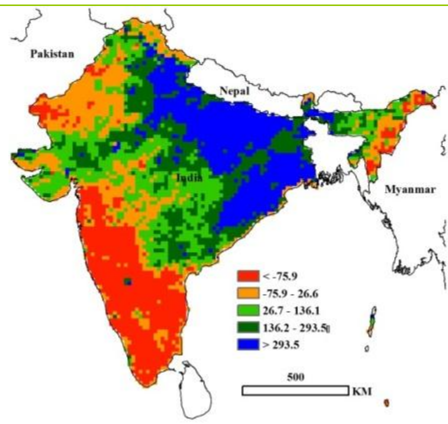

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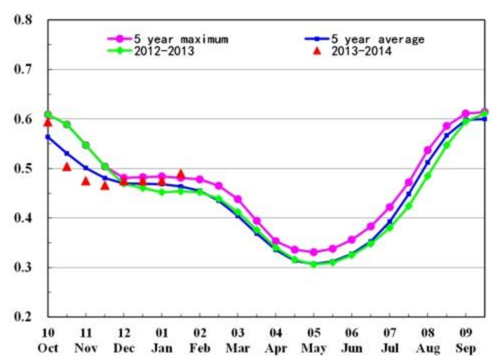


(e)

For a description of (a) through (e), see introduction to section 3.2.

[IRN] Iran

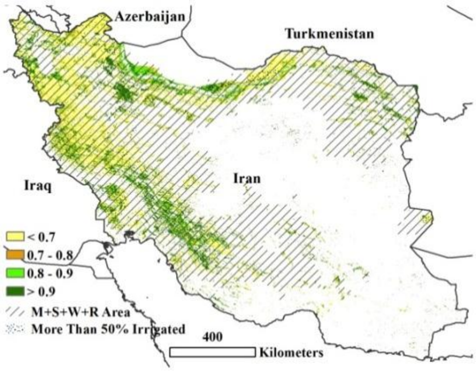
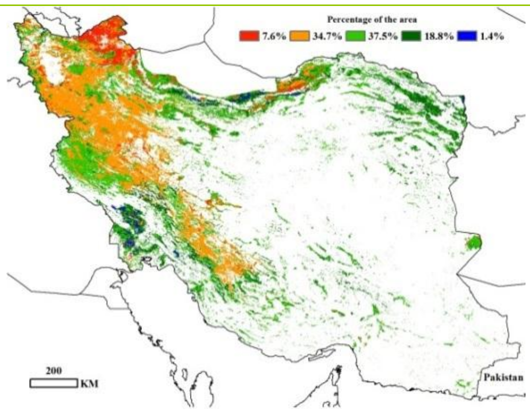


Figure 3.15. Iran crop condition , Oct. 2013-Jan. 2014 (a)

Accumulated rainfall, PAR, and biomass for October 2013 to January 2014 were above the five-year and twelve-year averages for the same period, while the accumulated temperature was below. At the end of January, the planting of winter wheat had been finished, while the planting of barley is still underway. The environmental indices for the current season indicate mixed conditions for winter crops. Compared to the twelve-year average, maximum VCI decreased by 0.06, indicating unfavorable crop conditions for winter. Conditions were close or above the five year average in the Razavi Khorasan and North Khorasan provinces of the northeast region, the Mazandaran and Golestancenter provinces of the central-north region, and the Khuzestan, Kermanshah, and Fars provinces of the southwest region. The crop conditions in the northwest, particularly the East Azerbaijan province, West Azerbaijan province and Kurdistan province, were below the five year average. Most regions experienced close to average crop conditions from October to November and below average crop conditions through December, with a return to average at the end of January. However, when major wheat producing areas are considered, Iran's latest winter crop generally underwent unfavorable conditions so far. Rainfall from February will be crucial in determining the final outcome of the season.



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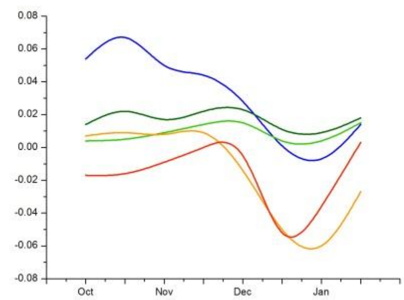

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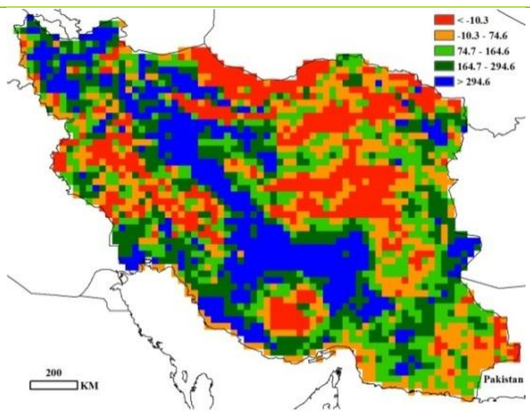

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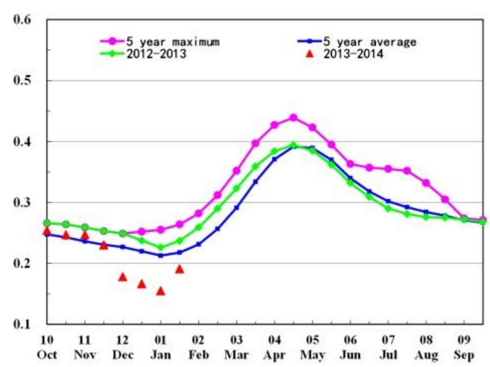


(e)

[KAZ] Kazakhstan

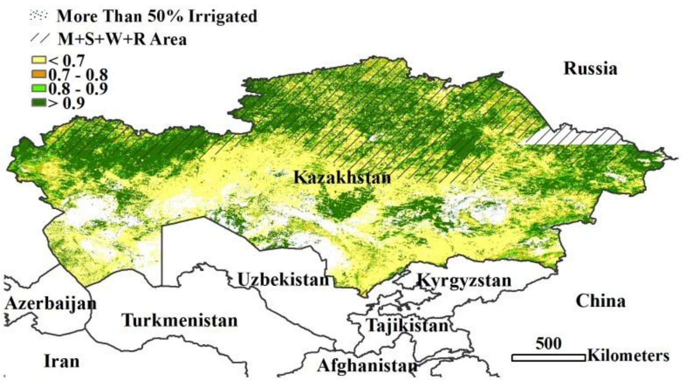
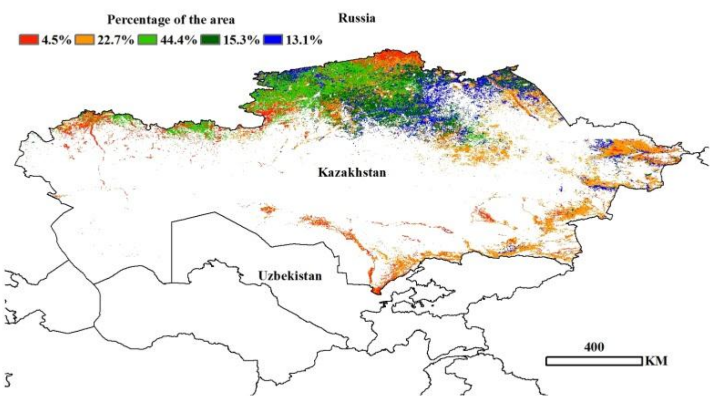


Figure 3.16. Kazakhstan crop condition , Oct. 2013-Jan. 2014 (a)

This analysis covers the harvesting period of last year's summer crops (cereals, spring barley, and wheat) from October 2013 to late January of this year. The NDVI clusters (figure b) indicate that crops were in good condition from October to late November. No crop was planted since November and from December the NDVI index has been close to the zero (figure e). Compared with the recent five-year average, the CropWatch environmental indices show a sharp increase of rainfall (32 percent) and biomass (22 percent), along with a slight increase in temperature and PAR. Favorable rainfall has provides the soil moisture for the initial stages of the next crops. The maximum VCI map presents a good crop condition with the value higher than 0.9 (figure a).



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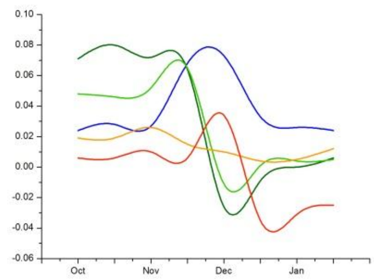

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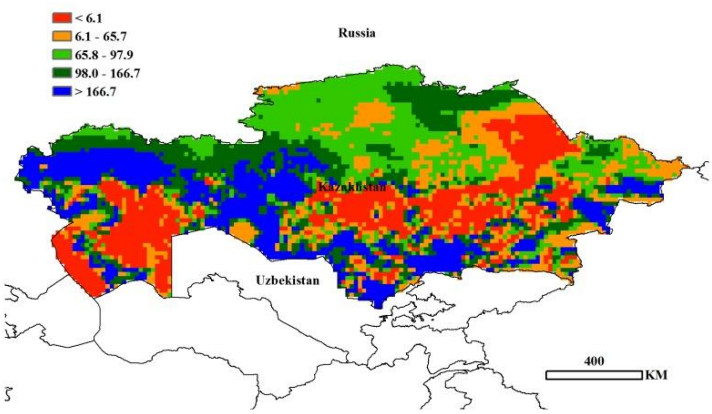

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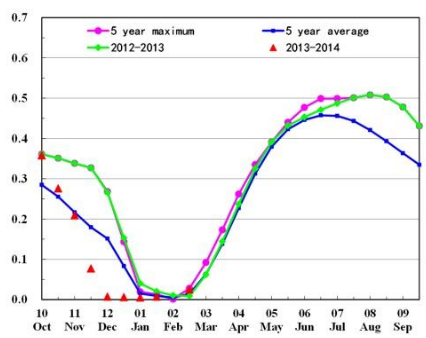


(e)

For a description of (a) through (e), see introduction to section 3.2.

[KHM] Cambodia

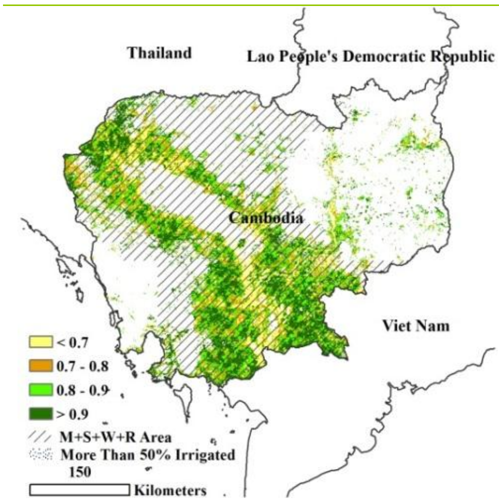
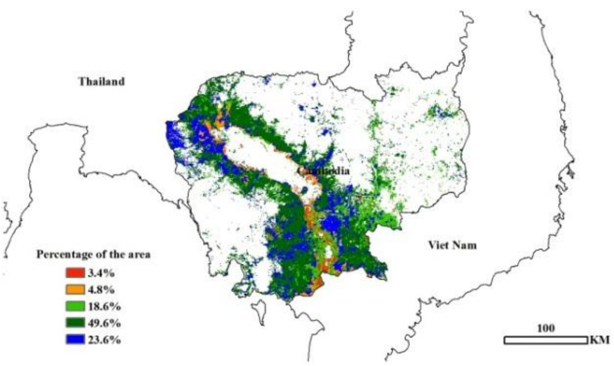
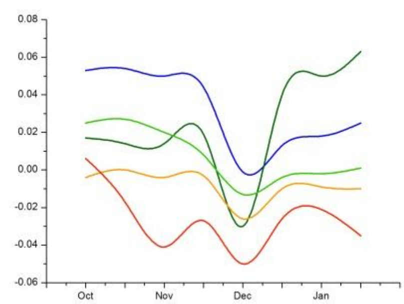


Figure 3.17. Cambodia crop condition , Oct. 2013-Jan. 2014 (a)

This analysis covers the growing stages of the main (wet season) rice crop in October and the initial stages of second (dry season) rice planting in November. The major rice cultivation covers the area of the Tonle Sap basin and the southern Mekong River, where the vegetation condition index is highest in Banteay Meanchey, Prey Veng, Svay Rieng, and Takeo provinces. Conditions from October to November were above the five-year average because of the heavy monsoon rains resulting in favorable conditions for the main rice crop. The CropWatch environmental indices show almost average rainfall but a temperature decrease of 1 degree (in comparison with the last five years). However, there is no effect on biomass accumulation. Generally, the profiles of NDVI clusters are about average in all areas, while they exceed average conditions around Phnom Penh, Banteay Meanchey, and Battambang. In December, NDVI cluster profiles sharply declined for all areas due to below average rainfall .The biomass index indicates overall average conditions in the northwest region along the Thailand border as well as Tonle Sap, while unfavorable conditions prevail in the east region, along the Vietnam border.



(b)



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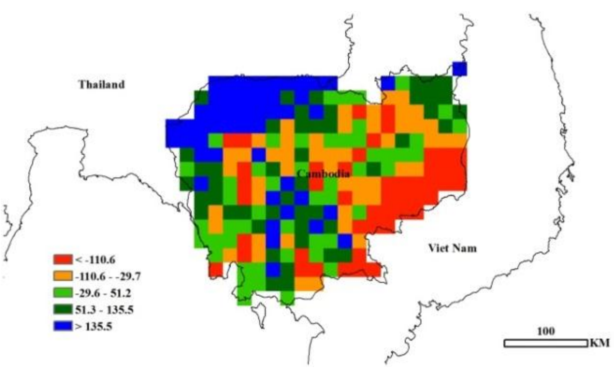

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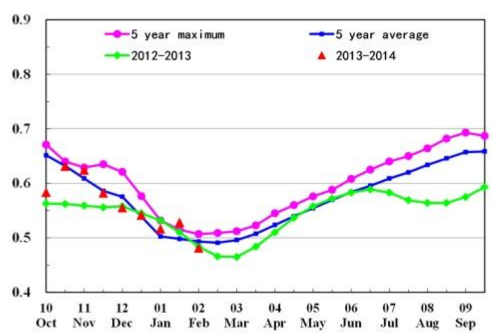


(e)

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU EGY ETH FRA GBR IDN IND IRN KAZ KHM **MEX** MMR NGA PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[MEX] Mexico

The monitoring period (October 2013 to January 2014) coincides with Mexico's dry season. More than 70 percent of the summer crop has been harvested. During this period, the rainfall was higher than the recent five-year average (+ 81 percent) for the same period; temperature and photosynthetically active radiation were near average. Thanks to good weather conditions, the maximum VCI in the south region of Mexico is much above the five-year average, indicating good crop growing condition. Crop growing condition is above the five-year average, but below the five-year maximum and last year's value. More than 40 percent of crop areas display relatively good growing condition (compared again to the five-year average), while 23.8 percent shows an inferior condition.

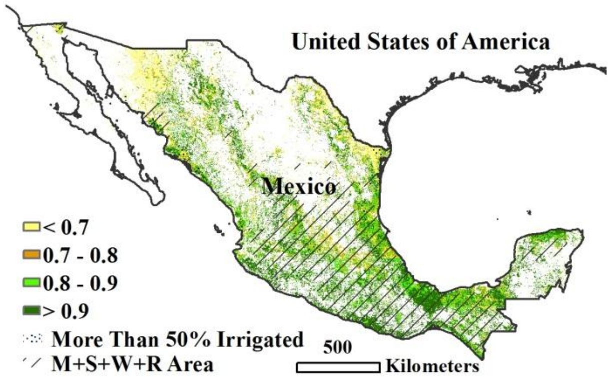
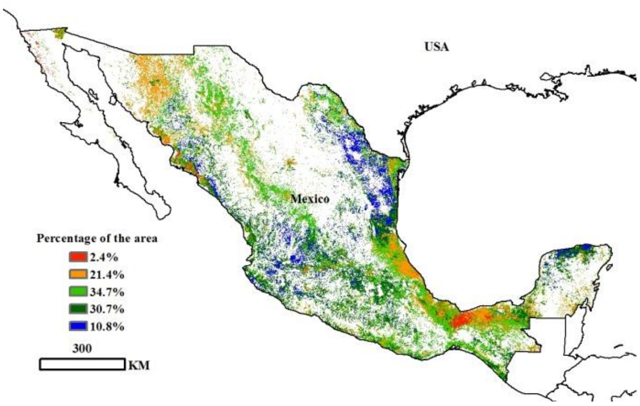


Figure 3.18. Mexico crop condition, Oct. 2013-Jan. 2014 (a)



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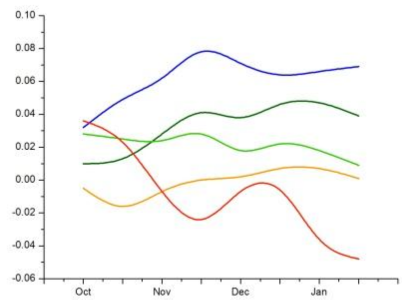

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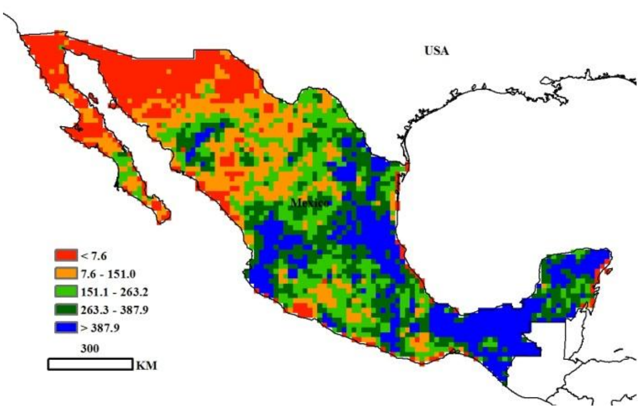

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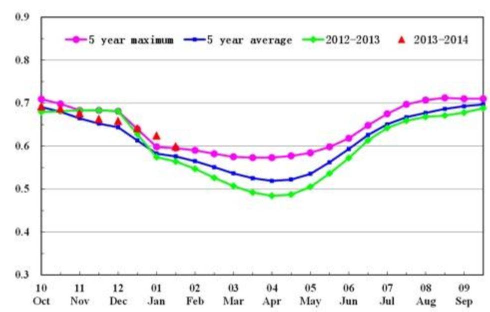
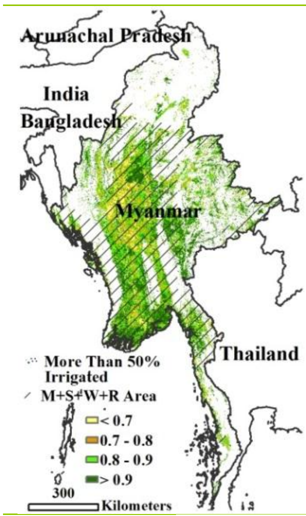


(e)

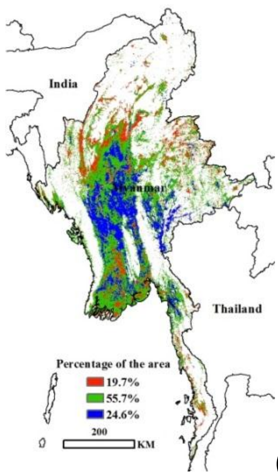
For a description of (a) through (e), see introduction to section 3.2.

[MMR] Myanmar



October is the harvesting season for the main rice crops, while the crops currently in the field include wheat, maize, and the second rice crop. For the period under consideration, the environmental indices are average for temperature and PAR but above average for rainfall (+26 percent) and biomass accumulation (almost 10 percent compared with the last five years). In general, the favorable precipitation condition in the cultivation period over large parts of the country benefited the vegetative stage. On the contrary, the average NDVI profile shows below average conditions compared with the last five years, possibly due to severe monsoon rains during late July to October, which caused devastating flooding in the southern region, Kayin state, and Bago state. Maximum vegetation condition indices are very high in Sagain, Ayeyarwady, Bago, and Yangon where rice is the major crop. The profiles of NDVI clusters are mostly above average in the largely irrigated dry zone, which is a major rice producing region and also a cultivation area for wheat. Biomass accumulation points at average to below average conditions mostly in the northern region, and to favorable conditions in the central dry zone of Myanmar.

Figure 3.19. Myanmar crop condition, Oct. 2013-Jan. 2014 (a)



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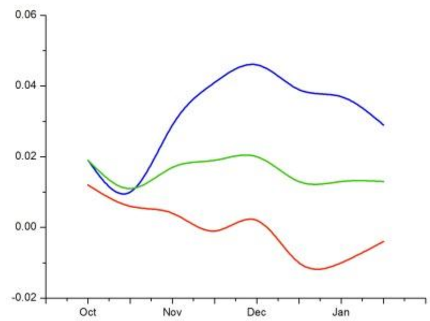

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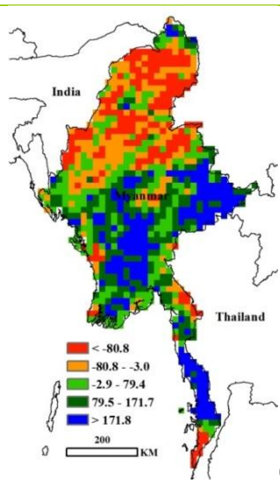

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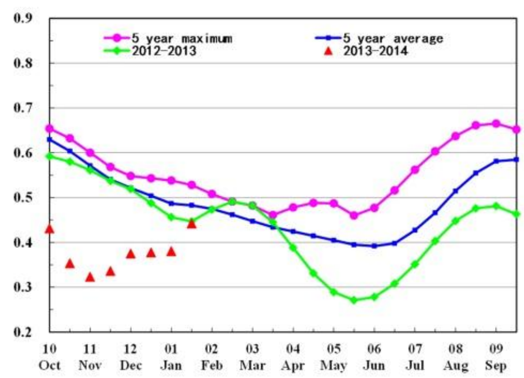


(e)

For a description of (a) through (e), see introduction to section 3.2.

ARG AUS BGD BRA CAN DEU EGY ETH FRA GBR IDN IND IRN KAZ KHM MEX MMR **NGA** PAK PHL POL ROU RUS THA TUR UKR USA UZB VNM ZAF

[NGA] Nigeria

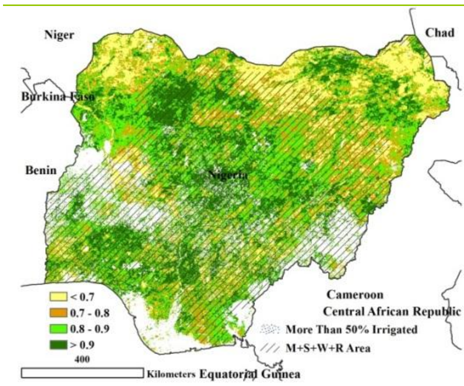
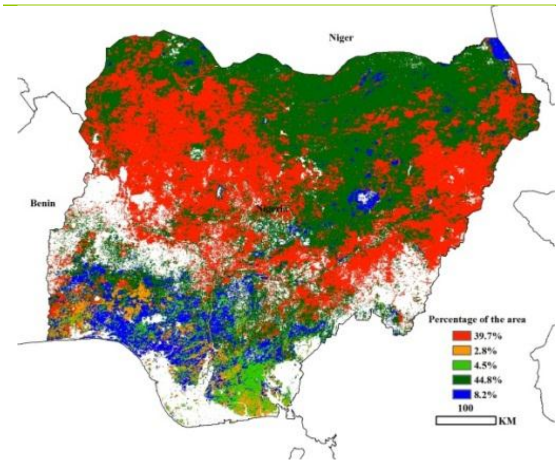


Figure 3.20. Nigeria crop condition , Oct. 2013-Jan. 2014 (a)

The crops currently cultivated in Nigeria include mostly yams and cassava and limited amounts of irrigated rice in east Niger (central Nigeria) to Taraba and Crossriver states along the border of Cameroon. In the southernmost states, where the season reaches a length of ten months, a second maize crop can be produced. Both rice and the secondary late maize (in terms of area and output) have been harvested in January and the maps in this section thus cover their final stages. The main maize crop was harvested just before the current reporting period started. According to the CropWatch environmental indices, the current period is characterized by an unusual combination of both above average rainfall and radiation resulting in a national biomass accumulation almost 10 percent above the average of the recent decade, but below the average of the last five years. Current national NDVI values are close to the seasonal average, recovering from below average four months ago. NDVI profiles are usually about average everywhere (including in rice growing areas), but above average in large reaches of the south, pointing at favorable conditions of the second maize crop. Fluctuating conditions occurred mostly in the southern areas around Oyo State (west) but are unlikely to have affected crops. Biomass accumulation points at unfavorable growth in the eastern rice growing areas, but confirms the favorable situation for the second maize crop.



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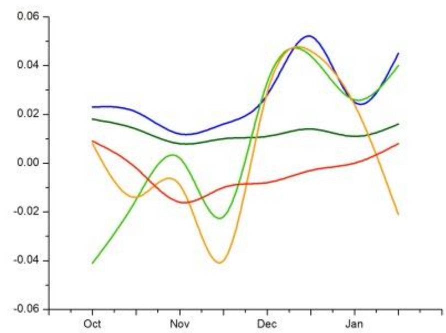

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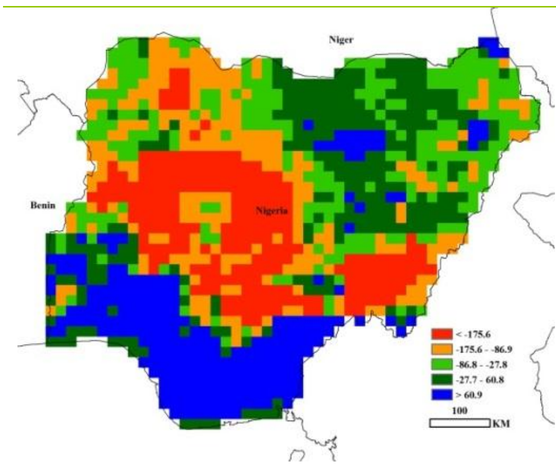

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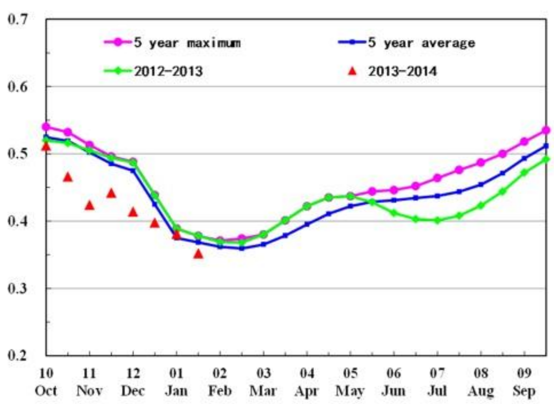
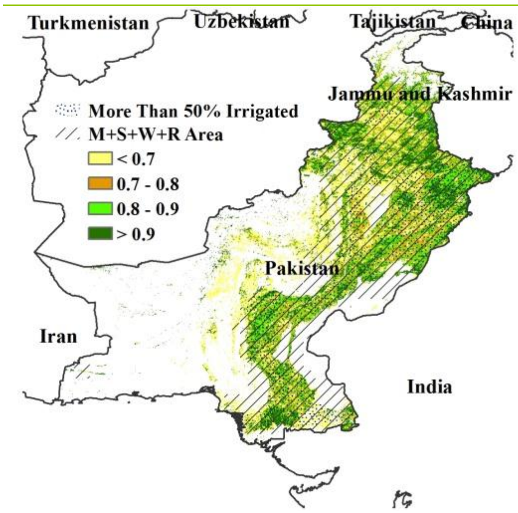


(e)

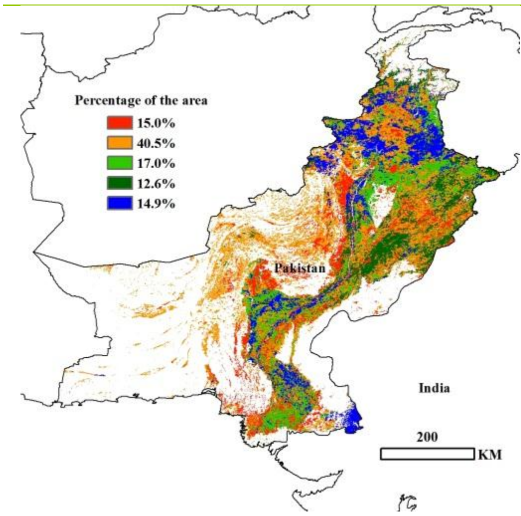
For a description of (a) through (e), see introduction to section 3.2.

[PAK] Pakistan



This monitoring period covers the harvesting stage of last year's summer crops (maize, rice and sorghum), as well as the sowing and growing stage of winter wheat and winter barley. Environmental indices indicate a sharp increase of rainfall (67 percent) and biomass (19 percent), while PAR is a little above last the five-year average level for the same period. Favorable rainfall improved the soil moisture condition. Since December, the average NDVI profiles (figure e) indicate that crop condition is now close to the five-year average, after a less favorable period in January, a period when other sources report a drop in rainfall. All indicators agree in assessing the condition of crops (essentially rabi wheat) in north Punjab as in better condition than in the eastern-central areas of the province.

Figure 3.21. Pakistan crop condition, Oct. 2013-Jan. 2014 (a)



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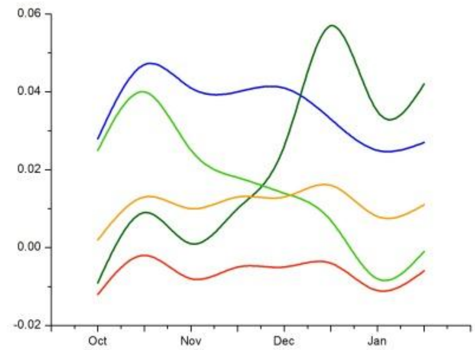

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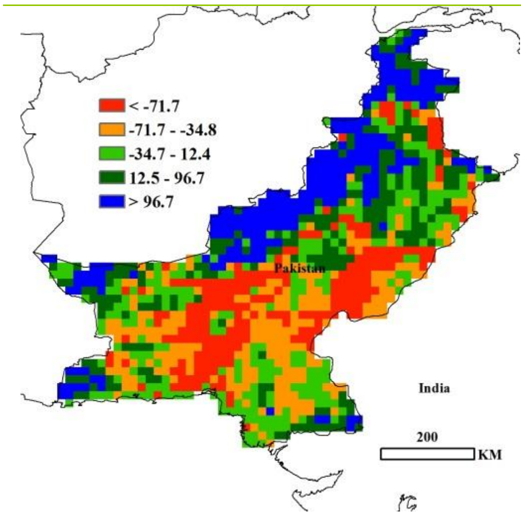

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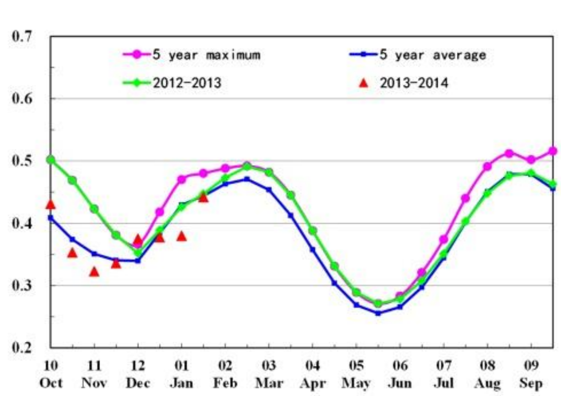
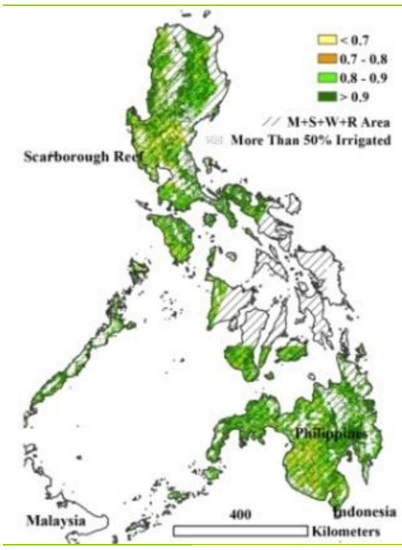


(e)

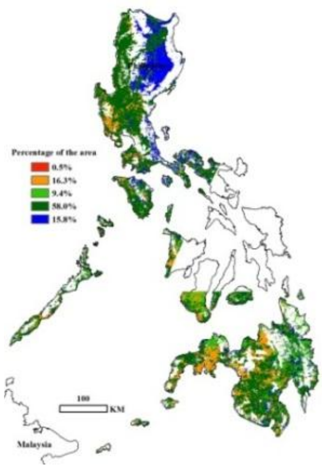
For a description of (a) through (e), see introduction to section 3.2.

[PHL] The Philippines



The Philippines, like Indonesia, mostly enjoys a very long humid season with ample moisture supply, interrupted locally by a short dry season around the beginning of the year. As illustrated by below average environmental indices for air temperature and PAR, accompanied by above-average rainfall, crops planted in November (for harvesting around April) may suffer from the unfavorable weather conditions for the season. NDVI profiles (e) indicate that throughout the season the country underwent average conditions comparable with those of previous years. According to the recent crop condition map (b and c), northeast of Luzon generally enjoyed average conditions. For biomass, Mindanao experienced a favorable season, in stark contrast with most areas of Luzon (d). According to the National Disaster Risk Reduction and Management Council (NDRRMC), Typhoons Haiyan and Nari (Santi) led to significant damage to paddy production. As mentioned in section 5.1 on natural disasters, the production loss is currently set to about 5 percent of the national production.

Figure 3.22. Philippines crop condition, Oct. 2013-Jan. 2014 (a)



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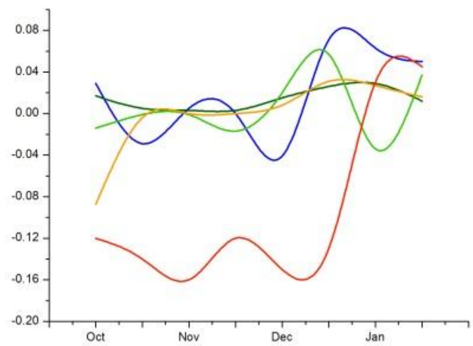

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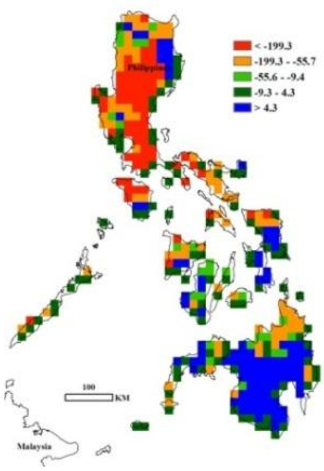

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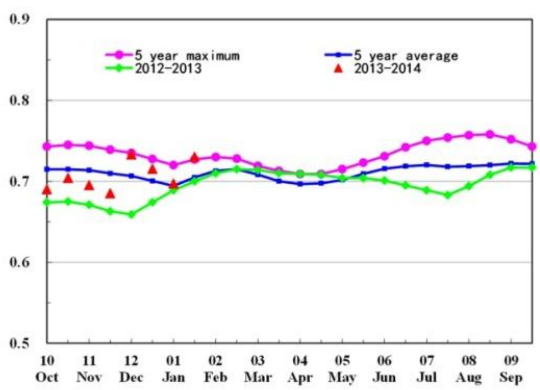


(e)

For a description of (a) through (e), see introduction to section 3.2.

[POL] Poland

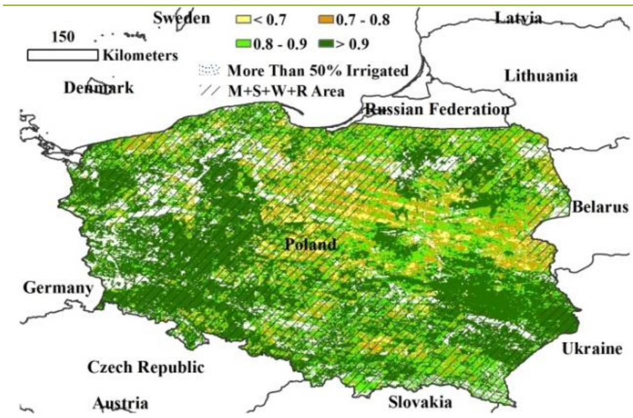
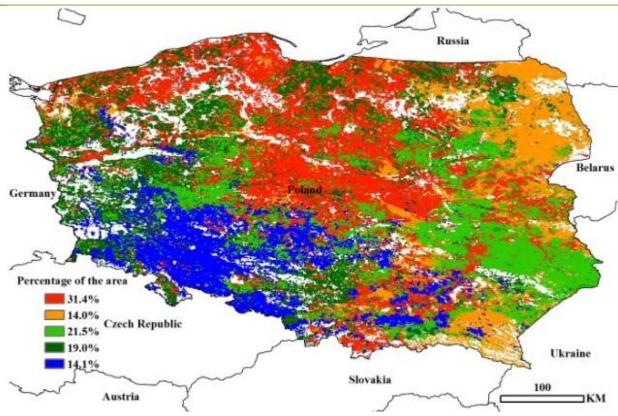
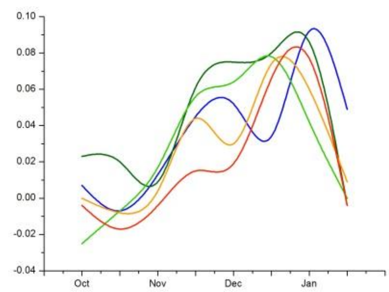


Figure 3.23. Poland crop condition, Oct. 2013-Jan. 2014 (a)

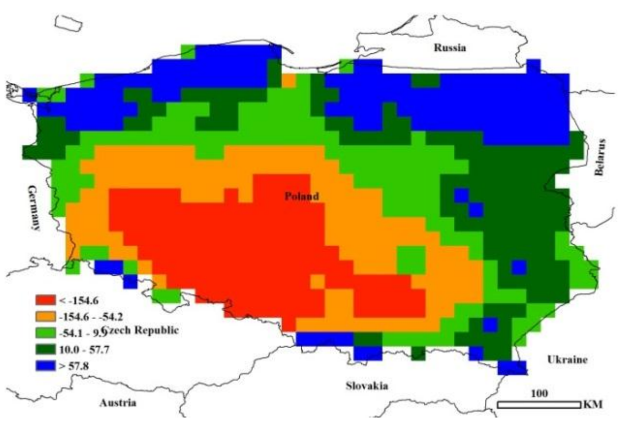
This analysis covers the late stages of sugar beets and maize (harvest completed in November, according to HGCA crop updates) and the early vegetative stages of wheat and rapeseed. The CropWatch environmental indices show an increase in temperature and PAR accumulation (1.7℃ and 2 percent respectively), and a decrease in rainfall and biomass (-20 percent and -5 percent respectively) compared with the last five-year average. These observations are consistent with the records in the JRC/MARS bulletin that Poland experienced a positive thermal anomaly and drier than usual weather condition, which may cause a slow down or delay in the crop hardening process. This slow-down process is well captured by the NDVI profiles (e) with an overall decreasing trend of national NDVI values (although above the five-year average from December to early January). The sharp drop in late January in both figures (e) and (c) might be due to the cold air flow over Poland around January 15, as reported by JRC/MARS. The maximum VCI map indicates that the best crop condition (a, in dark green) in this period prevails in the southwest (Wielkopolskie, Dolnoslaskie) and southeast (Mazowieckie, Lubeiskie) of the country, while crop condition in the central and northern region is less favorable, which agrees well with the pattern from the NDVI cluster (b). Figure (d) shows that, compared with the recent five years, the spatial distribution of biomass over the reporting period present a patterns increasing from southwest to northeast.



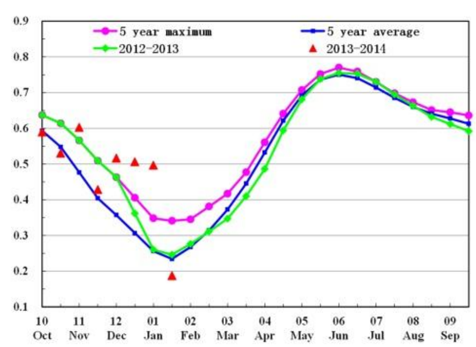
(b)



(c)



(d)



(e)

For a description of (a) through (e), see introduction to section 3.2.

[ROU] Romania

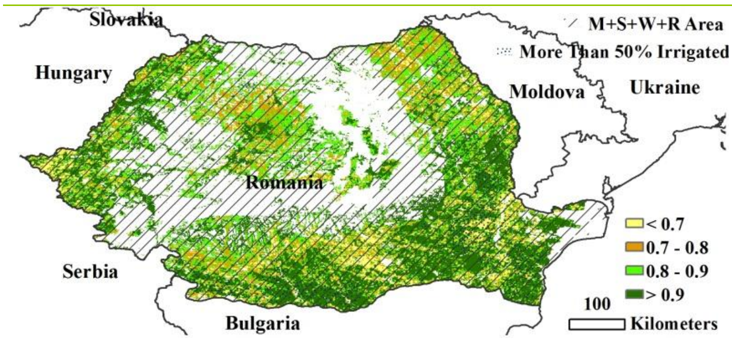
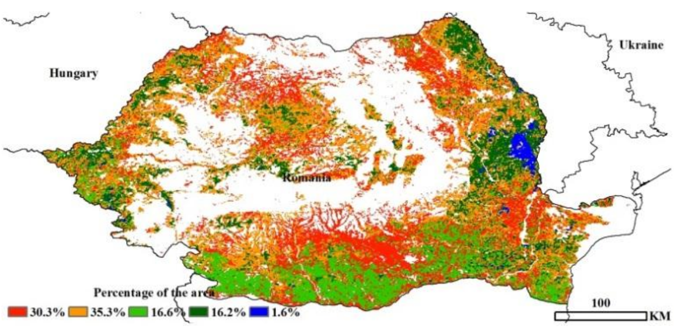
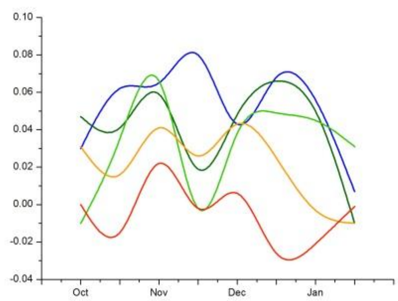


Figure 3.24. Romania crop condition, Oct. 2013-Jan. 2014 (a)

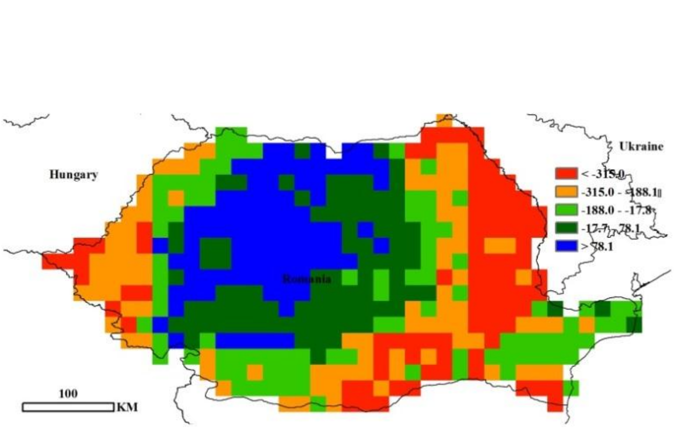
This analysis covers the late stages of maize (harvest completed in November) and the early vegetative stages of wheat (planted in October). The CropWatch environmental indices show above average temperature (up 1.1℃) and slightly increased PAR accumulation, but a large decrease in rainfall (-20 percent compared with the five-year average). These indices agree well with the explicit positive thermal anomaly and scarce rainfall in Romania reported by the JRC/MARS bulletin based on ground data. The NDVI profile (e) of Romania shows a pattern similar to that of Poland, with national NDVI significantly above the five-year maximum from late December to early January. This might be attributed to the delay of the crop hardening process caused by the exceptional warm winter season over Europe. The NDVI clusters show the outer area (green and blue area in figure b) along the country's border possesses well above average NDVI values (c) throughout this period, which significantly corresponds to the dark green area with maximum VCI values above 0.9 in (a). The biomass in the study period is estimated to drop by 15 percent compared with the recent five years on the national scale. Figure (d) shows that growing conditions are usually better in the center than in peripheral areas of the country.



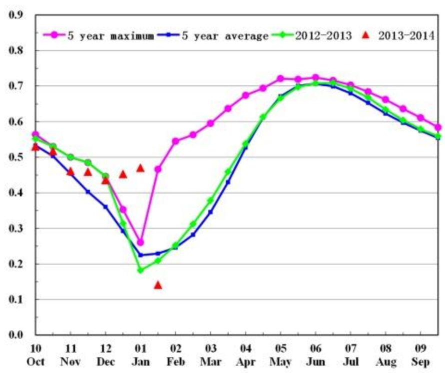
(b)



(c)



(d)



(e)

For a description of (a) through (e), see introduction to section 3.2.

[RUS] Russia

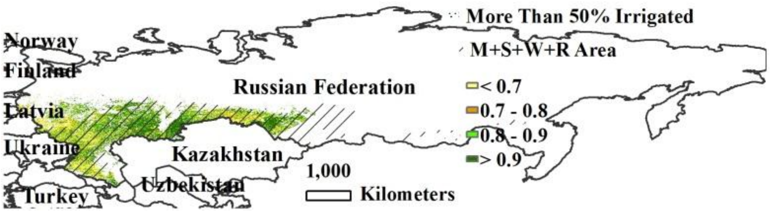
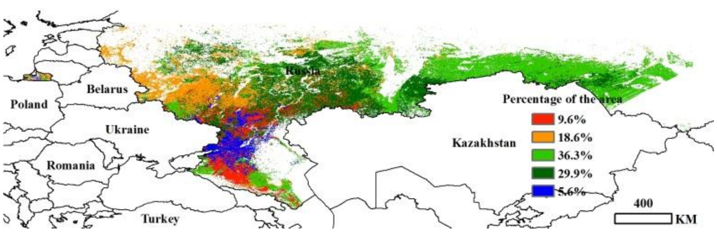
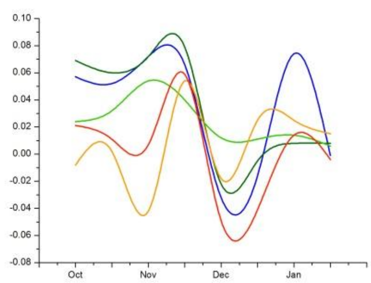


Figure 3.25. Russia crop condition, Oct. 2013-Jan. 2014 (a)

This analysis covers the late stages of maize and sunflower seed (October harvest) and the early vegetative stages of winter wheat and winter barley. The CropWatch environmental indices show slightly decreased rainfall (-2 percent) and slightly increased PAR accumulation (+4 percent) compared with the recent five-year average at the national level. Although the temperature is below zero with -3.5℃, it is still 2℃ above the five-year average, which is consistent with the warmer-than usual weather condition reported by NOAA NCDC climate anomalies and JRC/MARS bulletin. The national biomass is estimated increasing by 4 percent compared with recent five-year average. According to the NDVI profiles, NDVI dropped sharply from November and remained below the average until late December. This might contribute to the above-average precipitation during this period, which contaminated the NDVI value to a certain degree. According to the NDVI clusters, most of the crop growing areas in the southwest of Russia experienced below average NDVI values from late November to late December, especially for the south of Southern Region (including Stavropolskiy kray, Karatchayevo-cherkesiya rep., and Kabardino-balkariya rep.) and the southwest of Volga region (Volgogradskaya oblast and Saratovskaya blast). This might due to the cold spell during this period and the harvest of crops. Before mid-November, most of the Volga region, south of Urals Region, and Chelyabinskaya oblast (which is dominated by winter wheat) enjoyed above average NDVI condition, while the Central Region presented an NDVI valley in November. These findings are also confirmed by the maximum VCI map (a, high values are dark green; lower values are yellow). In January, the north of the Southern Region—5.6 percent of the country's area and including Rostovskaya oblast, Krasnodarskiy kray, Stavropolskiy kray, Kalmykiya Rep., and the north of Volgogradskaya oblast—present an NDVI peak.



(b)



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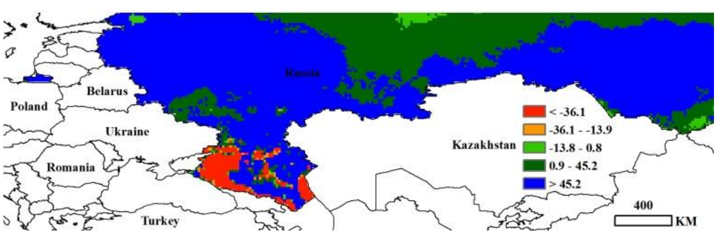

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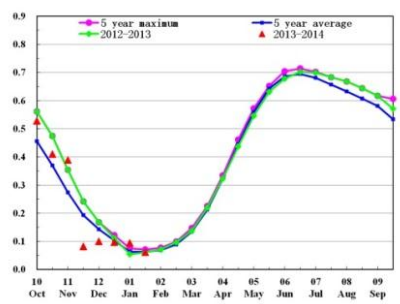


(e)

For a description of (a) through (e), see introduction to section 3.2.

[THA] Thailand

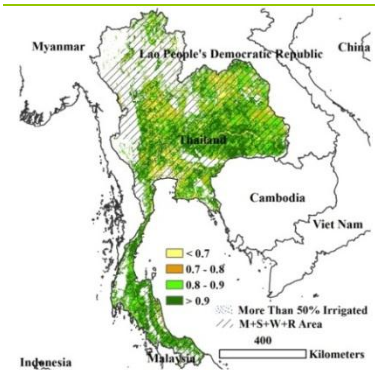
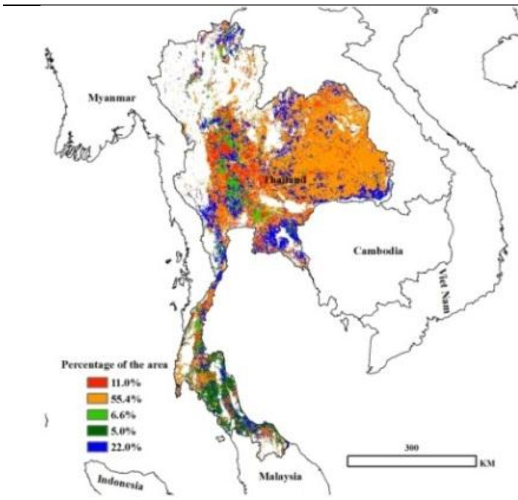


Figure 3.26. Thailand crop condition, Oct. 2013-Jan. 2014

October to January are the harvesting months of the main rice crop in the country, while planting of the second rice crop starts in early January. Thailand's cultivated rice region can be divided into two areas: the rainfed rice system in the northeast and the irrigated rice system in the Central Plains, known as the "rice bowl" of Thailand. Vegetation condition indices are very high (>0.9) in the Tung Kula Rong Hai region (a large plateau in the northeastern area). For the period under consideration, the environmental indices show slightly above average rainfall and PAR, but about a 6 percent decrease in biomass accumulation. From November to December, crop condition was above the recent five years average. In mid-January, the condition was below average due to the reduced rainfall over the country, delaying the second rice planting operations. The profiles of NDVI clusters are mostly above average in the rainfed rice system regions, though gradually decreasing until the end of January. The biomass index indicates a mostly favorable situation in the Western region along the Myanmar border and the south of the northeast region close to Cambodia, while unfavorable conditions prevail in the south and northeast regions.



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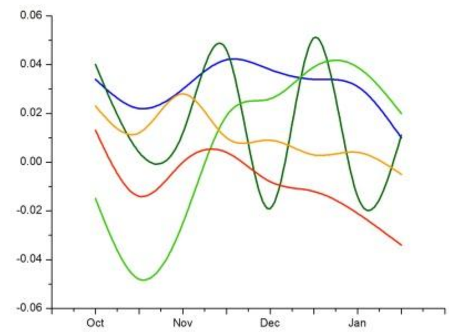

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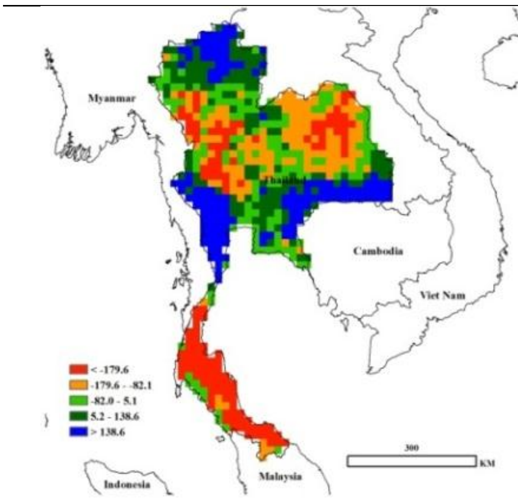

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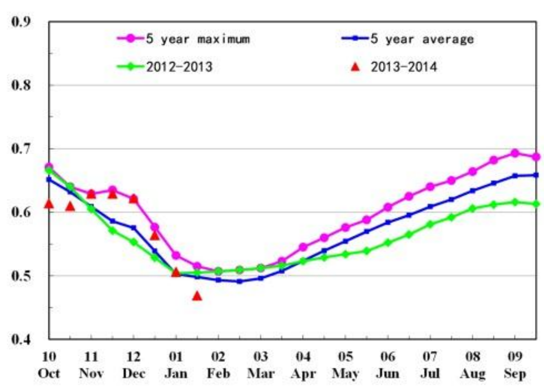


(e)

For a description of (a) through (e), see introduction to section 3.2.

[TUR] Turkey

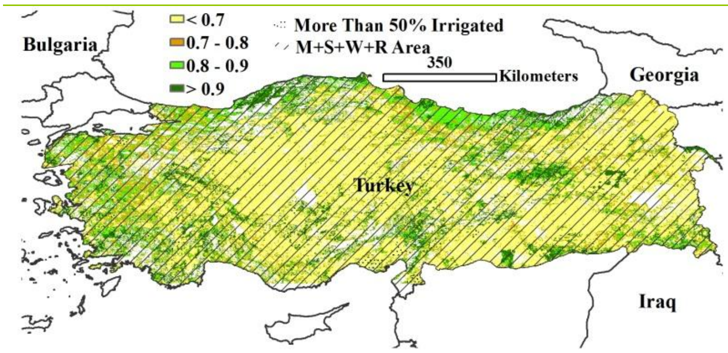
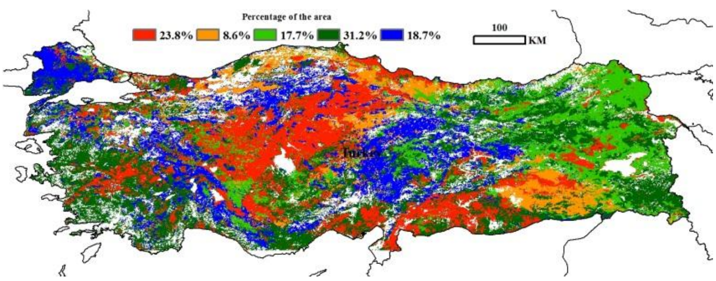


Figure 3.27. Turkey crop condition, Oct. 2013-Jan. 2014 (a)

Accumulated rainfall and temperature for October 2013 to January 2014 were below the five-year and twelve-year average; among all countries monitored, Turkey had the largest negative departure for temperature. Accumulated PAR was above average. Biomass was far below in comparison with both reference periods. During the monitoring period, the planting of winter grains was completed. The environmental indices indicate poor growing conditions for winter crops in the current season and crops may be affected; this is confirmed by the maximum VCI decrease by 0.03. Crop condition close to or above the five-year average for October to January was found in the northeast of the Aegean Region, the east of Central Anatolia, and the Thrace region. Other regions suffered unfavorable conditions mostly from October to December, with an apparent recovery in January. The final outcome of the season will be largely determined by soil moisture from March, when vegetative grows will resume.



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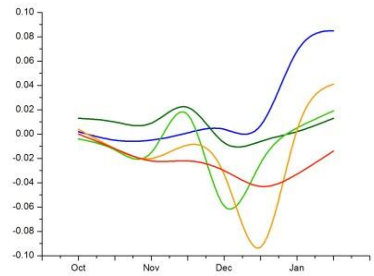

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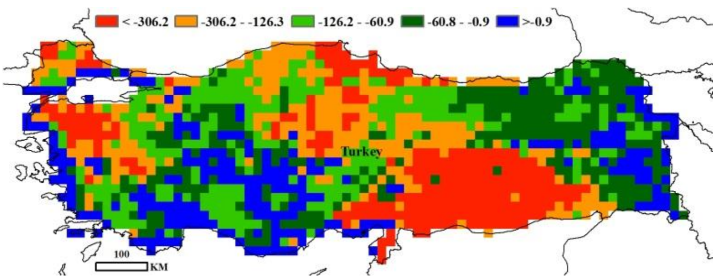

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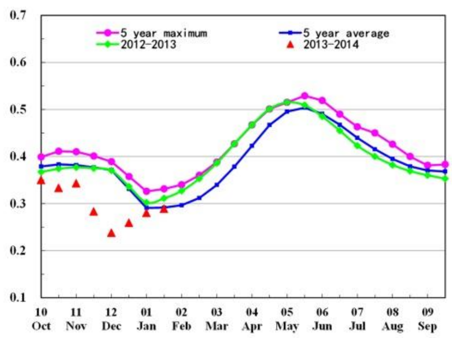


(e)

For a description of (a) through (e), see introduction to section 3.2.

[UKR] Ukraine

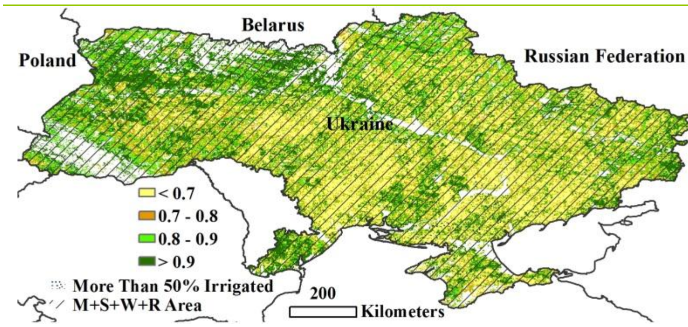
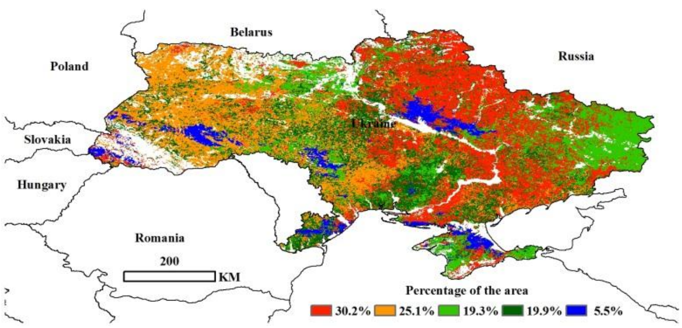


Figure 3.28. Ukraine crop condition, Oct. 2013-Jan. 2014 (a)

This analysis covers the late stages of maize (October harvest) and the early vegetative stages of winter wheat. The CropWatch environmental indices show below average rainfall (-25 percent compared with the recent five-year average), slightly warmer than average weather, close to normal PAR, but a drop of biomass production at the national scale larger than 10 percent compared with both the recent five-year average and the last decade. Maximum VCI tends to be high in some areas in the west and south west, an indication of overall good conditions by local standards (centered around the south of the Rivne and Odessa oblasts). Until December, average national NDVI profiles where significantly above average (probably reflecting high temperatures); the profiles however dropped sharply in January. This observation is confirmed by NDVI curves dropping to below average values in January as well, with few exceptions (covering about 5 percent of agricultural areas and located around the Poltava and Cherkasy oblasts, and around the Khmelnik oblast). The biomass index indicates overall average conditions in the north along the Russian and the Belarus borders. Conditions are mixed in the rest of the country and unfavorable in an area roughly centered around the Mykolayiv oblast.



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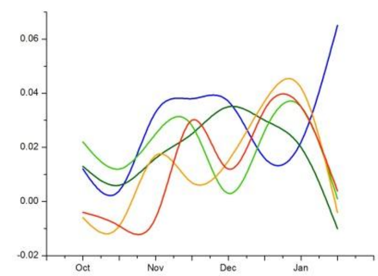

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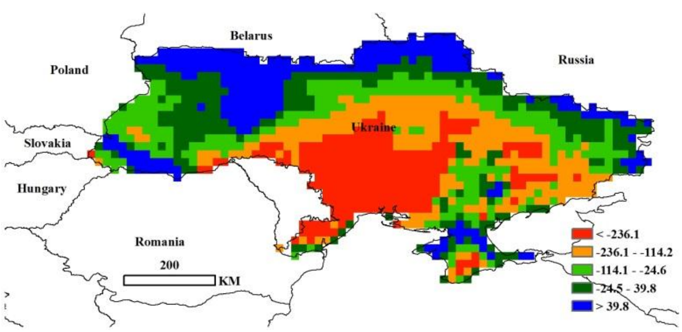

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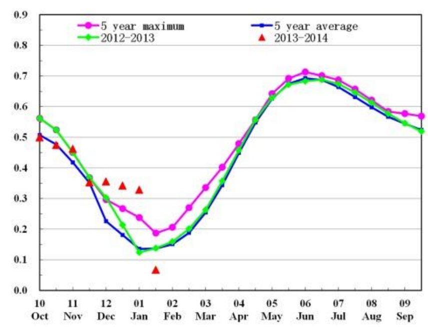


(e)

For a description of (a) through (e), see introduction to section 3.2.

[USA] United States

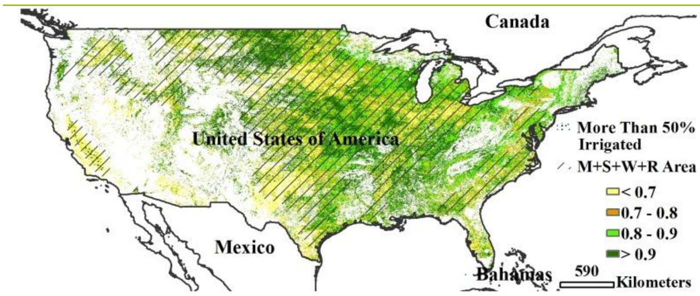
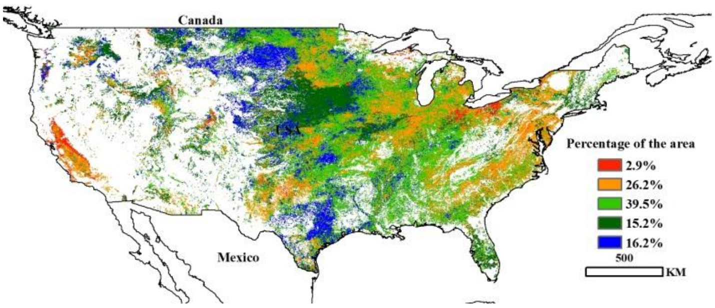


Figure 3.29. United States crop condition, Oct. 2013-Jan. 2014 (a)

The maize harvest was completed early on in the monitoring period and winter wheat has been sowed and has since emerged. Compared to the twelve-year average for the same period, rainfall is below average, especially in the west, including California, resulting in below average NDVI and biomass. The east and south of the United States suffered an abnormal winter storm and low temperatures in December; winter wheat growth was limited. The abnormal rainfall (in the west) and temperatures (in the east) resulted in low maximum VCI and below normal crop condition. In the central regions, such as Nebraska, Iowa, Kansas, and Missouri, rainfall and temperature were near normal, resulting in an above-normal maximum VCI and biomass, showing good crop condition in those regions. Compared to the five-year average, nearly 30 percent of crop areas enjoyed good growing condition, with those areas mainly distributed over North Dakota, South Dakota, Iowa, Nebraska, Kansas, and Arkansas. Another 30 percent of crop areas in the country show worse growing condition, especially in the east and south coastal zone due to the above mentioned storm. Thanks to normal rainfall and temperature in north and center regions (North Dakota, South Dakota, and Iowa) CropWatch biomass estimates are much above the twelve-year average.



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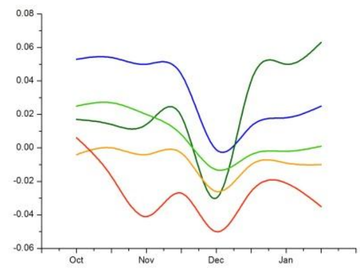

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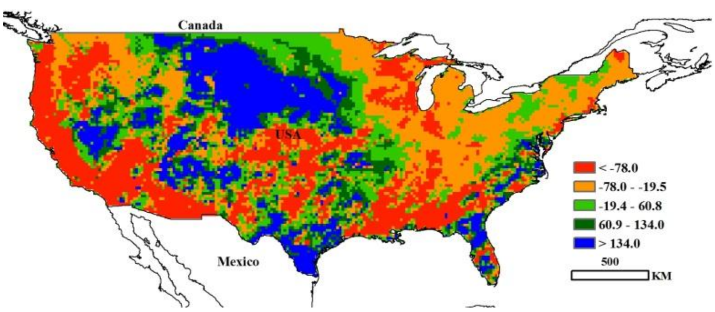

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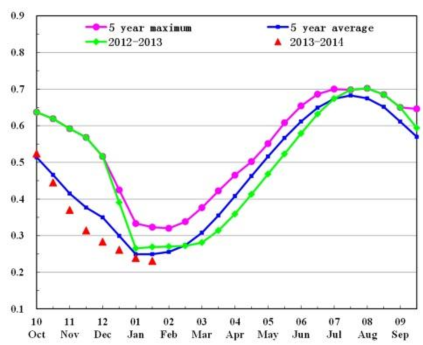


(e)

For a description of (a) through (e), see introduction to section 3.2.

[UZB] Uzbekistan

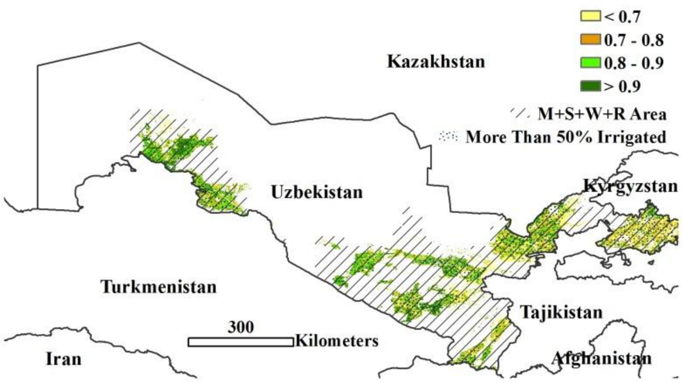
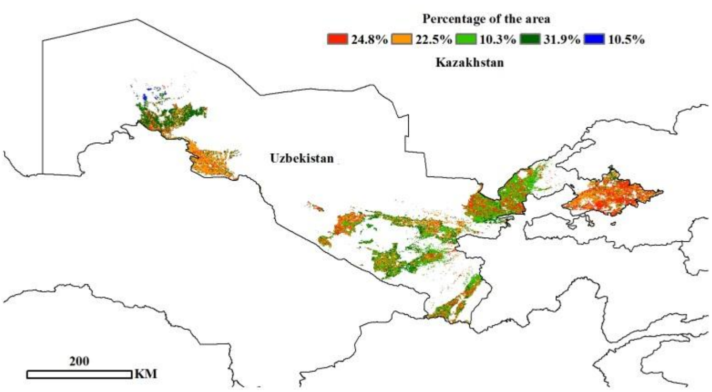


Figure 3.30. Uzbekistan crop condition, Oct. 2013-Jan. 2014 (a)

This analysis covers the sowing and growing stage of winter cereals in Uzbekistan from October 2013 to late January 2014. Currently in the field are mostly winter wheat and barley. The country as a whole enjoyed a large increase of rainfall (95 percent) and biomass (66 percent) while temperature and PAR are just above the recent five-year average (2008-2003) for the same period. A detailed look at the indicators shows a less rosy picture in some parts, especially in the very east (Ferghana, Andijan, and Namangan) where maximum VCI (figure a) is mostly below 0.7. From December to early January, the national NDVI profiles (figure e) indicate that crop condition is well below the recent five-year average. More precise spatial information is provided by the NDVI clusters, which show a drop in early January and a recovery thereafter in the mentioned areas of Ferghana, Andijan, and Namangan (due to heavy rainfall and snow), while other eastern areas underwent a sharp decrease at the end of January (Sirdarya, Jizzakh, Samarkand, Kashkadarya, and Bukhara; figures b and c). However, the rain and snow will help replenish water reserves and improve soil moisture conditions for the upcoming spring and summer crops. Altogether, prospects for the ongoing and future spring seasons are rather positive.



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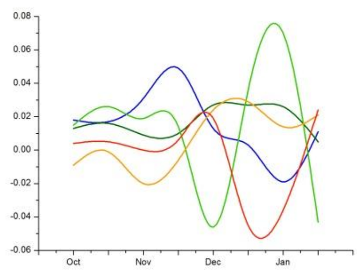

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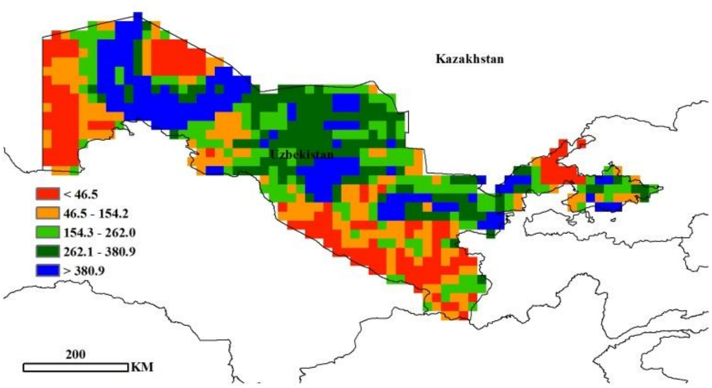

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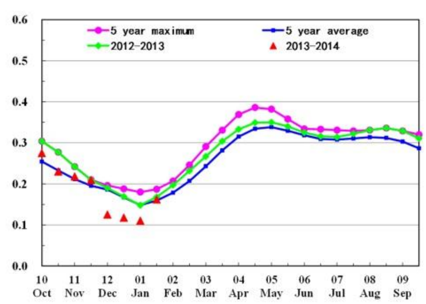
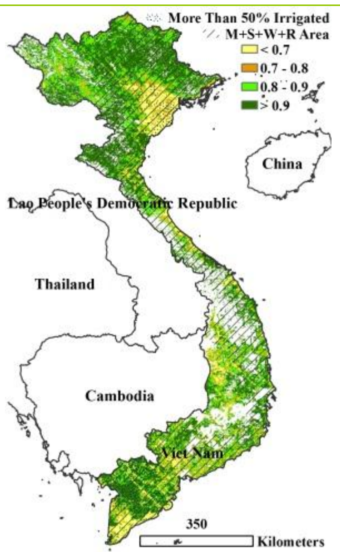
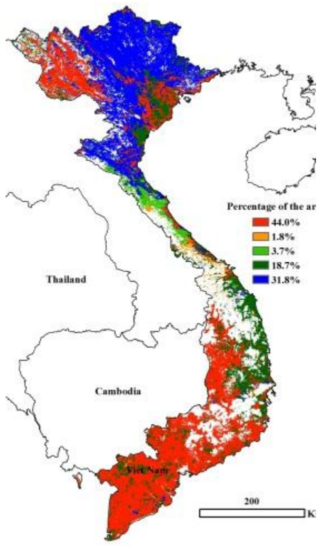


(e)

For a description of (a) through (e), see introduction to section 3.2.

[VNM] Vietnam





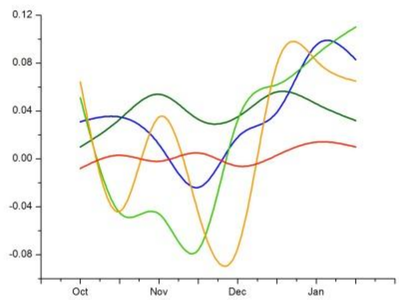
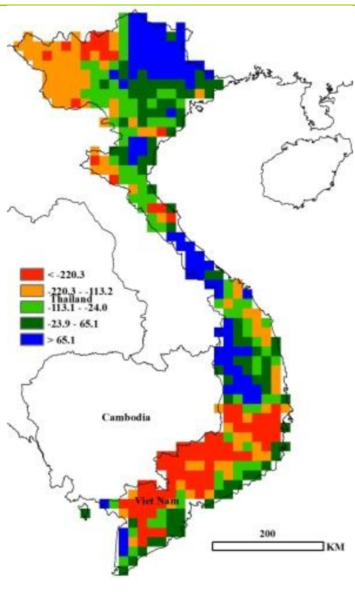
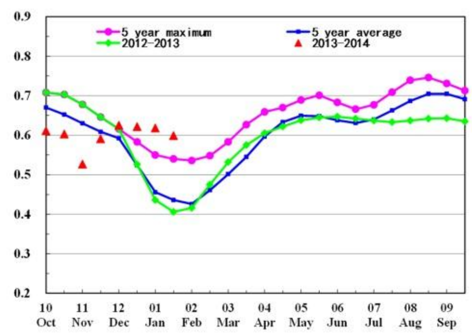


Figure 3.31. Vietnam crop condition, Oct. 2013-Jan. 2014 (a) (b) (c)

Late November and December is the harvesting time of the "10th month rice," while planting of the winter/spring rice crop began in mid-November and continues until early April. The rice cultivation region can be divided into two areas: the Red River delta in the North and the Mekong River delta in the south; in the Red River delta, map (e) indicates a low VCI because of the planting period. National environmental indices show below average rainfall (-7 percent), a temperature decrease of about 1 degree compared with the last five years, and a biomass accumulation of about 10 percent below the average of the last five years. Crop condition from October to November was below the five-year average because of the heavy rains and typhoon Nari (see also section 5.1), affecting Danang, Ha Tinh, Nghe An, and Quang Binh provinces. However, the storms had a minimal effect on rice production because these provinces are not the main rice cultivation areas. The profiles of NDVI clusters are about average in both main rice cultivation areas, gradually increasing between December and January.





(d) (e)

For a description of (a) through (e), see introduction to section 3.2.

[ZAF] South Africa

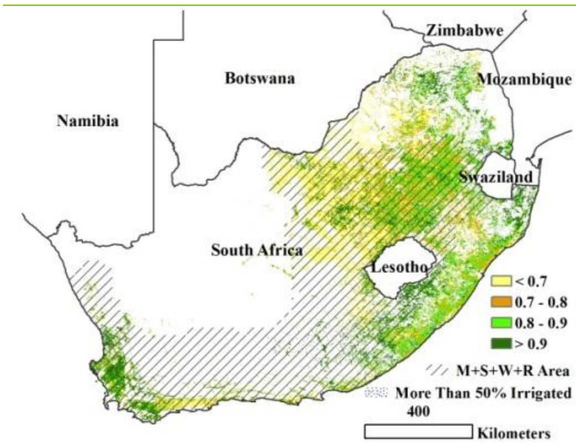
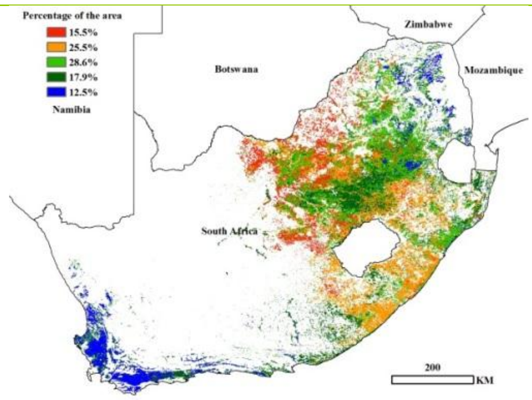


Figure 3.32. South Africa crop condition, Oct. 2013-Jan. 2014 (a)

South Africa is currently in the main maize season (summer), which extends approximately from October to May. The major maize growing areas are centered around Gauteng and include the Free State, Northwest, and Mpumalanga; the vegetation condition index is highest in the eastern Free State, extending to the Swazi border. For the period under consideration, the environmental indices consistently describe a situation of mild drought with rainfall decreasing 6 percent compared with the last five years, accompanied by slightly above average temperature, increased PAR, and about 2 percent decrease in biomass accumulation. With some exceptions in the very northeast (mostly in the northern province) where NDVI remained consistently higher than average, NDVI mostly deteriorated during January, particularly so in the westernmost areas. Altogether, indicators point at lower than average conditions of the current maize areas, particularly in December and January. The slow start of the season is one of the reasons why, according to several sources, South Africa is witnessing a relative shift from maize to soybean, to be harvested in June. Biomass accumulation indicates average to below average conditions in the center and favorable conditions in the Northern province and in the two Cape provinces (western Cape and Eastern Cape) where harvest took place in November. With harvest still three to four months away, February rainfall (important for maize flowering) is the most important variable to watch in South Africa, as it largely determines the outcome of the maize season.



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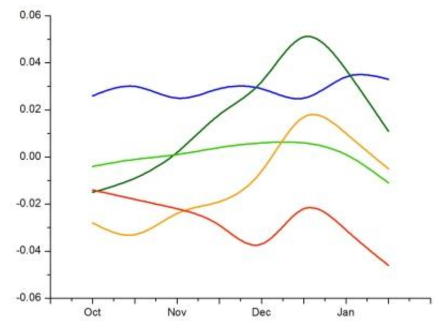

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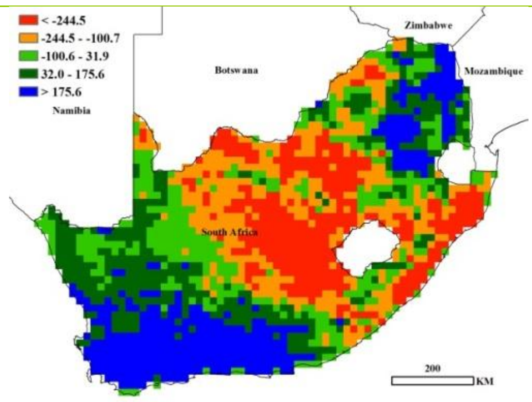

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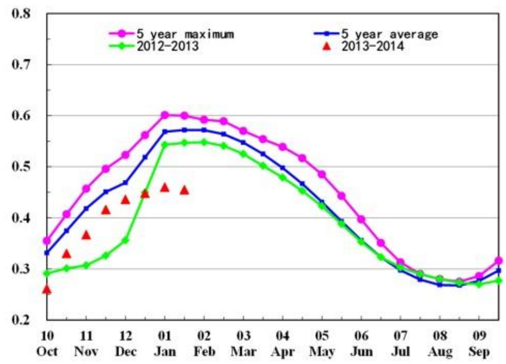

(e)

For a description of (a) through (e), see introduction to section 3.2.