Chapter 3. Main producing and exporting countries

Building on the global patterns presented in previous chapters, this chapter assesses the situation of crops in 30 key countries that represent the global major producers and exporters or otherwise are of global or CropWatch relevance. In addition, the overview section (3.1) pays attention to all countries worldwide, to provide some spatial and thematic detail to the overall features described in section 1.1. In section 3.2, the CropWatch monitored countries are presented, and for each country maps are included illustrating NDVI-based crop condition development graphs, maximum VCI, and spatial NDVI patterns with associated NDVI profiles. Additional detail on the agroclimatic and BIOMSS indicators, in particular for some of the larger countries, is included in Annex A, tables A.2-A.11. Annex B includes 2017 production estimates for Argentina, Brazil and the United States.

3.1 Overview

The current reporting period recorded relatively few extreme conditions among the 30 countries specifically monitored by CropWatch and described in this chapter. Some, however, are part of the large anomaly patterns described in Chapter 1, and they are often surrounded by less important countries in terms of agricultural production where conditions may be more extreme.

Table 3.1 presents the agroclimatic and agronomic indicators for January-April 2017, showing their departure from the five and fifteen-year averages as applicable; the underlying CWAI indicators are presented in figures 3.1-3.4.

Rainfall

Positive rainfall departures

Rainfall departures larger than 50% above average were recorded in three Asian countries: 367 mm (RAIN, +76%) in Bangladesh, 880 mm (+69%) in the Philippines, and 302 mm (+61%) in Thailand. Some detail about Bangladesh is provided in section 5.2 about disasters. Among the listed countries, BIOMSS increased in both Bangladesh and the Philippines (+48% and +33%, respectively), while in Thailand BIOMSS was +9%, due to somewhat below average temperature (-0.7°C). A similar situation is observed in Argentina (rainfall 696 mm, +40%), with a smaller relative biomass increase due to below average temperature and the use of the two different reference periods (15 years for the agroclimatic indicators and only five for BIOMSS). In Bhutan, rainfall reached 411 mm in agricultural areas (+75%).

In other areas, Peru, Ecuador, and Colombia are also mentioned in the section on disasters due to exceptional precipitation recorded in their common border area in the north of Peru, northeast Ecuador, and southwest Colombia. Rainfall departures for the three countries are high even at the national level (+29%, +41%, and +29%, respectively), which results from the common and large scale cause for the phenomenon: a “coastal El Niño”. Other significant rainfall excesses in the same region, though probably unrelated as far as causes are concerned (except maybe for Bolivia), include Bolivia (+32%), Venezuela (+29%), and the two countries on the island of Hispaniola: Haiti (+67%) and the Dominican Republic (+72%). The countries are part of a larger ensemble that encompasses about half the South American continent.

Figure 3.1. Global map of January-April 2017 rainfall (RAIN) by country and sub-national areas, departure from 15YA (percentage)

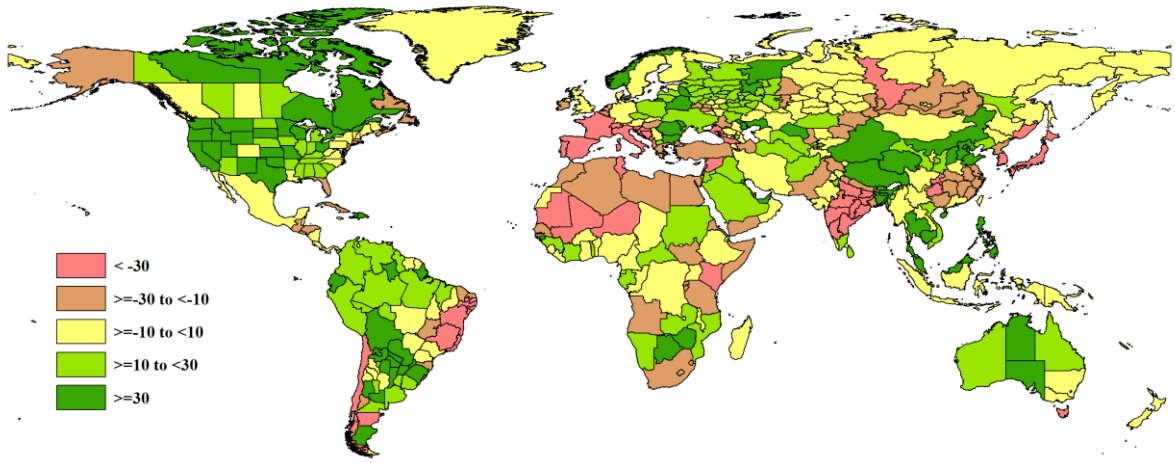
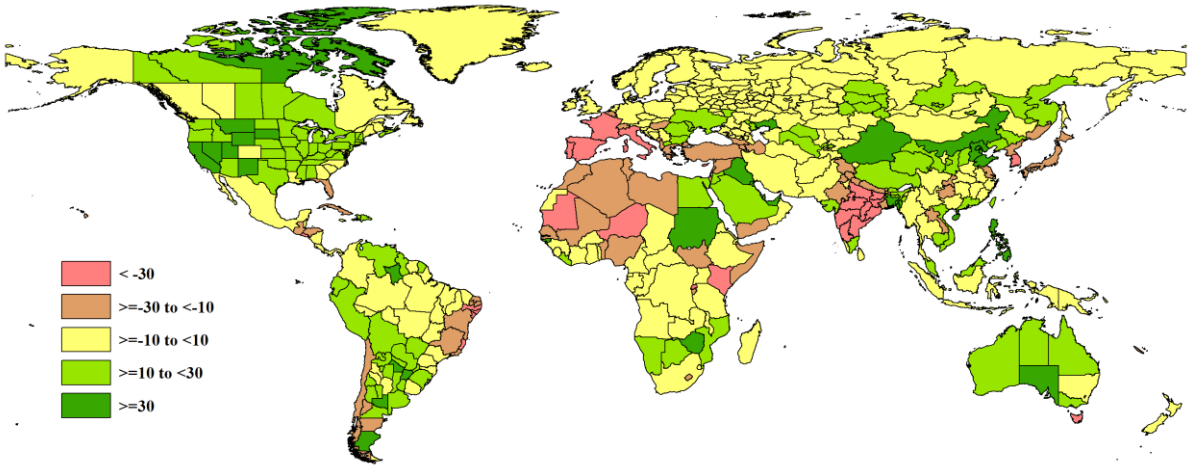


Figure 3.2. Global map of January-April 2017 biomass (BIOMSS) by country and sub-national areas, departure from 15YA (percentage)



In other parts of the world, large positive rainfall departures also are reported for southern Africa (where some of them also resulted in local floods), such as in Mozambique (RAIN, +18%; see disasters section), Botswana (+39%), and Zimbabwe (+52%). For those and several neighboring countries, the abundant precipitation was much needed relief after last year's drought. Interestingly, the southern African countries are also those with the largest negative temperature anomalies, such as for example -2.2°C in Botswana, -1.9°C in Swaziland, and -1.5°C in Namibia and Zimbabwe. In contrast, South Africa, where the rainfall deficit was moderate, recorded a temperature drop of "only" -0.7°C. The same general area was also characterized by low sunshine in Botswana and Zimbabwe (RADPAR, -7%).

Still significant, but less spectacular positive rainfall departures occurred in North America, central and eastern Europe and western Russia, western West Africa, in an area of the southeastern Caspian up to northern China, and in Australia. And finally, positive departures need to be mentioned for the countries around the South China Sea (some already mentioned above), which, in addition to high rainfall and low temperature, also recorded low sunshine values, such as a RADPAR of -8% in Vietnam and -5% in the Philippines. It is likely that the large increases in cropped arable land fraction in Thailand (CALF, +12%) and Cambodia (+22%, the largest cropped arable land fraction increase among all CropWatch countries) derive directly from the favorable water supply.

Rainfall deficits

Negative rainfall departures—though usually not severe enough to qualify as "drought" because of seasonally low temperatures that reduce water consumption in winter crops—occurred in the Mediterranean and the eastern Black Sea countries, with some neighboring countries also in need of mentioning, starting in the east with Georgia (RAIN, -60%), Cyprus (-54%), Lebanon (-46%), and Syria (-35%). In Europe, the area encompasses Montenegro (RAIN, -58%), Bosnia-Herzegovina (-37%), Slovenia (-33%), and Croatia (-32%), as well as Albania (-54%). In the European Union, the most important agricultural countries in this group are France (-36%), together with Italy (-51%) and, on the Atlantic Ocean, Spain (-38%) and Portugal (-58%). France suffered a marked drop in biomass production potential (BIOMSS, -31%) due to the mentioned shortage of rainfall while temperature (-0.8°C) and RADPAR were closer to average. In the southern Mediterranean, Tunisia is the most affected country with a rainfall deficit of 37%. Meanwhile, Turkey, with a 22% rainfall deficit, also suffered a very significant drop in its cropped arable land fraction (CALF, -28%), which is further discussed in the country narrative. This is not unlike Iran (CALF down 19%), where other indicators, however, took relatively average values.

In Asia, the Republic of Korea deserves mentioning with -55% precipitation compared with average, together with Japan (-33%) and most of eastern and southwestern China (such as Chongqing -37% and Guizhou -30%).

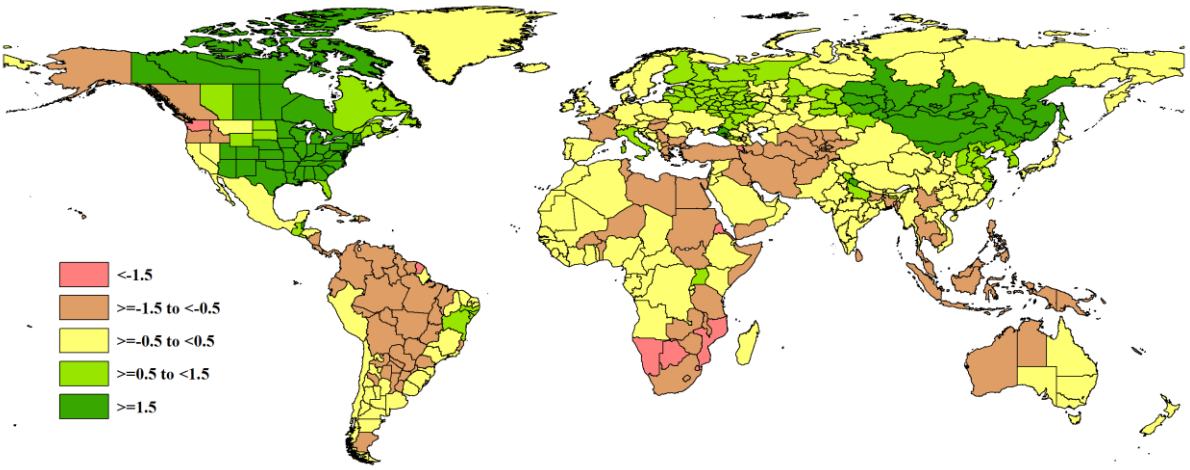
For the Horn of Africa, the section on disasters (5.2) also mentions droughts in parts of this region, although national precipitation values are generally fair, such as in Ethiopia (-9%), resulting from a mix of areas with favorable and unfavorable rain. In Rwanda, however, which borders the Horn, rainfall dropped 46%, while Kenya recorded -42% and Somalia -26%.

Finally, in terms of precipitation deficits compared to average, Chile (-41%) is mentioned, as well as two large countries where national averages hide contrasting sub-national conditions: India (-16% nationwide but -65% in Orissa and -81% in Chhattisgarh) and Brazil (+6% nationwide but -32% in Minas Gerais). The case of India is particularly worrying as the drought follows widespread excess water in previous seasons.

Temperature and radiation

For temperature, above average values are noted for China (+0.5°C) and Russia (+1.2°C) on the Eurasian continent, as well as in North America with significant increases in the United States (+1.8°C) and Canada (+1.4°C). In both China and the United States, the positive temperature departure was accompanied by below average RADPAR (-6% in both countries), which may result from increased cloudiness.

Figure 3.3. Global map of January-April 2017 temperature (TEMP) by country and sub-national areas, departure from 15YA (degrees)



Low temperature departures (close to -1°C) occurred in several areas, notably an area stretching from Hungary to Afghanistan, thus approximately centered around Armenia (departure: -2.1°C); northern to central South America, and Southeast Asia.

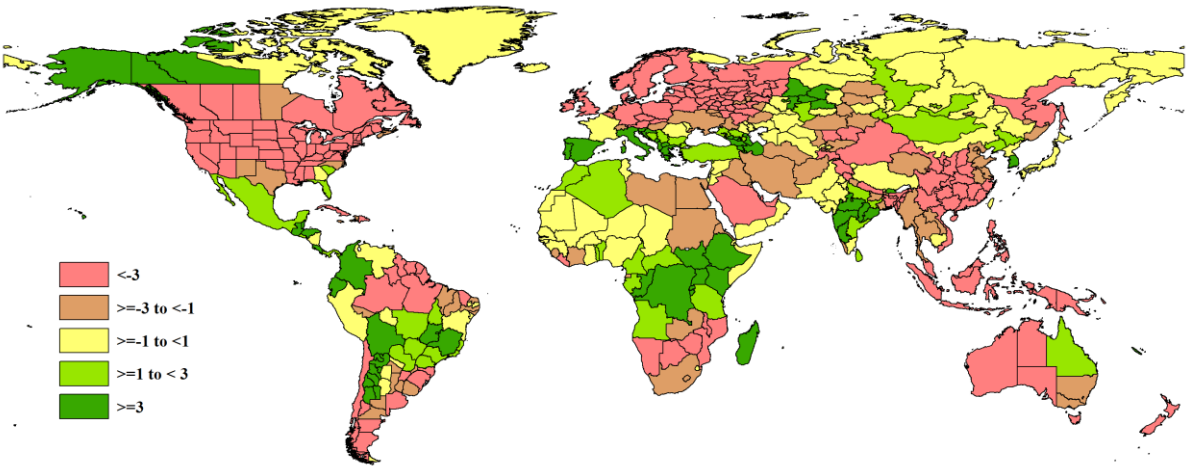
Finally, the largest sunshine deficits affected Baltic countries, extending into central Europe and including Belarus (RADPAR, -15%, which is a very significant value for a national average), Lithuania and Latvia (both -13%) and Estonia (-10%). Generally smaller deficits occur south of this area in Poland (-13%) and Czech Republic (-9%), and west of it in Denmark and the United Kingdom (both at -9%), to increase again in Ireland (-14%).

Table 3.1. CropWatch agroclimatic and agronomic indicators for January-April 2017, departure from 5YA and 15YA

Country	Agroclimatic Indicators			Agronomic Indicators		
	Departure from 15YA (2002-2016)			Departure from 5YA (2012-2016)		Current
	RAIN (%)	TEMP (°C)	RADPAR (%)	BIOMSS (%)	CALF (%)	Maximum VCI
Argentina	40	-0.6	-1	19	1	0.85
Australia	14	0	-2	7	3	0.64
Bangladesh	76	-1.1	-5	48	1	0.87
Brazil	6	-0.4	1	-2	-1	0.77
Cambodia	30	-1	0	26	22	0.84
Canada	17	1.4	-6	11	-	0.76
China	-13	0.5	-6	5	-2	0.62
Egypt	-18	-0.9	-1	27	1	0.75
Ethiopia	-9	-0.4	4	-5	-	0.59
France	-36	-0.8	0	-31	0	0.87
Germany	-4	-0.2	-5	2	0	0.85
India	-16	0.2	1	-28	4	0.80
Indonesia	7	-0.7	-4	2	0	0.73
Iran	-9	-0.6	-2	-7	-19	0.50
Kazakhstan	-2	0.4	-1	2	-	0.57
Mexico	-9	0.4	3	-3	3	0.72
Myanmar	5	-0.2	-3	5	13	0.92
Nigeria	-1	-0.4	0	-10	-24	0.69
Pakistan	-15	-0.1	-1	-8	6	0.68
Philippines	69	-0.9	-5	33	0	0.69
Poland	23	-0.2	-13	6	0	0.82
Romania	33	-0.4	1	12	-1	0.77
Russia	6	1.2	-3	5	-	0.58
S. Africa	-11	-0.7	-2	-7	8	0.74
Thailand	61	-0.7	-1	9	12	0.77
Turkey	-22	-0.5	3	-11	-28	0.57
Ukraine	20	0.3	-3	10	-17	0.68
United Kingdom	-1	-0.2	-9	-1	1	0.82
United States	25	1.8	-6	17	7	0.85
Uzbekistan	21	-1.2	0	11	-	0.70
Vietnam	14	-0.1	-8	17	2	0.83

Note: No sign means a positive (+) departure.

Figure 3.4. Global map of January-April 2017 PAR (RADPAR) by country and sub-national areas, departure from 15YA (percentage)



3.2 Country analysis

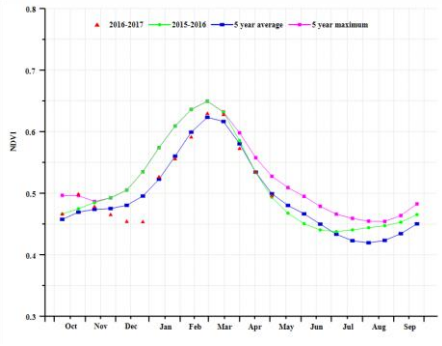
This section presents CropWatch results for each of thirty key countries (China is addressed in Chapter 4). The maps refer to crop growing areas only and include (a) Crop condition development graph based on NDVI average over crop areas, comparing the January-April 2017 period to the previous season and the five-year average (5YA) and maximum; (b) Maximum VCI (over arable land mask) for January-April 2017 by pixel; (c) Spatial NDVI patterns up to April 2017 according to local cropping patterns and compared to the 5YA; and (d) NDVI profiles associated with the spatial pattern under (c). See also Annex A, tables A.1-A.11, and Annex B, tables B.1-B.3, for additional information about indicator values and production estimates by country. Country agricultural profiles are posted on www.cropwatch.com.cn.

Figures 3.5-3.34. Crop condition for individual countries ([ARG] Argentina- [ZAF] South Africa) January-April 2017

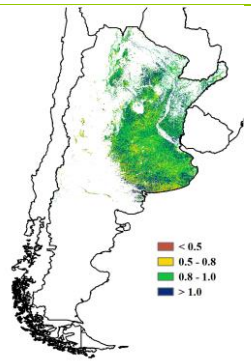
[ARG] Argentina

Argentina experienced generally favorable conditions during the monitoring period. Wheat harvest ended in early January, while harvesting of summer crops (soybean and maize) are still ongoing. TEMP (-0.6°) and RADPAR (-1%) were slightly below average, while RAIN was 40% above, resulting in a 19% above average BIOMSS for the reporting period compared to average. The abundant rainfall in Chaco (+70%), Corrientes (+81%), and La Pampa (+73%) account for respectively +34%, +33%, and +35% BIOMSS increases in those provinces. The cropped arable land fraction (CALF) in Argentina increased 1 percentage point over average, indicating more land is cropped. According to the NDVI based development profile, the NDVI values from January to April were overall lower than those in 2016, with the exception of the second half of April. The spatial NDVI patterns and corresponding profiles demonstrate that 42.5% of arable land had above average conditions during the summer crop season, while the VCIx map shows that VCIx values in most parts of the major maize and soybean producing areas (including Cordoba, Santa Fe, and northwestern Buenos Aires) were above 0.8. Moreover, VCIx values in the middle part of Chaco were overall above 1.0, which shows an unusually good crop growth situation. Altogether, indicators show a promising summer season output for Argentina. CropWatch puts maize production at 29.9 million tons (a 16% increase over 2016) and soybean production at 51.1 million tons, a level similar to that of last year. Production figures by provinces are provided in table B.1 in Annex B.

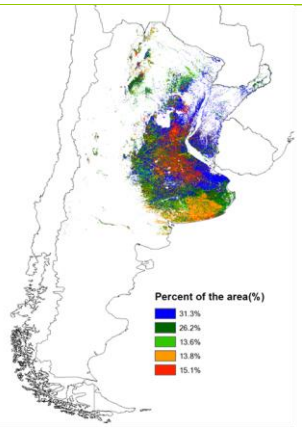
Figure 3.5. Argentina crop condition, January-April 2017



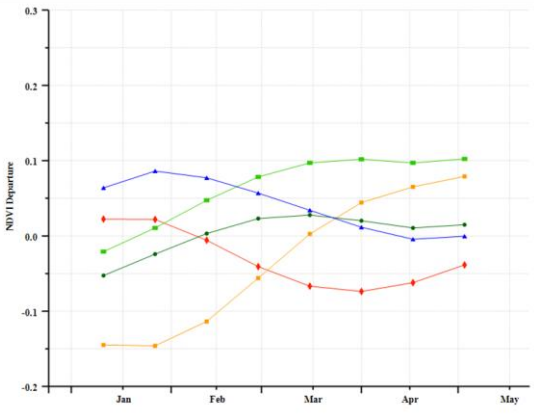
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

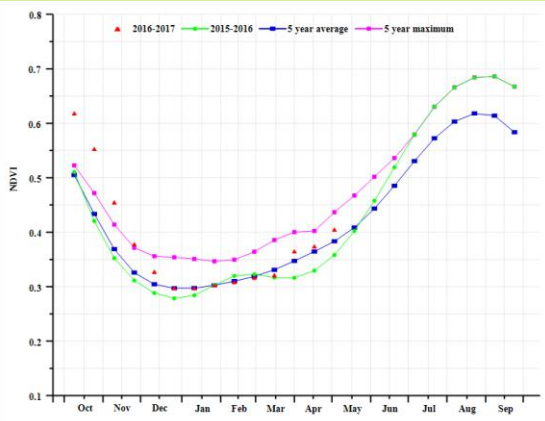


(d) NDVI profiles

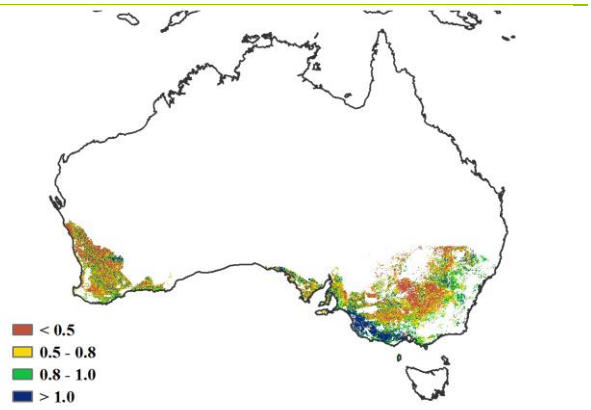
[AUS] Australia

Indicators in Australia show generally average condition for the January to April period, which is out of season for wheat and barley. The maximum VCI is 0.64 throughout the region, with a 3 percentage point increase in CALF compared with the recent five-year average. Compared to the same average, the spatial NDVI patterns and corresponding time profiles show below average conditions in central and northern New South Wales, with agroclimatic and biomass indicator departures for this state as follows: RAIN, -6%; TEMP average; RADPAR, -1%; and BIOMSS, -5%. Nationwide, agroclimatic indicators display average conditions (RAIN +14%, TEMP +0°C, and RADPAR -2%), resulting in a slightly positive biomass accumulation potential (BIOMSS +7%) compared with recent years. Positive departures of rain were recorded in South and Western Australia (+47% and +29%, respectively), contributing to favorable soil moisture conditions for the planting of wheat and barley in the coming month.

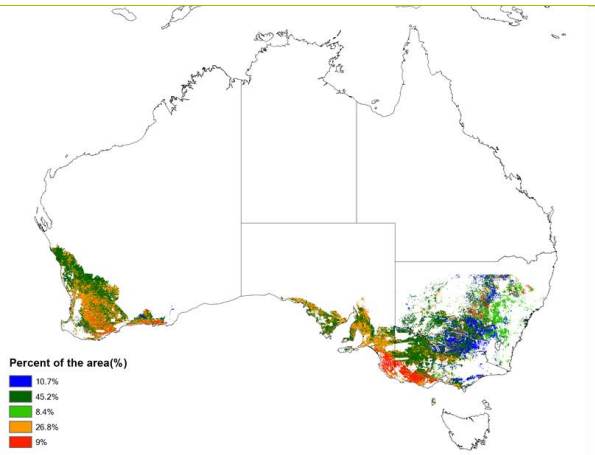
Figure 3.6. Australia crop condition, January-April 2017



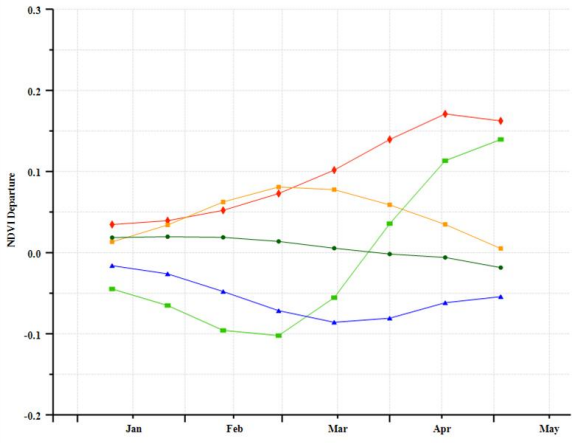
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

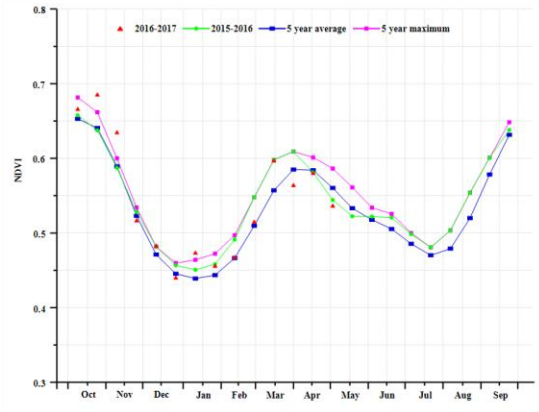


(d) NDVI profiles

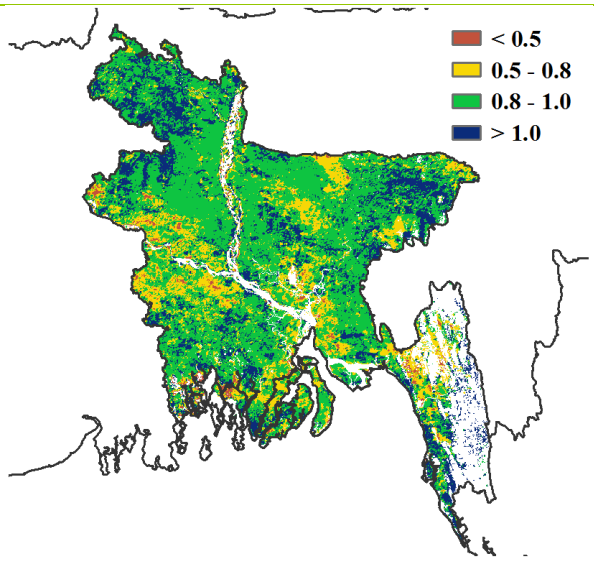
[BGD] Bangladesh

CropWatch indicators show average crop condition for Bangladesh during the reporting period, which is the country's growing and harvesting season of irrigated boro rice. Crop condition was generally above average, even if it went through periods with depressed condition from late March to late April. The national average VCIx was 0.87, while the fraction of arable land (CALF) increased by 1 percentage point compared to the five-year average. Among the CropWatch agroclimatic indicators, RAIN was above average (+76%), while TEMP and RADPAR were below by -1.1°C and -5% respectively. The combination of factors resulted in high BIOMSS (+48%) compared to the five-year average. As shown by the crop condition development graph, average NDVI was below average from late January to April. Spatial NDVI patterns and profiles show that crop condition in 23.1% of the agriculture areas was below average, while for the other 76.9% it was above. Favorable weather conditions benefited boro paddy development this season. Although excess precipitation caused flooding in the northeast of the country in late March and early April (clearly visible in the NDVI profiles map), overall output of boro is expected to be favorable.

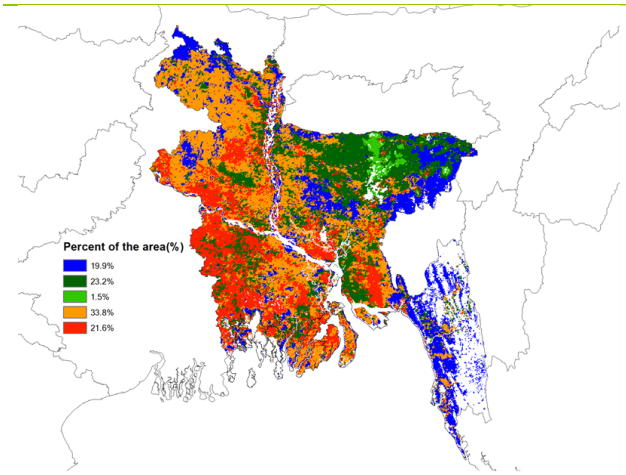
Figure 3.7. Bangladesh crop condition, January-April 2017



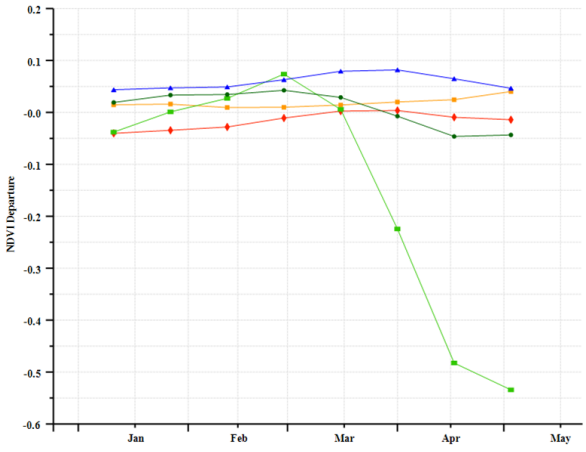
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



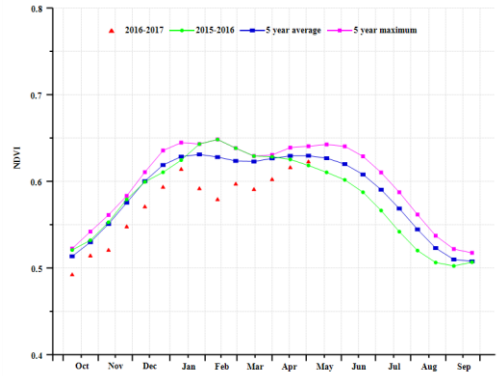
(d) NDVI profiles

[BRA] Brazil

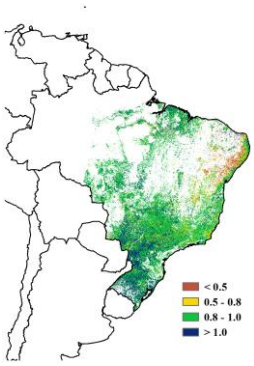
Generally, crop condition in Brazil was slightly above the average of the previous five years during the monitoring period. Winter wheat was out of season. The harvest of maize (main season), rice, and soybean just started in early April and will last several months. Favorable agroclimatic conditions were observed at the national level, with RAIN at 6% above average, TEMP at -0.4°C, and RADPAR -2%, resulting in a 2% below average BIOMSS. Agroclimatic conditions, however, vary a lot among the major agricultural production states. Rio Grande do Sul for example received sufficient rainfall (RAIN, +57%), while Minas Gerais suffered from drought with a 32% rainfall shortage compared with average. Rainfall in Santa Catarina, Ceará, and Goias was recorded at -13%, -15%, and -18% compared to the fifteen-year average for RAIN. Temperature and RADPAR were close to "normal" except in Mato Grosso do Sul where TEMP was 1.3°C below average. Altogether, BIOMSS at the state level was below average in Minas Gerais, Santa Catarina, Ceará, and Goias, while 12% and 19% above average in Mato Grosso do Sul and Rio Grande do Sul, dominated by rainfall departure.

Unevenly distributed climatic conditions lead to differences in agronomic indicators. The maximum VCI map presents overall favorable condition, and VCIx in part of Mato Grosso do Sul and Rio Grande do Sul was above 1.0, indicating a crop condition above the situation over the past five-years. Spatial NDVI patterns and corresponding NDVI departure profiles also confirm that continuously above average NDVI mainly occurred in Mato Grosso do Sul, Rio Grande do Sul, and Pará. Below average NDVI mostly occurred in coastal areas of Bahia, Sergipe, and Alagoas. According to the NDVI-based crop condition development graph, national NDVI was below average due to the cloudy and rainy weather, but recovered to an average level and above that of the previous year by the end of April. Altogether, CropWatch projects the maize, rice, and soybean productions for Brazil above the previous harvest season (see Annex B). Even in Santa Catarina, which experienced a rainfall shortage, an increased planted area will result in crop production at a level similar to 2016.

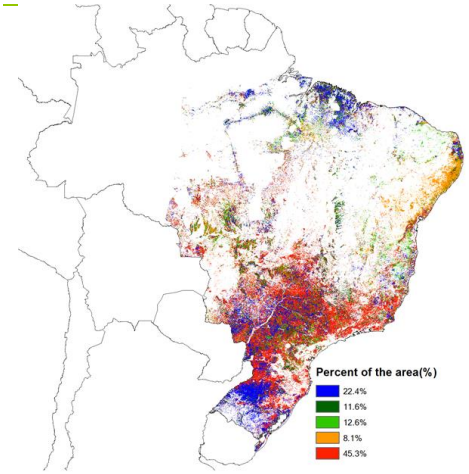
Figure 3.8. Brazil crop condition, January-April 2017



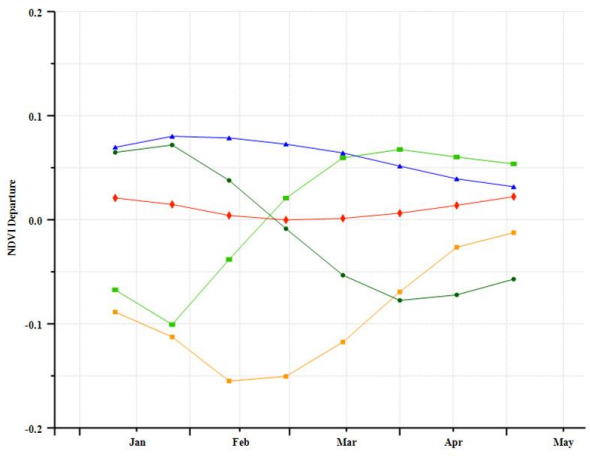
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

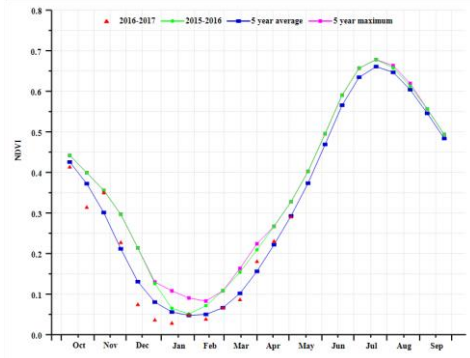


(d) NDVI profiles

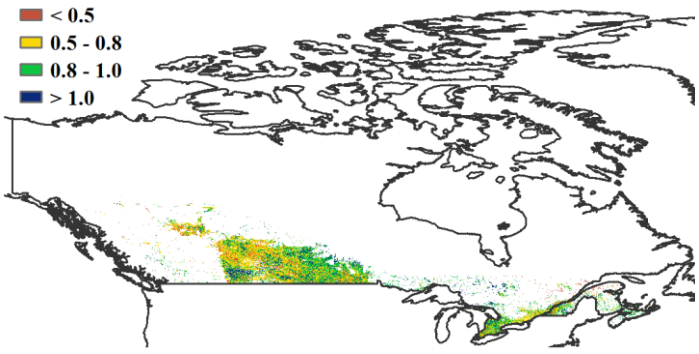
[CAN] Canada

The current monitoring period is the growth and wintering season of winter crops in Canada. Overall, CropWatch agroclimatic and agronomic indicators indicate above average crop condition in the country. While RAIN and TEMP were above average (+17% and +1.4°C, respectively), RADPAR was significantly below (-6%) due to rainy weather. Above average rainfall fell in major crop production provinces, and the accumulated rainfall (RAIN) for Alberta, Manitoba, and Saskatchewan was +13%, +10%, and +3% respectively, according to this CropWatch agroclimatic indicator. Over the reporting period, temperatures (TEMP) in the same three provinces were +1°C, +2°C, and +2°C, respectively. Warm and humid weather is good for the growth of winter crops, and most parts of Alberta, Manitoba, and Saskatchewan showed positive NDVI departures. Altogether, crop condition is assessed as favorable.

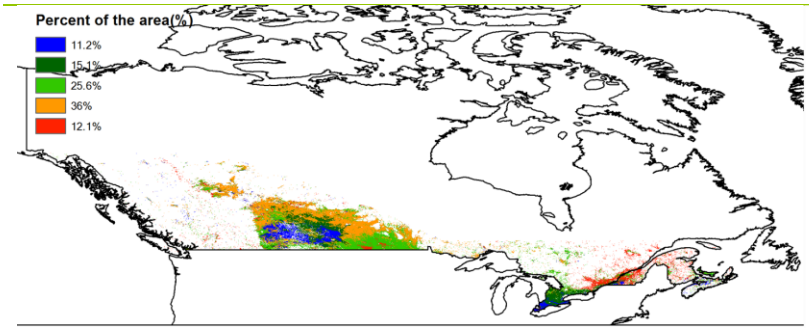
Figure 3.9. Canada crop condition, January-April 2017



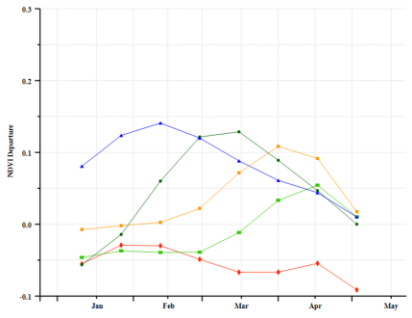
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



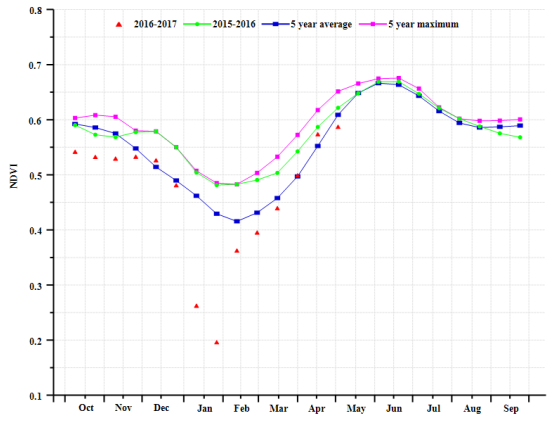
(d) NDVI profiles

[DEU] Germany

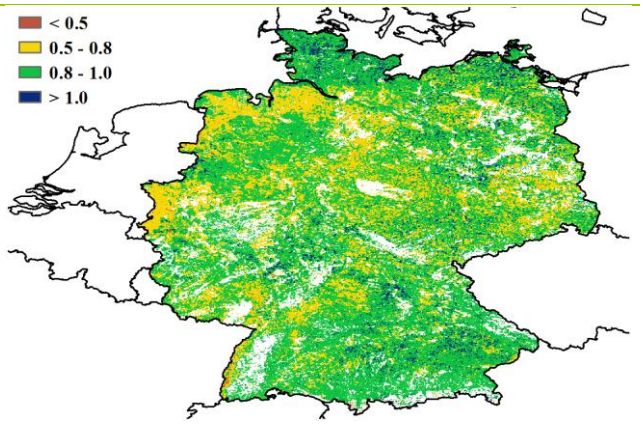
Crop condition in Germany shows spatially contrasted patterns. Winter wheat and winter barley are currently in the vegetative stages, and maize is being planted. The CropWatch agroclimatic indicators show below average rainfall (RAIN, -4%), below average temperature (TEMP, -0.2°C, except in the northern wheat zone where TEMP was +0.2°C), and RADPAR at the national level at 5% below average. Above average rainfall occurred throughout the middle-north of Germany, including in the northern wheat zone (RAIN, +13%), a northwest mixed wheat and sugar beets area (+3%), and an eastern area with sparse crops (+15%, also the largest positive departure). With close to average and generally favorable rainfall conditions in the crop planting areas, BIOMSS is expected to increase by 2% nationwide compared to the five-year average, and even more in some areas such as in the eastern sparse crop area and the northern wheat zone, two areas where the projected BIOMSS departure reaches +12% over average.

As shown by the crop condition development graph, national NDVI values were below average from January to early March due to low temperature, and then above average from early March to early April as a result of favorable rainfall and suitable temperature. After early April, values were again below average due to sparse rainfall and low minimum temperature. This observation is confirmed by the NDVI profiles and the country's spatial NDVI patterns, which are also reflected by the maximum VCI in the different areas, with a VCIx of 0.85 for Germany overall. Generally, the values of the indicators mentioned above point at average condition for most winter crop areas in Germany.

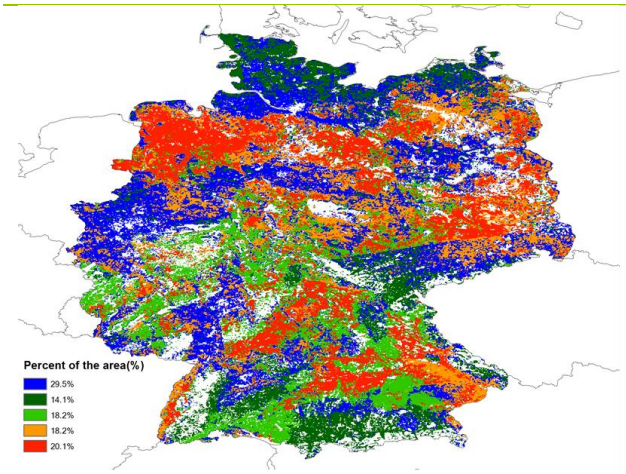
Figure 3.10. Germany crop condition, January-April 2017



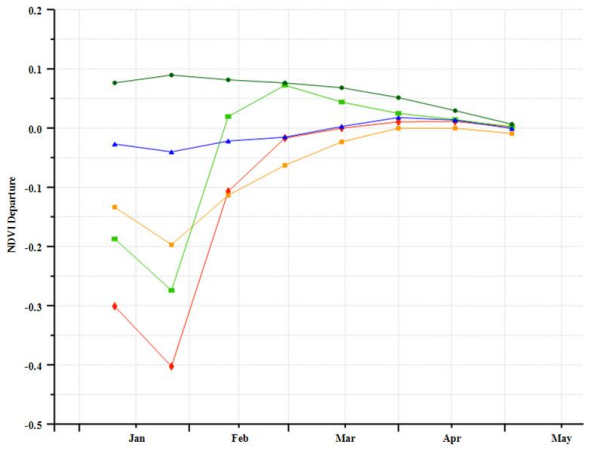
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



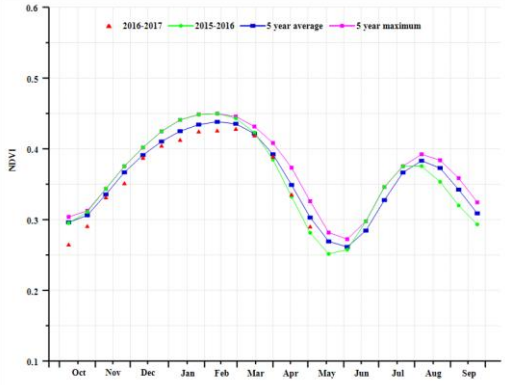
(d) NDVI profiles

[EGY] Egypt

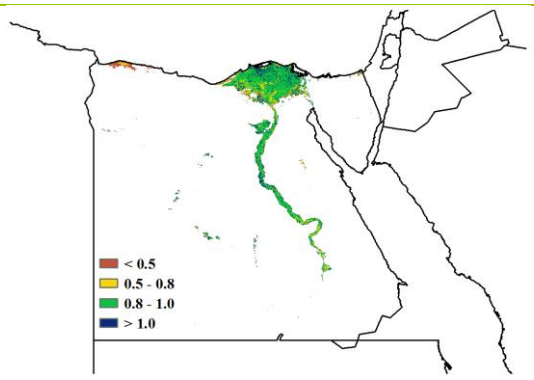
In Egypt, where the most common crops are clover, wheat, sugar beet, and vegetables, the recent monitoring period covers the winter season. The period was characterized by agroclimatic conditions that were below average, with values for RAIN of -18%, TEMP -0.9°C, and RADPAR -1%. Nevertheless, the biomass production potential (BIOMSS) increased over the five-year average by 27%. Because of the country's prevailing desert conditions, more than 95% of cultivated land is irrigated, and rainfall plays a minor part.

The national crop condition development graph based on NDVI shows that crops were below the average condition of the last five years and almost at the same level as those of the same monitoring period for the 2015-2016 season. The spatial NDVI profile shows relatively good crop condition in the Nile valley and delta. The fraction of cropped arable land (CALF) increased by 1 percentage point, compared to average values, and VCIx reached 0.75. In general, for this monitoring period, winter crops in Egypt are assessed as slightly below average.

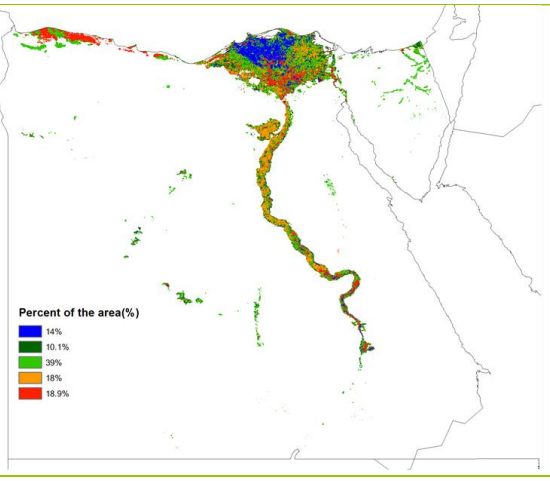
Figure 3.11. Egypt crop condition, January-April 2017



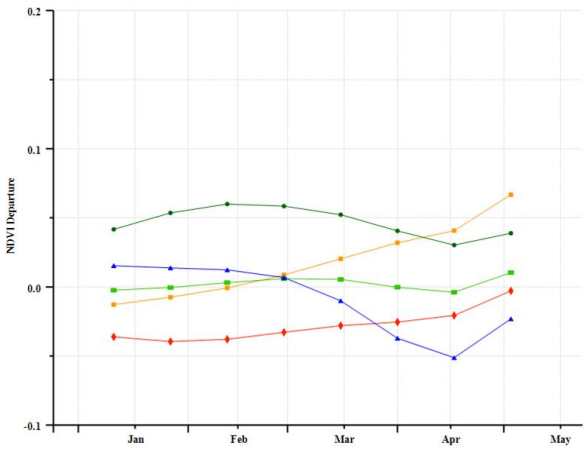
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



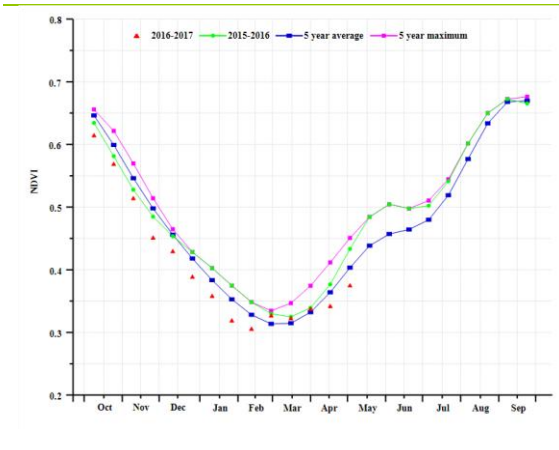
(d) NDVI profiles

[ETH] Ethiopia

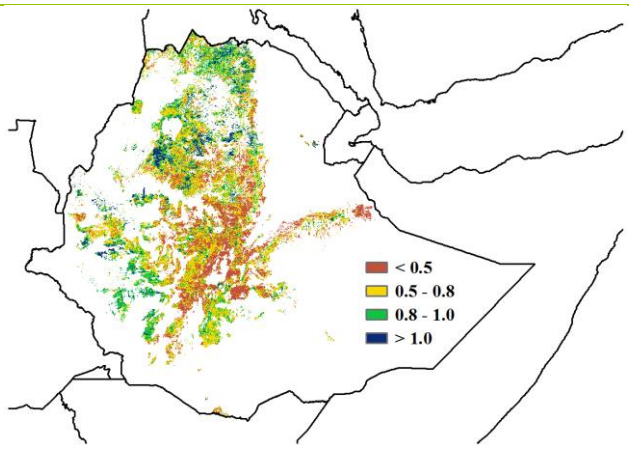
The monitoring period from January to April coincides with the early Belg cropping season; rainfall in this period is generally less reliable than during the main Meher season that corresponds to all crops harvested from August. With the exception of radiation (RADPAR, +4%), agroclimatic indicators show a general reduction in observed values compared to average: temperature (TEMP) -0.4°C and rainfall (RAIN) -9%, corresponding to an amount of 171 mm. However, the northwestern lowlands of Tigray, Amhara, and Benishangul-Gumuz, which are prominent cereal-producing areas, recorded a significant rise in rainfall of about 53%, which subsequently resulted in an increased biomass production potential (BIOMSS) of 44% above the five-year average for the period. Similarly, a large surplus of rainfall of about +136% was received in the western parts of Addis Ababa and Benishangul-Gumuz. BIOMSS in this area was 104% above average, which was very beneficial for the development of rangelands. In contrast, dry conditions prevailed in the eastern parts of the country, including the southeast highlands (Somali area), which recorded a rainfall deficit of 34%. BIOMSS departure in the southeastern mixed maize zone was -28%, which was the worst of all negative departures.

The spatial NDVI profiles show areas with negative values amidst positive ones, corresponding with the rainfall variations across the different areas. In addition, maximum VCI was about 0.59, indicating just fair crop condition; VCIx was highest (above 1) in some patches of Amhara and southwest Tigray, consistent with the increased biomass recorded in these areas. The western mixed-maize areas of SNNP, due to normal RAIN and increased RADPAR (+4.3%), experienced a BIOMSS increase of about 7.6% compared to average. Overall, crop condition seems to be favorable, but because most production occurs during the Meher season the final outcome of the situation is still very open.

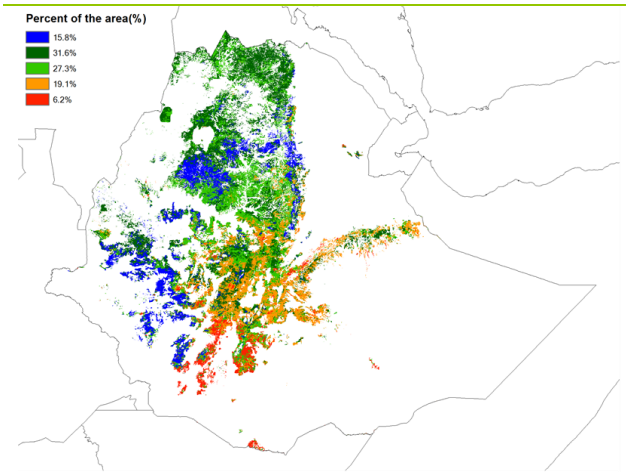
Figure 3.12. Ethiopia crop condition, January-April 2017



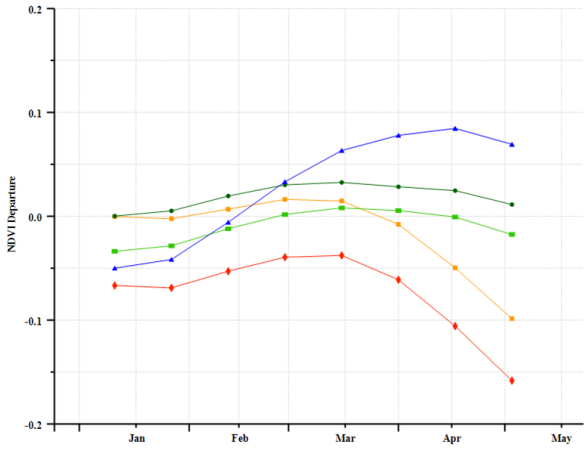
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

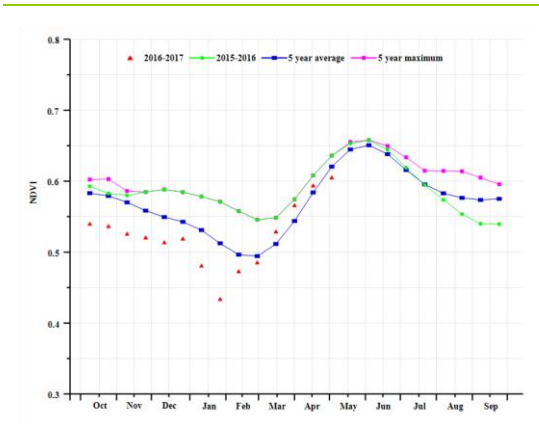
[FRA] France

According to the overall NDVI-based season development graph and spatial NDVI patterns, the condition of crops in France was spatially contrasted over the January-April monitoring period. Currently, winter wheat, winter barley, and spring barley are in the vegetative stages. At the national level, compared with the average for the same period, CropWatch agroclimatic indicators show a 36% decrease in RAIN, a 0.8°C decrease in TEMP, and close to average RADPAR. Subsequently, BIOMSS presents a 31% decrease over average due to the continuous rainfall deficit, especially after mid-March, coupled with the impact of low temperature. As shown by crop condition development graph based on NDVI, however, national NDVI values were well above average and close to the five-year maximum from early March to early April, consistent with a VCIx of 0.87 for France.

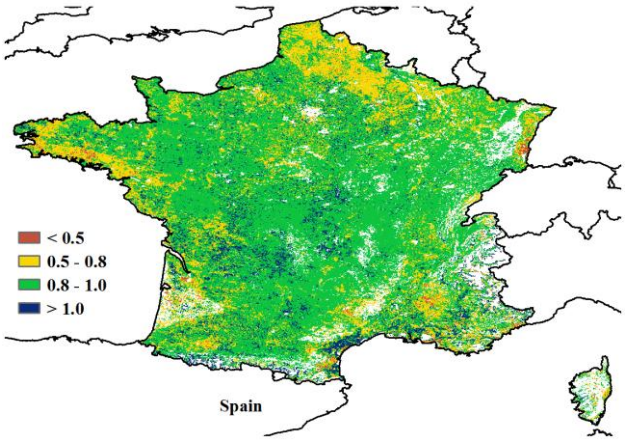
The spatial NDVI patterns for France show that NDVI values in many areas were below the five-year average from early January to the end of February. This, however, does not apply to 4.1 percent of agricultural areas, including the east of Franche-Comte, Rhone-Alpes, Provence Alpes Cote d'Azur, and the Mediterranean region of southern and southwestern France, where favorable conditions occurred throughout the reporting period. In the areas with below average values at the beginning of the monitoring period, NDVI values went up and above average again from early March to early April as a result of favorable temperature, while again dropping below average after early April due to the distinctly drier-than-usual weather conditions and low minimum temperature, which also affected flowering rapeseed in eastern France. Observations are consistent with the crop condition development graph based on NDVI.

Generally, the agronomic indicators mentioned above point at average condition for most winter crop areas of France for the time being, but more rain is needed in several important crop production areas to sustain good yields.

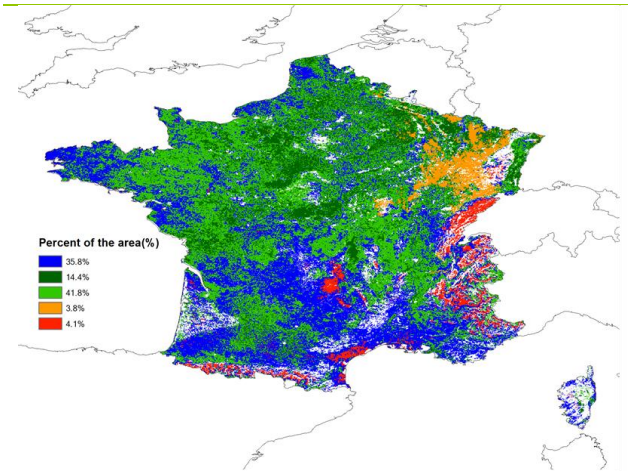
Figure 3.13. France crop condition, January-April 2017



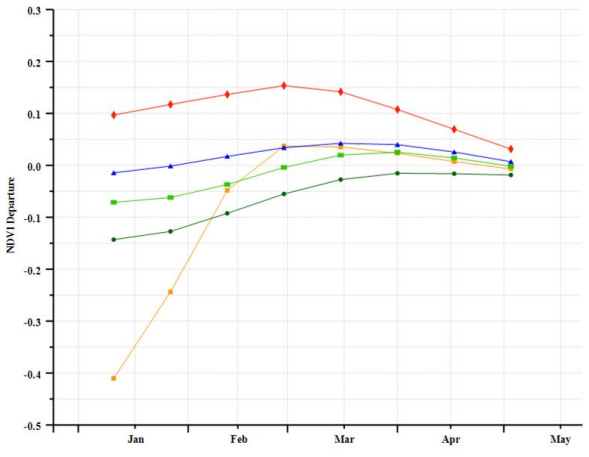
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

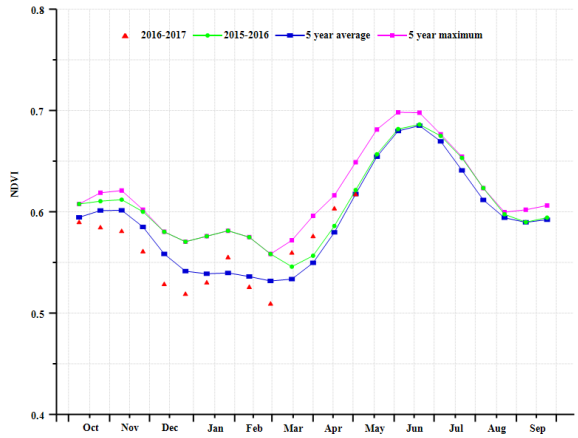


(d) NDVI profiles

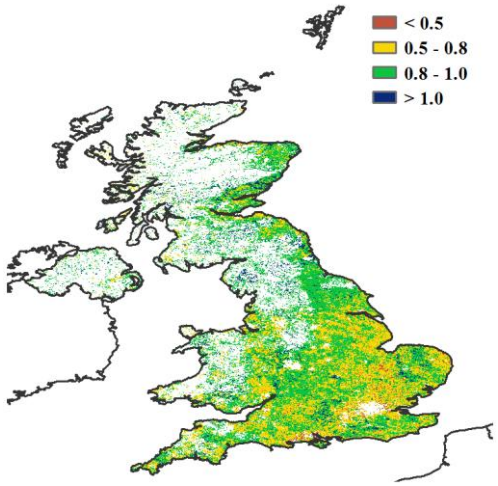
[GBR] United Kingdom

Currently, wheat, winter barley, spring barley, and rapeseed are in the vegetative stages. Crop condition in the United Kingdom showed generally favorable condition over the reporting period, resulting from mostly average weather at the national scale, with only radiation (RADPAR) showing a marked decrease of 9%. The biomass production potential BIOMSS is expected to be average as well. As shown by the crop condition development graph and the national NDVI values, crop condition is average at the time of reporting, after recovering from low values from late January to late February in the south, especially the southeast in an area extending roughly from Norfolk shire to Dorset shire and south of it. This spatial pattern is also reflected by the maximum VCI in the different areas, with a VCIx of 0.82 for the country overall. The area of cropped arable land (CALF) increased by 1 percentage point compared to the five-year average.

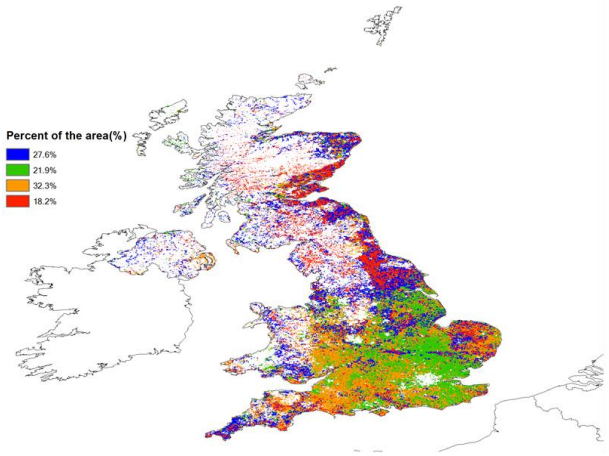
Figure 3.14. United Kingdom crop condition, January-April 2017



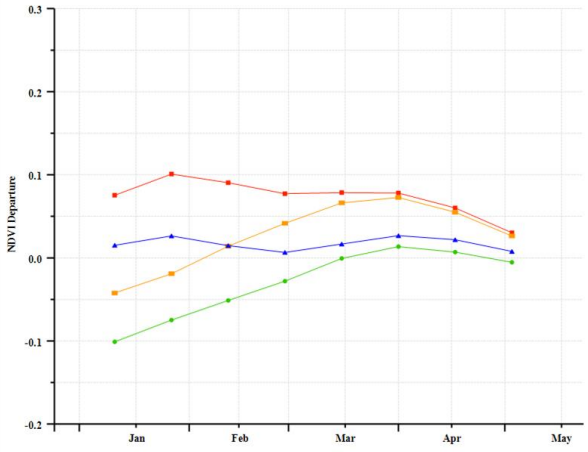
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

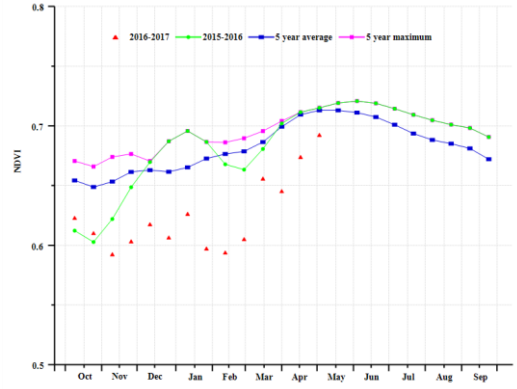
[IDN] Indonesia

Indonesia presented average crop condition over the January-April monitoring period, with a national VCIx value of 0.73. The monitoring period covers the growing and harvesting stages of the rainy season maize and rice. The area of cropped arable land (CALF) in the country is comparable with the five-year average. Compared with the recent fifteen-year average for the same period, precipitation (RAIN) was above average by 7%, while temperature was below (TEMP, -0.7°C), and sunshine (RADPAR) showed a decrease of 4%. The biomass production potential BIOMSS was up 2% compared to its recent five-year average.

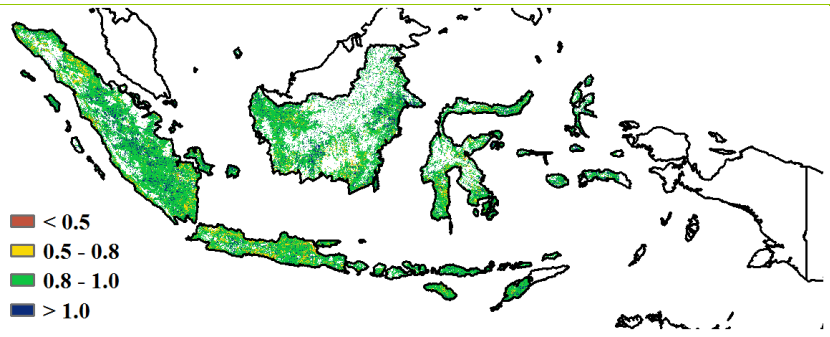
According to the NDVI patterns and profiles, the condition of crops was above average throughout the reporting period in Jambi, Sumatera Selatan, and Riau, while it has been below average since February in Sindang Regency in West Kalimantan province. Nationwide, the NDVI based crop condition development graph was below both the five-year average and last year's values from January to late February.

Overall, the abundant rainfall during the reporting period provided favorable soil moisture condition for the secondary crops, and overall prospects for the country are favorable.

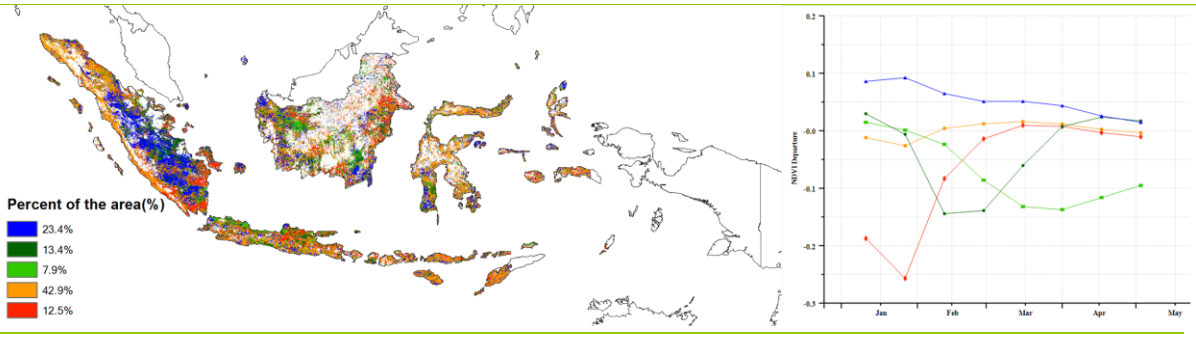
Figure 3.15. Indonesia crop condition, January-April 2017



(a) Crop condition development graph based on NDVI



(b) Maximum VCI



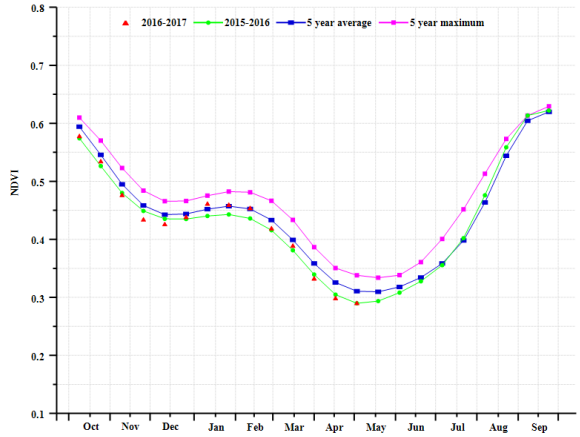
(c) Spatial NDVI patterns compared to 5YA

d) NDVI profiles

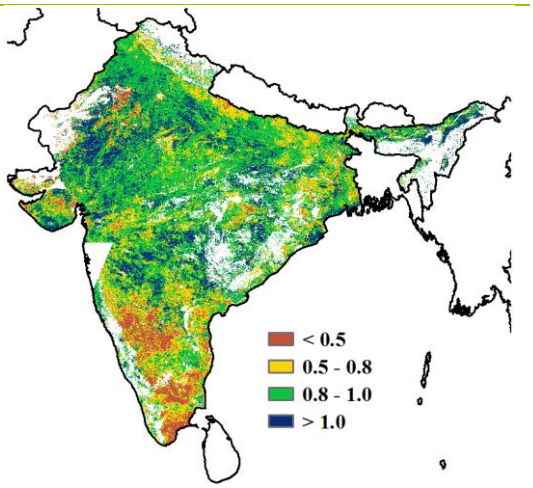
[IND] India

The monitoring period coincides with the growing and harvesting seasons of rabi (winter) crops, such as wheat, maize, sorghum, groundnuts, rapeseed, and rice. Temperature and radiation for the country overall were about average (TEMP, +0.2°C and RADPAR, +1%), but rainfall (RAIN) showed a 16% drop, and the biomass production potential (BIOMSS) is down 28% compared to its five-year average. Marked rainfall deficits occurred in Uttar Pradesh (RAIN, -52%), Bihar (-47%), Andhra Pradesh (-41%), and Karnataka (-39%), among others. National crop condition development was comparable to 2015-2016 and below the average of the previous five years. The maximum VCI index was low (VCIx<0.5) in the southern areas of Mysore and Madras. The NDVI profile values remained favorable for the entire country, exception for some areas in the southern part of the country (8.5% of croplands) and north (18.7%). With a favorable maximum vegetation condition index (0.83) and an increase in the fraction of cropped arable land (CALF) by 4 percentage points over average, crop prospects for the country remain average.

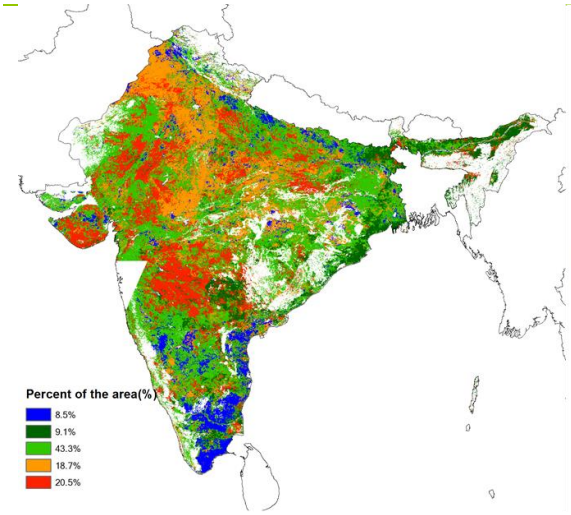
Figure 3.16. India crop condition, January-April 2017



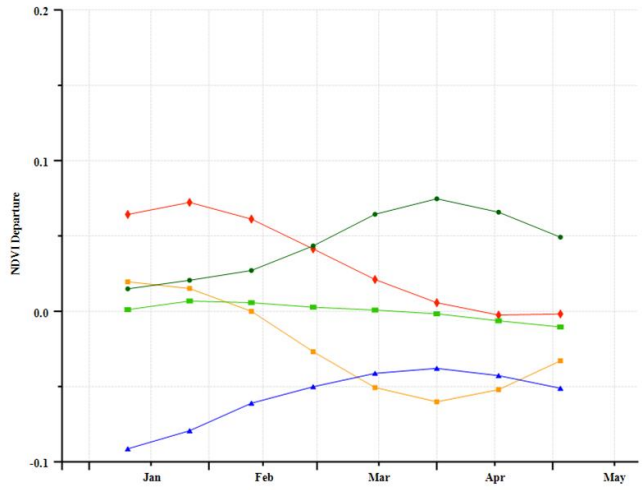
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

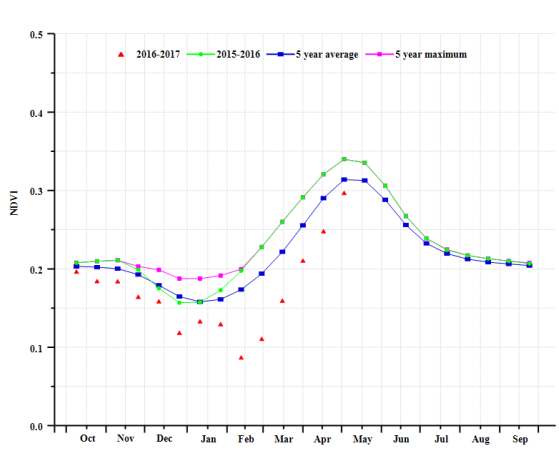
[IRN] Iran

Crop condition in Iran was generally below average over the reporting period. During this time, winter wheat was still growing, and barley was harvested. Accumulated rainfall (RAIN, -9%), temperature (TEMP, -0.6°C), and radiation (RADPAR, -1%) were below average, leading to a decrease in the BIOMSS index by 7% compared to previous years. The national average of the maximum VCI index was 0.5, while the cropped arable land fraction (CALF) significantly decreased by 19 percentage points compared to the five-year average. The available information implies that crop phenology for winter wheat is likely delayed due to the unfavorable weather conditions.

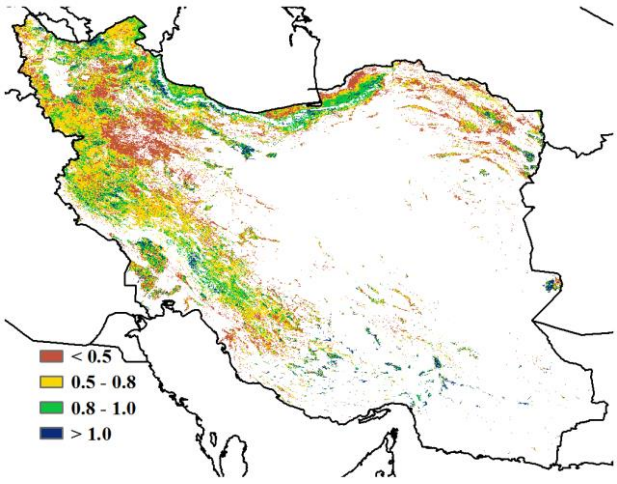
From February to April, crop condition was below average almost across the country, in an area accounting for 89.7% of total arable land. Areas with above average condition are mainly distributed in Hormozgan province and surrounding regions. In West Azerbaijan, Kermanshah, and Golestan provinces, condition of crops was even below the five-year average over the entire period. In the East Azerbaijan, Ilam, Luristan, and Bushehr provinces, crop condition was below average from January to March, but recovered to average in April.

Overall, winter crop condition in Iran has not been favorable over the monitoring period. Due to the crop phenology change, the final outcome of winter wheat in Iran depends on weather and crop conditions in the next few months.

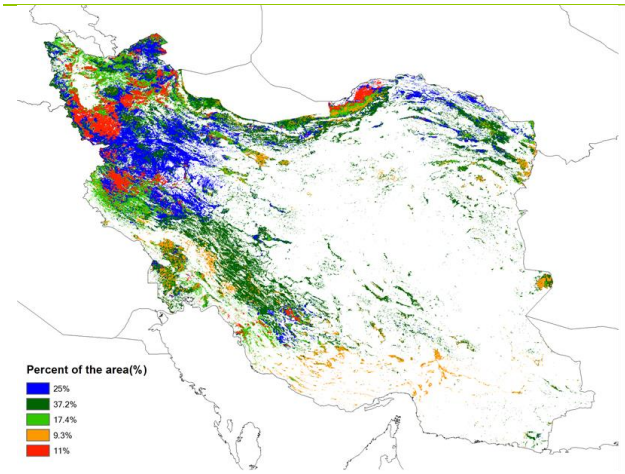
Figure 3.17. Iran crop condition, January-April 2017



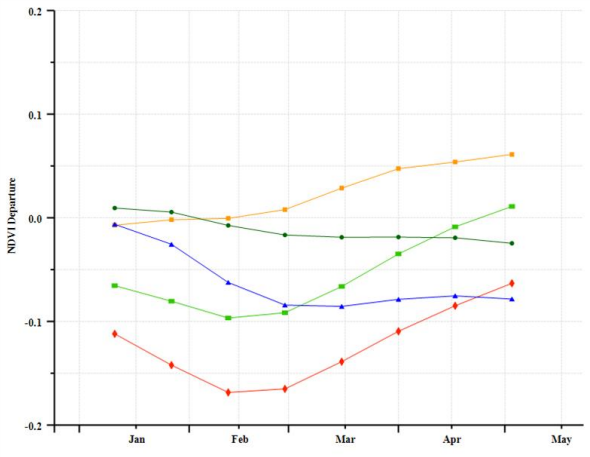
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



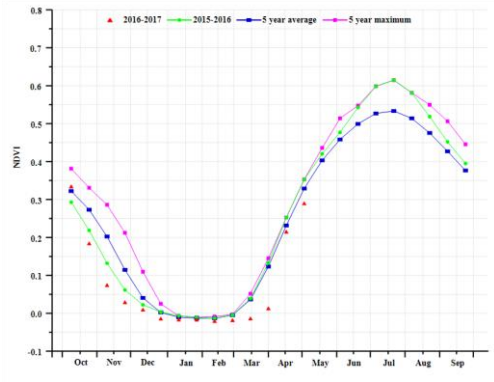
(d) NDVI profiles

[KAZ] Kazakhstan

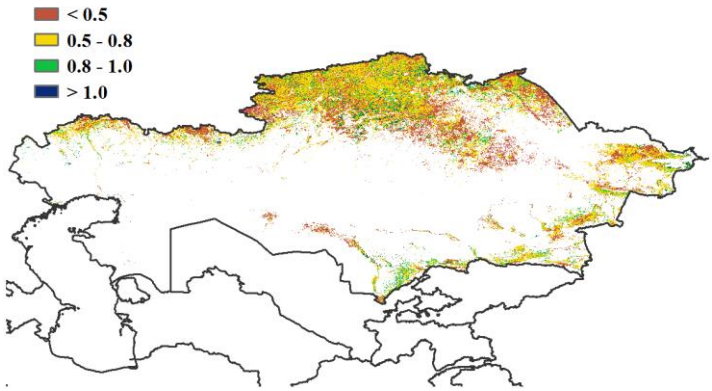
As shown by the national NDVI development graph, no winter crops are normally cultivated in Kazakhstan, while spring crops are currently at the sowing and vegetative stages. During the monitoring and reporting period, rainfall (RAIN) was below average by 2%, while temperature (TEMP) was above by 0.4°C, and PAR accumulation (RADPAR) again below average by 2%, leading to a small biomass potential (BIOMSS) increase of 2% over the recent five-year average. In the main agricultural regions, rainfall was down 11% in northeastern Zapadno-Kazakhstanskaya, 3% in the north of Severo Kazakhstanskaya, and 6% in the Akmolinskaya oblast. However, spatial NDVI patterns compared to the recent five years and NDVI profiles indicate that the south and north had favorable vegetation development, an important observation in a country where livestock plays a major role. Poor vegetation that occurs in about 10.6% of areas is concentrated along the Chinese border. Current NDVI profiles and values of maximum VCI are about average, with more favorable areas in the south.

Altogether, crop prospects for the country are currently average, with the exception of limited patches along the Chinese border.

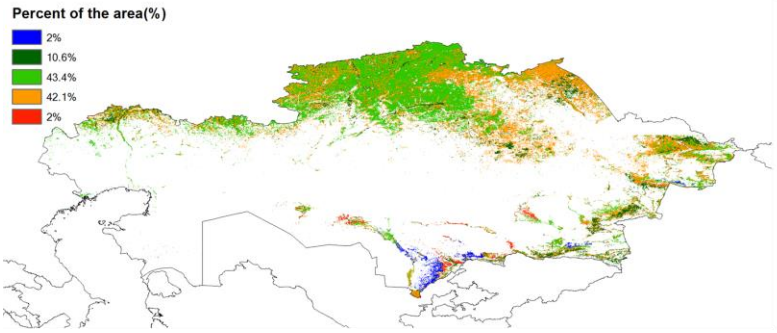
Figure 3.18. Kazakhstan crop condition, January-April 2017



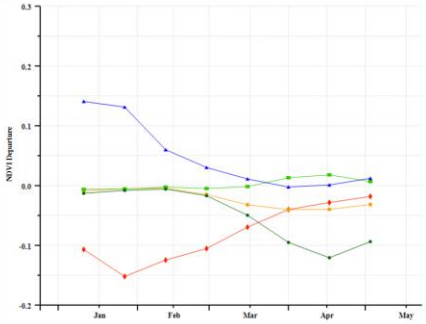
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

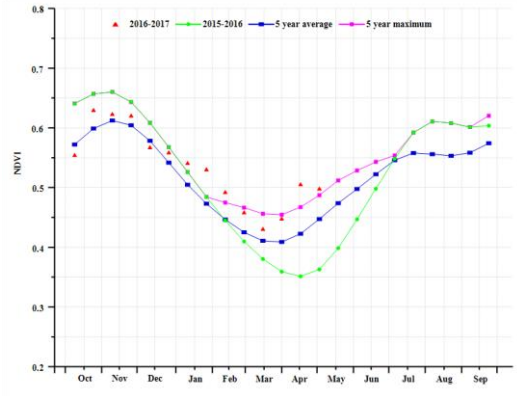


(d) NDVI profiles

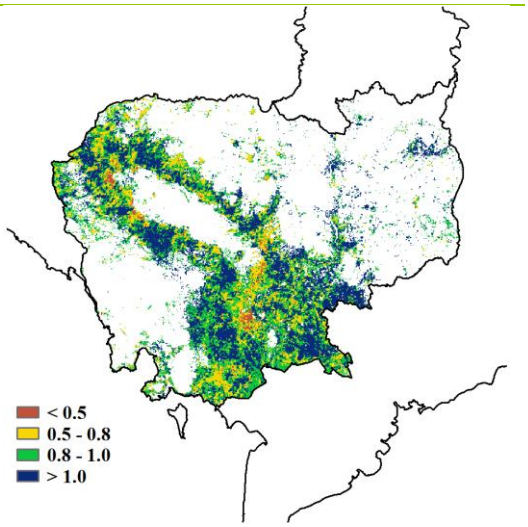
[KHM] Cambodia

The January to April monitoring period covers the growing stage of the second (dry season) rice in Cambodia. Compared to average, the CropWatch agroclimatic indicators show markedly over average rainfall (RAIN, +30%), but a decrease in temperature (TEMP, -1.0°C) and normal sunshine. Average and even better than maximum NDVI profiles all point at very favorable conditions at the end of the reporting period. Moreover, vegetation condition indices (VCIx) are above 0.8 in large expanses of the country, which points at unusually good conditions. Considering, in addition, that the fraction of cropped arable land (CALF) was 22 percentage points above the five-year average, crop prospects in Cambodia are very favorable.

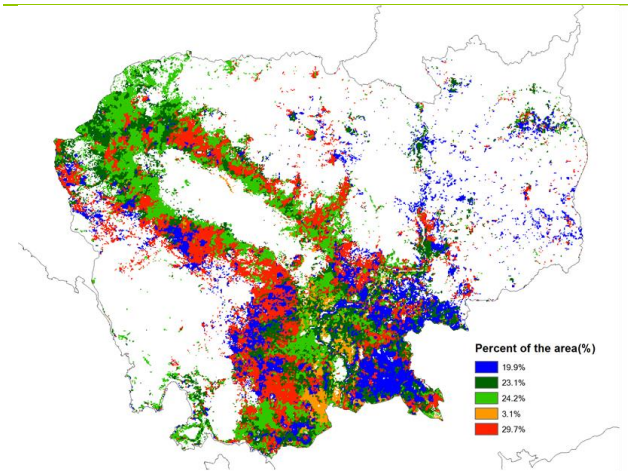
Figure 3.19. Cambodia crop condition, January-April 2017



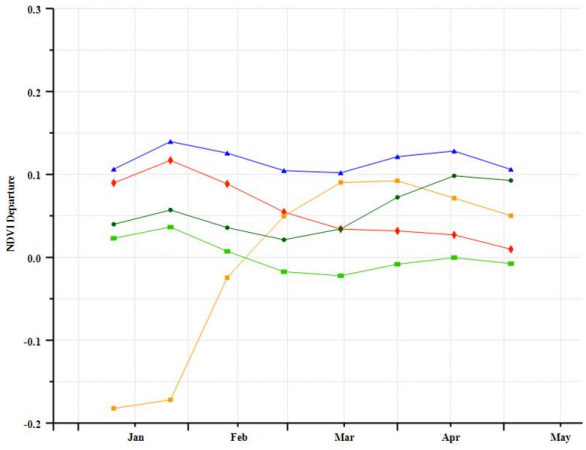
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

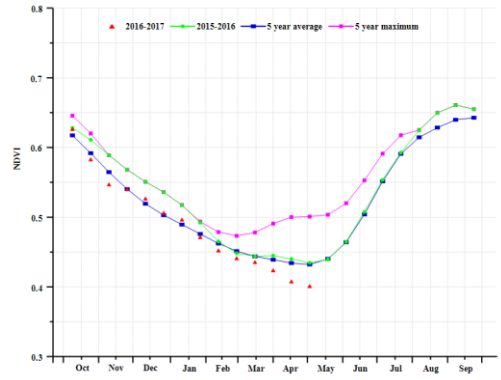
[MEX] Mexico

In Mexico, maize, sorghum, and rice for the spring to summer season have been harvested during late January and early February this year, while winter crops—maize, sorghum, and wheat—have been growing since February. During the current monitoring period, according to the crop condition development graph based on NDVI, crop condition was generally below average with increasing departures over time.

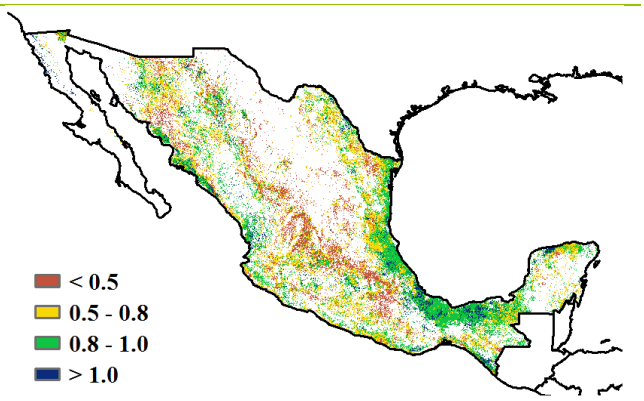
The CropWatch agroclimatic indicators show that rainfall (RAIN) dropped 9% below average, while temperature (TEMP) and radiation (RADPAR) increased by 0.4°C and 3%, respectively. The resulting biomass production potential (BIOMSS) was 3% below average. The maximum VCI at the national level was 0.72, with lower values located in central and southern Mexico, such as in the states of Zacatecas, Aquascalientes, Jalisco, Michoacan, Mexico, Tiaxcala, Morelos, Puebla, and Guerrero. In contrast, high values of maximum VCI occur in eastern Mexico, including Veracruz, Tobasco, and Oaxaca states. As shown by the map of spatial NDVI patterns and corresponding profiles, 51.4% of planted areas in the country experienced generally below average condition at the end of the reporting period, with these areas mainly located in Zacatecas, Aquascalientes, Jalisco, Michoacan, Guerrero, Campeche, and Yucatan, which agrees well with the pattern of lower VCIx values. Favorable crop condition occurred in Coahuila, Nuevo Leon, Tamaulipas, Sonora, Chihuahua, and Tobasco.

Based on the above analysis and the fact that the fraction of cropped arable land (CALF) is 3 percentage points over average, crops yields for Mexico's current season are estimated to be slightly below average.

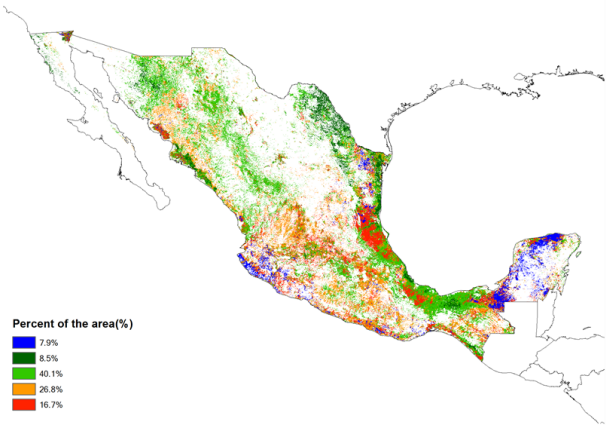
Figure 3.20. Mexico crop condition, January-April 2017



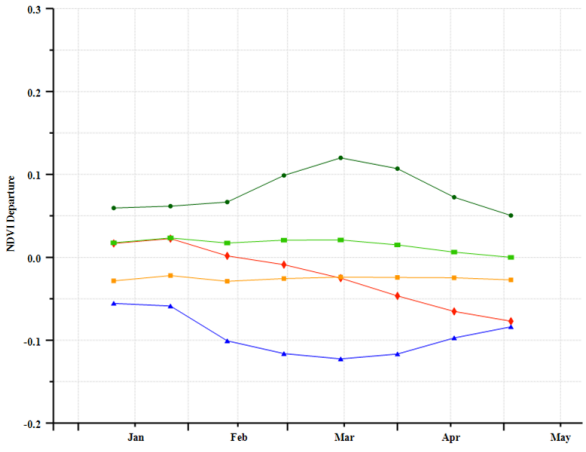
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

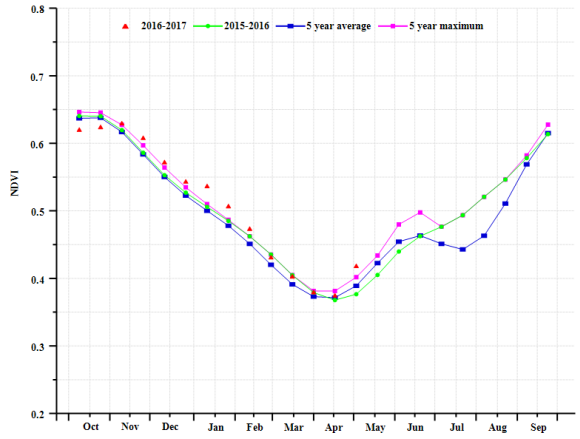


(d) NDVI profiles

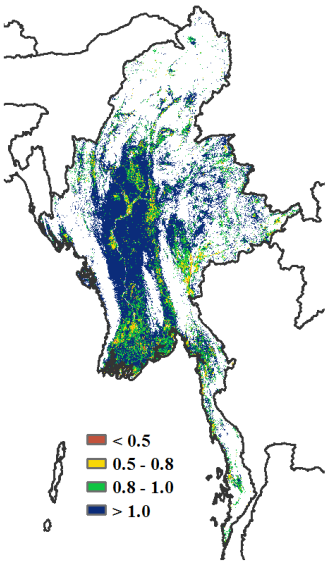
[MMR] Myanmar

The reporting period from January to April covers the growing and harvesting season of winter rice; all maize was harvested by mid-April. According to the CropWatch indicators, crop condition was average during the monitoring period. Rainfall (RAIN) was 5% above average, temperature was close to average (TEMP, -0.2°C), and radiation (RADPAR, -3%) was only slightly below average. Across the country, the fraction of cropped arable land (CALF) increased by 13 percentage points over the five-year average for the January-April period, and the biomass accumulation potential (BIOMSS) was 5% above average. As a result, national crop condition development profiles were also mostly above average and even exceeded the five-year maximum in February and mid-April. Spatial NDVI profiles are also mostly positive (above average) throughout the country and across the reporting period, especially in southern Myanmar, including Kayah, Bago, Yangon, Ayeyarwaddy, and some scattered locations in the center. It is worth mentioning that VCIx performed well all over the country, especially in Magwe, Mandaly, Shan and northern Bago, which had not only high VCIx values (>1), suggesting a better condition than ever before, but also high NDVI values. Overall, crop condition for Myanmar is assessed as above average.

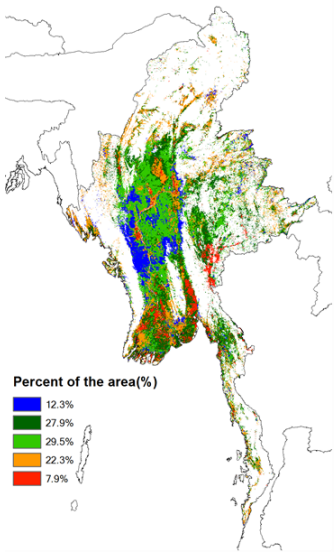
Figure 3.21. Myanmar crop condition, January-April 2017



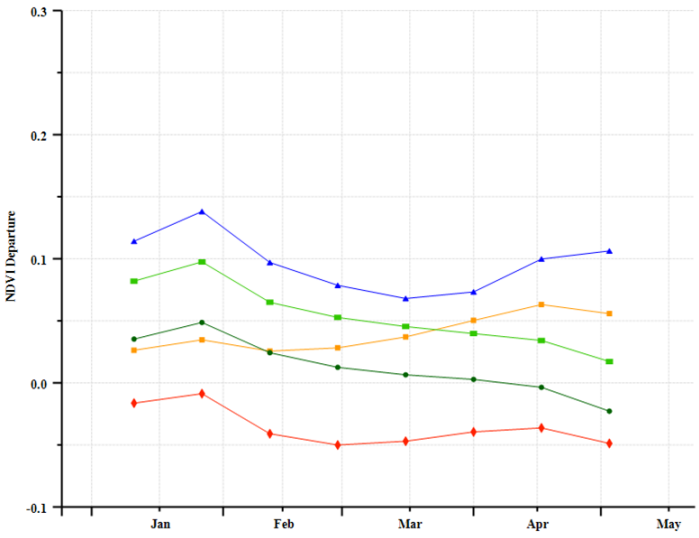
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



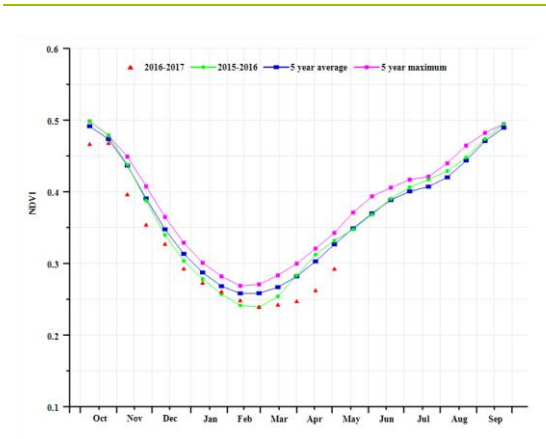
(d) NDVI profiles

[NGA] Nigeria

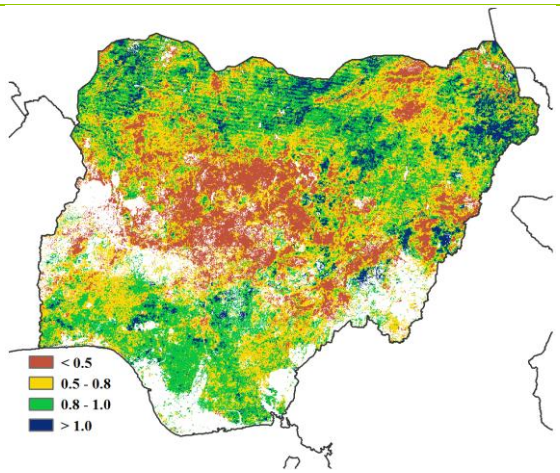
The monitoring period covers the harvesting season of the second rice crop for the southern region of the country, as well as harvests of cotton, second maize, and sweet potato. In addition, the period included sowing seasons for cassava (south region), maize (main, south), and yams. Rainfall (RAIN) and radiation (RADPAR) were about average, while temperature (TEMP) was well below (-4°C). The period experienced a poor vegetation condition index (VCIx: 0.69), as well as a reduction in both the biomass production potential (BIOMSS, -10%) and the fraction of cropped arable land fraction (CALF, -24 percentage points) compared to the five-year averages for the same period for these indicators.

Nationwide, crop development based on NDVI was always below both the average of the previous five years and last year's values. Favorable crop condition development, compared to average, was observed for Borno, Gygawa, and Sokoto in the northern region of the country, and in some areas of south Kogi in the south. Unfavorable crop condition occurred in the central region of the country, corresponding to Massarawa, Niger, and Kaduna.

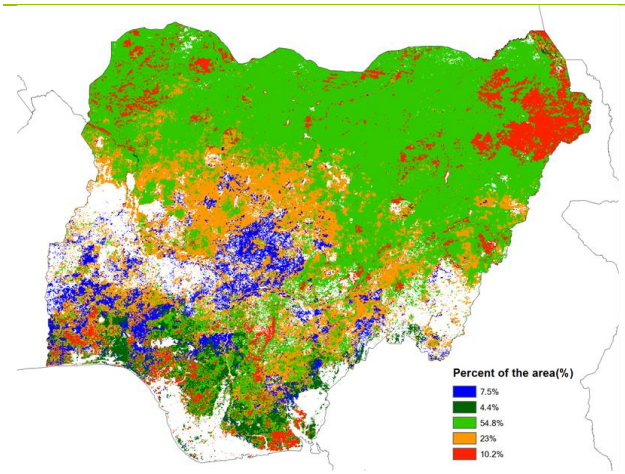
Figure 3.22. Nigeria crop condition, January-April 2017



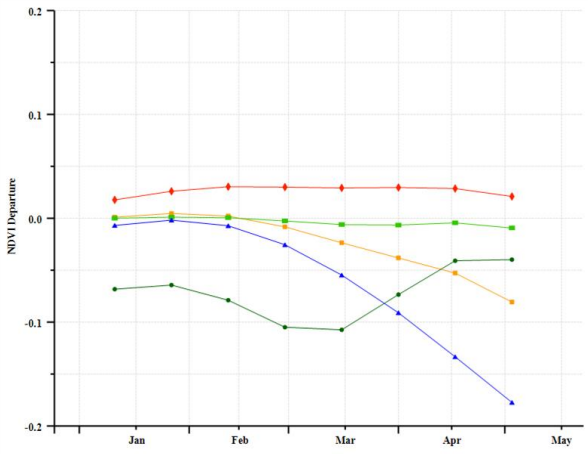
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



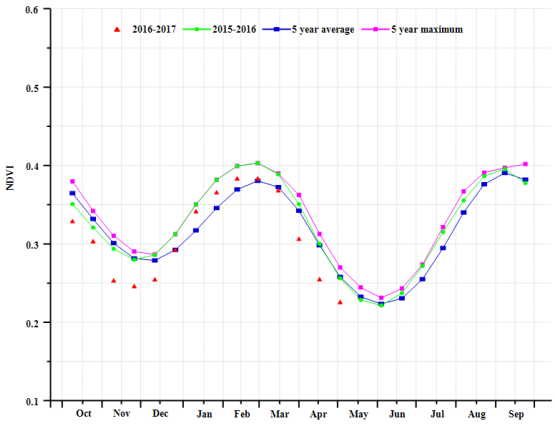
(d) NDVI profiles

[PAK] Pakistan

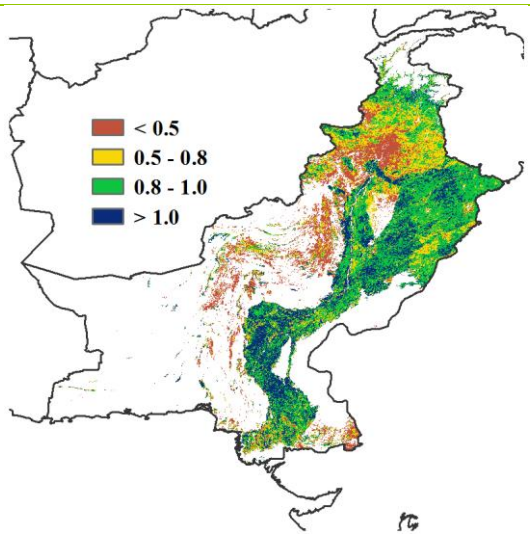
The harvesting of winter wheat and barley was completed during the recent monitoring period. Crop condition was generally unfavorable, as indicated by the national NDVI development graph. Compared with average, rainfall (RAIN) suffered a significant decrease of 15%, while temperature (TEMP, -0.1°C) and radiation (RADPAR, -1%) were close to average. As a result, the biomass production potential (BIOMSS) was 8% below the average of the recent five years.

In about 56.7% of the country's arable land, mostly distributed in the north and northeast, crop condition was slightly below average. In areas mainly in the south and southeast, crops did better than average in February and March, but condition deteriorated again later on. Crop condition was unfavorable in the north and northeast of the country, with VCIx values below 0.5. Overall, the anticipation for 2017 crops is a below but close to average output, considering also an increase in the fraction of cropped arable land (CALF) of 6 percentage points over the average for this indicator for the January-April period.

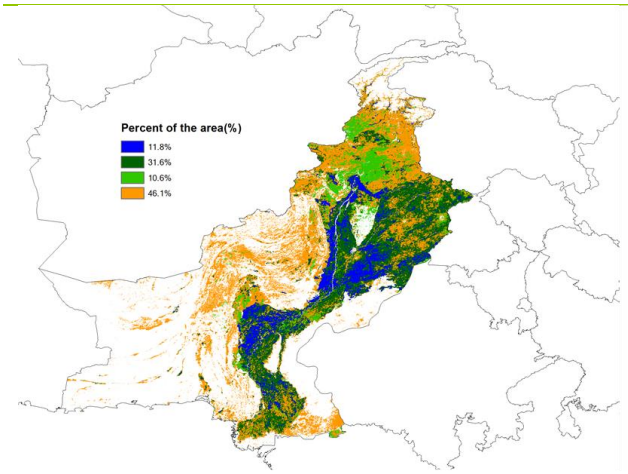
Figure 3.23. Pakistan crop condition, January-April 2017



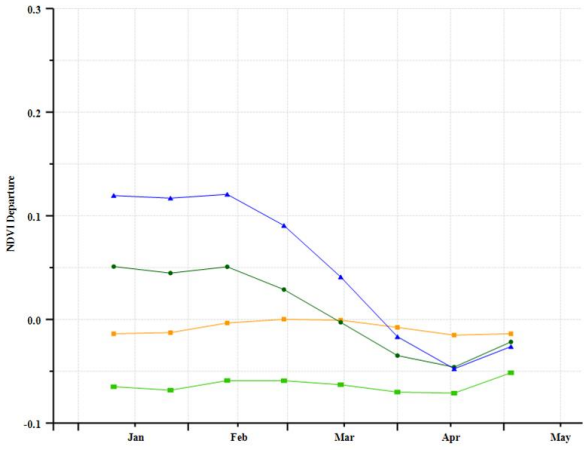
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



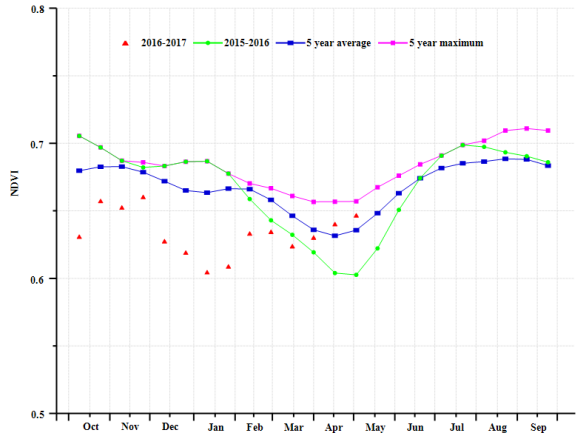
(d) NDVI profiles

[PHL] The Philippines

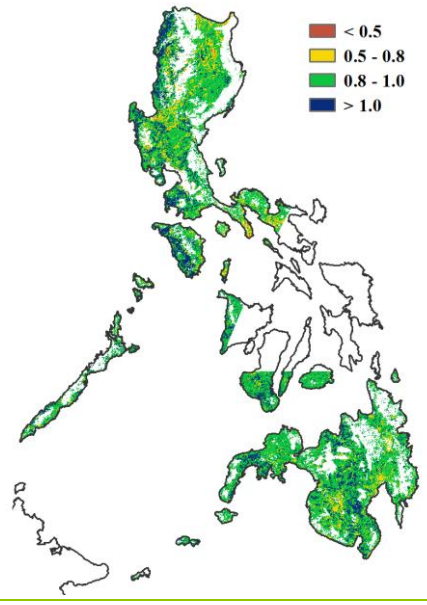
The monitoring period covers the harvesting stage of secondary rice and maize, as well as the sowing stage of main rice and maize for the country. Crop condition was favorable from January to April, with a VCIx of 0.69 for the country overall. The cropped arable land fraction (CALF) was average.

Over the reporting period, the Philippines enjoyed a large increase of rainfall over average (RAIN, +69%), while temperature and PAR were below average (TEMP, -0.9°C and RADPAR, -5%). Benefiting from the abundant rainfall, the biomass accumulation potential (BIOMSS) was 33% above the recent five-year average, a finding confirmed by the national NDVI development curve exceeding the recent five-year average and last year's values in April. According to the maximum VCI distribution map, many pixels' VCIx values exceed 1 in the regions of Ilocos and Mimaropa, indicating very favorable crop condition. Altogether, the output of the main season crops in the Philippines is expected to be above average.

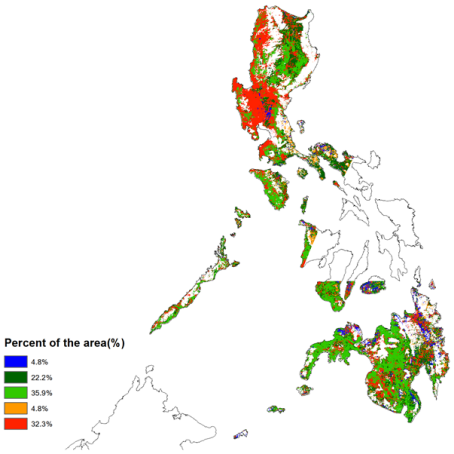
Figure 3.24. Philippines crop condition, January-April 2017



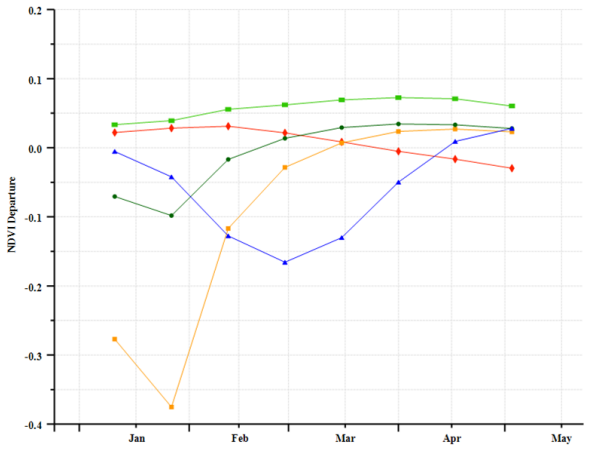
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

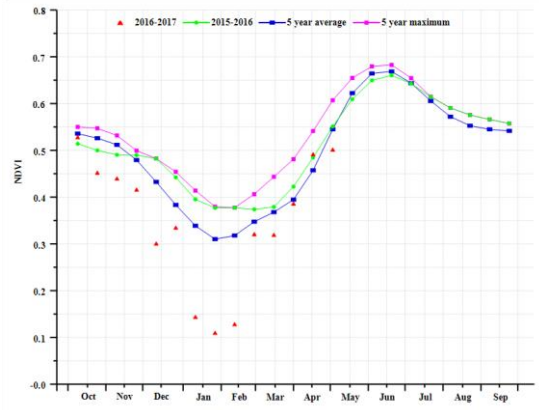
[POL] Poland

Poland enjoyed favorable crop condition during this monitoring period (VCIx=0.82), which corresponds with the wintering stage of winter wheat, while maize seeding started in the beginning of April. The cropped arable land fraction (CALF) for the country is the same as the average of the last five years. Weather during January to April was much wetter and somewhat colder than average, with rainfall (RAIN) up 23% and temperature (TEMP) down 0.2°C. Radiation (as indicated by the RADPAR indicator) dropped 13% below average, while the potential biomass production potential (BIOMSS) was up 6% due to the combination of abundant precipitation and slightly colder weather.

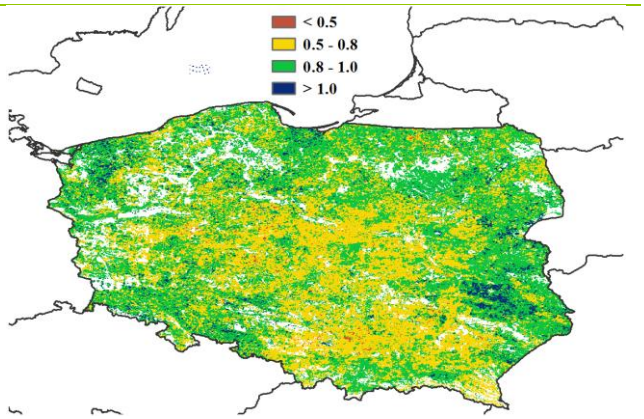
As shown in the national crop condition development graph and NDVI profiles, NDVI values were significantly below average from the start of the monitoring period to the middle of March, but then quickly reverted to average. The reason for this is the snow that had been covering almost the entire country from last October on forward, with NDVI starting to drop already in October last year. Only in 13% of croplands, mainly concentrated on Malopolake and Slaskie, was NDVI above average during the monitoring period.

The national VCIx in Poland during this monitoring period was 0.82. The snow has probably protected crops from cold weather, and the sufficient rainfall will provide enough soil moisture. The overall outlook of winter crops for the country is mixed to average.

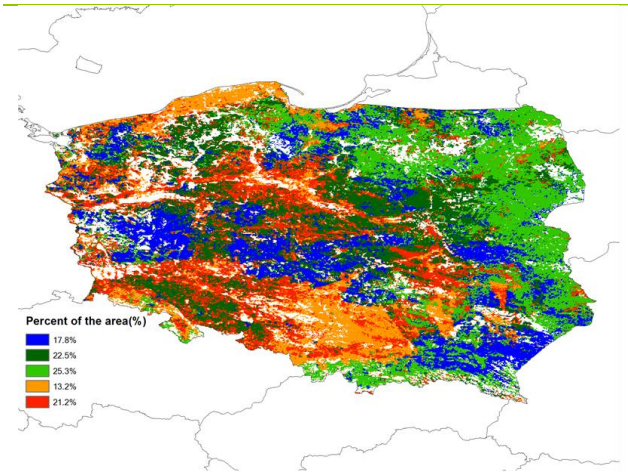
Figure 3.25. Poland crop condition, January-April 2017



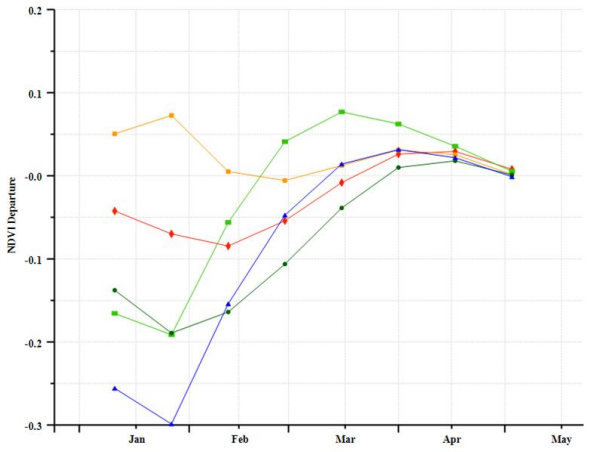
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

[ROU] Romania

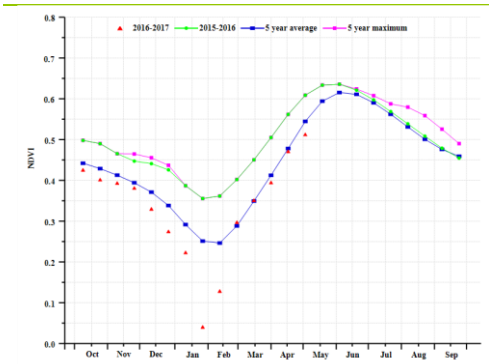
Romania presented average crop condition over the reporting period, with an overall maximum VCI index of 0.77. NDVI showed a sharp drop in mid-January during the dormancy period of winter wheat, also resulting in a drop in the fraction of cropped arable land (CALF) of 1 percentage points. Overall, temperature (TEMP) was slightly below average (-0.4°C), while the rainfall (RAIN) anomaly was +33% and radiation about average (RADPAR, +1%). The biomass production potential was above average (BIOMSS, +12%).

As shown in the nationwide crop condition development graph, NDVI was below the five-year average before March, with the lowest NDVI (below 0.05) happening in January, after which values again became rather close to average. In most parts of middle Romania near Targu Mures, crop condition was average (VCIx values of 0.5-0.8), while in the northeast (for example in Lasi) above average crop conditions were experienced (VCIx values near or above 0.8). In contrast, southern regions around Bucharest had below average VCIx values, with values close to or below 0.5.

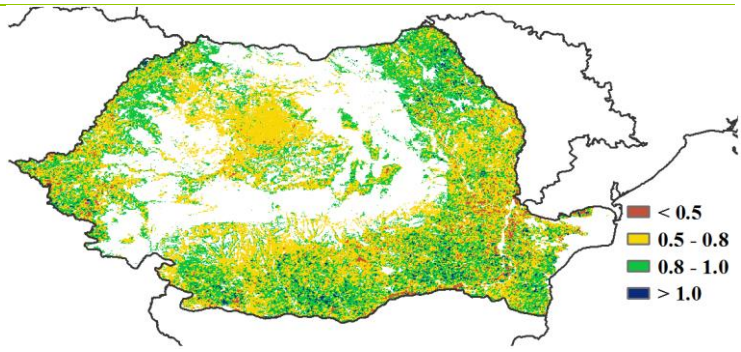
As for crop condition development during the monitoring period, the NDVI profiles linked to the NDVI spatial patterns show that crop condition went down in northeastern Romania (including Suceava), while it partly went up in the southeast border area. Most parts of the west and middle of the country only experienced slight changes in condition, while in some southern regions (Craiova, Ciurgiu, and Olenita) an improvement in crop condition was recorded after mid-February.

Overall, crop condition is favorable in Romania for both past winter crops and summer crops as a result of abundant soil moisture.

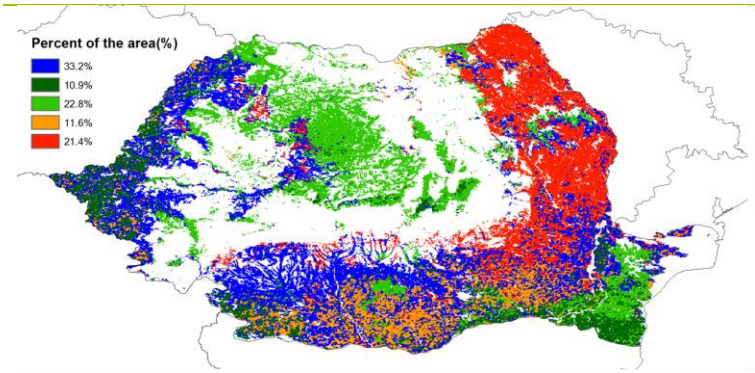
Figure 3.26. Romania crop condition, January-April 2017



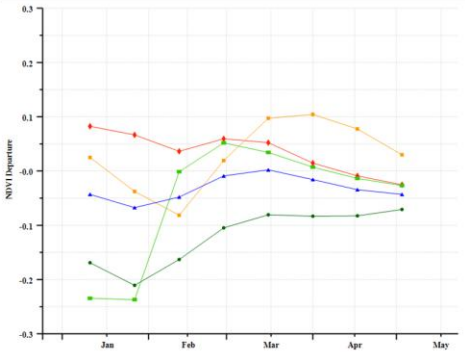
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

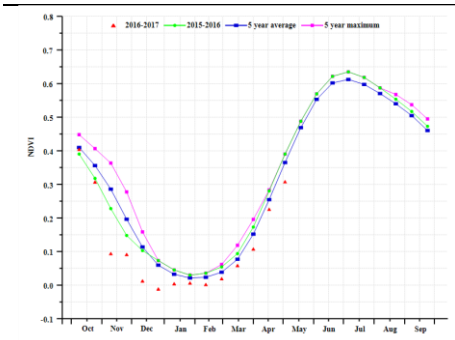
[RUS] Russia

On average, Russia experienced unfavorable crop condition from January to April (VCIx=0.58), which coincides with the wintering stage of winter wheat and early planting of spring wheat. The fraction of cropped arable land (CALF) was not monitored because of the serious snow cover during the monitoring period. Overall Russia experienced suitable climate conditions in these four months, with sufficient rainfall and warm temperatures (RAIN, +6%, and TEMP, +1.2°C). Due to the joint effect of rainfall and temperature, the BIOMSS indicator rose 5% above the five-year average.

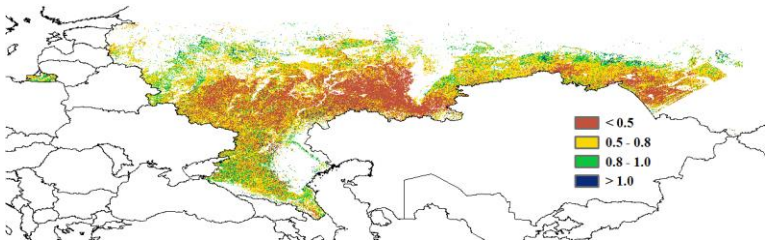
As the crop condition development graph based on NDVI illustrates, NDVI was significantly lower than usual from the middle of October last year on forward, a situation due to the abundant snow cover on most croplands in Russia. With spring wheat being sowed, NDVI reverted to close to average. NDVI in Kaliningrad, Volga, and Northwestern Federal District (mainly concentrated in Kirovskaya Oblast, Gorodovikovsk, Samarskaya Oblast, Udmurtiya Republic, Ulyanovskaya Oblast and Volgogradskaya Oblast) consistently exceeded the average of the last five years, especially in February, resulting mostly from the abundant rainfall in these places (RAIN, +40%, +18%, and +29%, respectively). In most parts of croplands in the southern Urals (including Penzenskaya Oblast and Bashkortostan and Udmurtiya Republics), NDVI was close to average until the middle of February, after which it decreased.

Based mostly on the low VCIx values for the country (0.58), the outlook for Russia's wheat production is considered mixed.

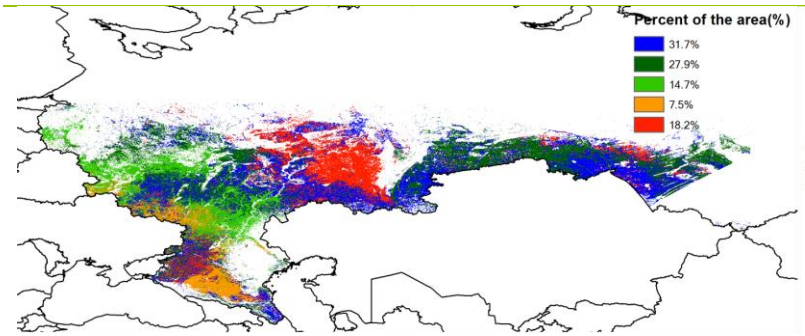
Figure 3.27. Russia crop condition, January-April 2017



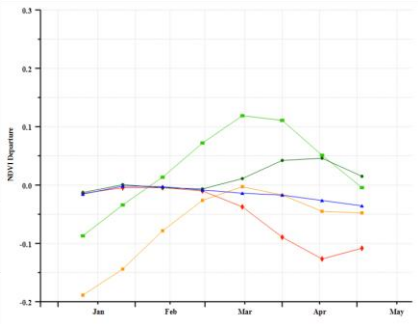
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

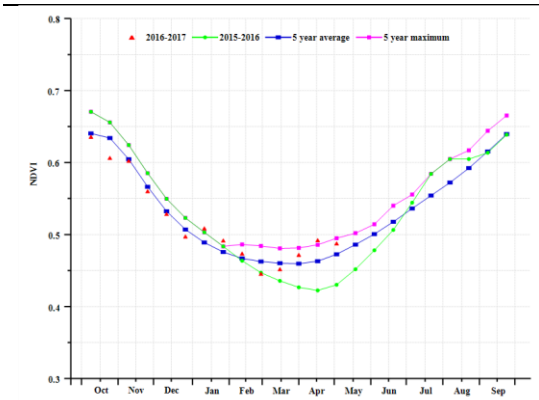
[THA] Thailand

Thailand's main rice crop was harvested in January, while its second season rice matured and was ready for harvesting in April. Rainfall was abundant over the reporting period (RAIN, +61%), while temperature (TEMP, -0.1°C) and radiation (RADPAR, -1%) were slightly below average. The biomass production potential (BIOMSS) is up 9%, and the fraction of cropped arable land (CALF) also increased by 12 percentage points over its average for the period.

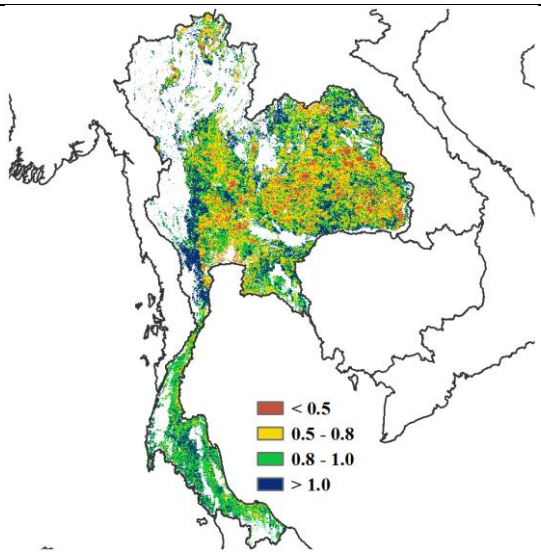
Crop condition based on NDVI was below average in mid-February and March, but improved later. Considering the spatial NDVI patterns and corresponding profiles, crop condition in most regions was slightly above but close to average, while for about 19.5% of cropped land, located in the center (Pichit, Petchabun, Uthai Thani, Chai Nat, and Lop Buri) and northeast (Nong Khai, Kalasin, Roi Et, Khon Kaen, Surin, and Ubon Ratchathani), slightly below average conditions were observed with VCIx values below 0.5.

Overall, crop production prospects for the country remain close to average or above.

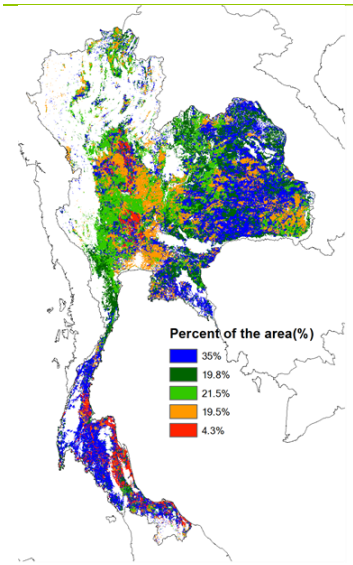
Figure 3.28. Thailand crop condition, January-April 2017



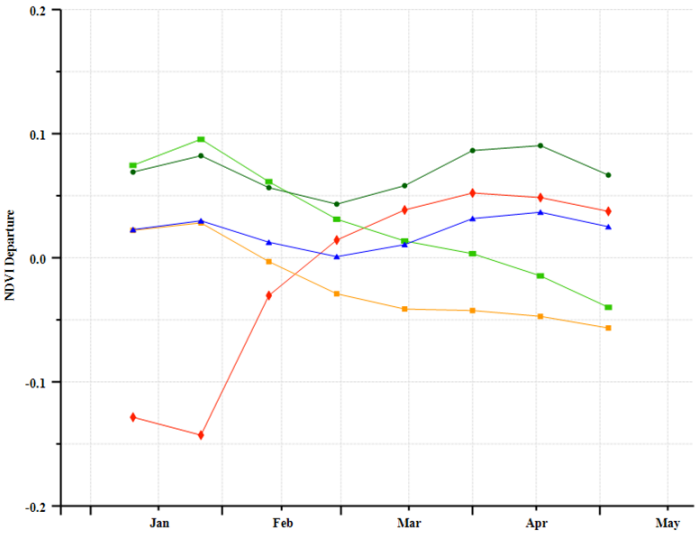
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



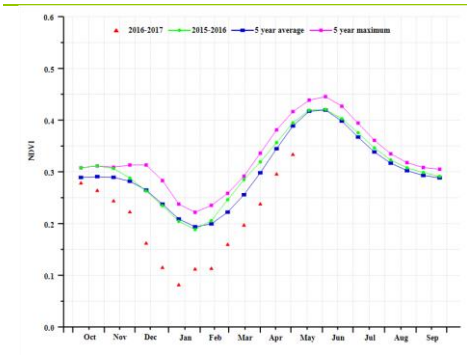
(d) NDVI profiles

[TUR] Turkey

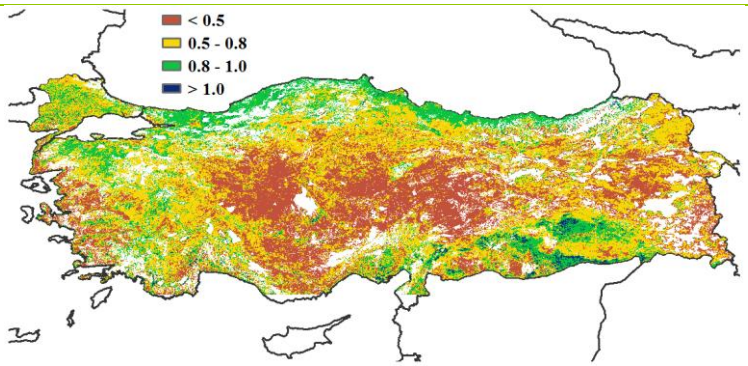
The crop condition from January to April 2017 was generally well below average in Turkey. Winter crops are grown during this period, and planting of summer crops started in April. Accumulated rainfall (RAIN, -22%) and temperature (TEMP, -0.5°C) were below average. Radiation (RADPAR, +3%) was above average. The unfavorable agroclimatic conditions resulted in a negative departure of BIOMSS of 11%. The VCIx (0.57) was poor and the cropped arable land fraction CALF decreased by as much as 28 percentage points compared to the recent five-year average.

Except in the eastern half of the country, where NDVI increases from the center to the east, the country as a whole experienced poor NDVI values. Most severely affected are several central areas in and around the provinces of Afyon, Ankara, Eskisehir, and Konya. The map of maximum VCI presents a pattern consistent with the NDVI cluster map. Combined with the very marked drop in cropped arable land, the situation can only be assessed as rather poor.

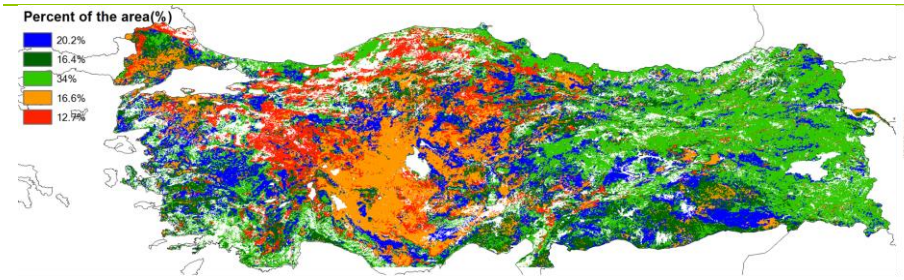
Figure 3.29. Turkey crop condition, January-April 2017



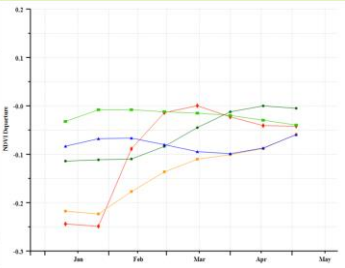
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

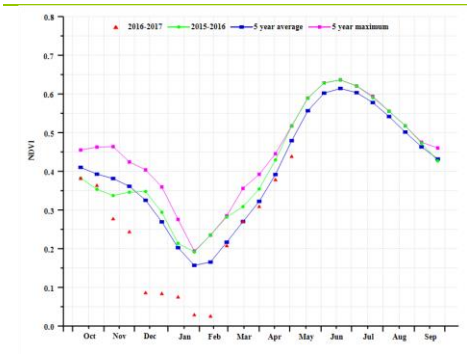


(d) NDVI profiles

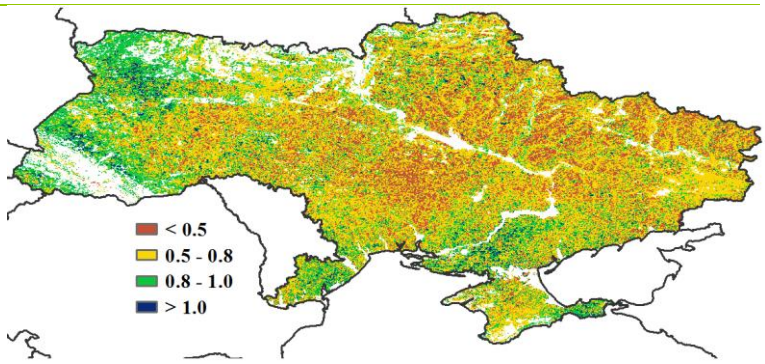
[UKR] Ukraine

The main crops in the field during the reporting period were winter wheat and cereals, while spring crops (maize, barley, and other cereals) were being sowed. Agroclimatic conditions for the country were above average over the reporting period: rainfall (RAIN) increased by 20%, temperature (TEMP) was slightly above average, while radiation (RADPAR) decreased by 3%. As a result, the biomass production potential (BIOMSS) also performed well. Crop condition in the country was far below the five-year average before mid-February, but gradually returned to average afterwards. The VCIx index was also poor (0.68). According to the spatial NDVI patterns, which compare to the five-year average situation, almost the entire country underwent unfavorable conditions, with the exception of some small parts in the south. Unfavorable conditions at the time winter crops (mainly wheat) were planted resulted in a drop of the cultivated area (CALF, -17 percentage points), which is likely to lead to a reduction in winter crop production.

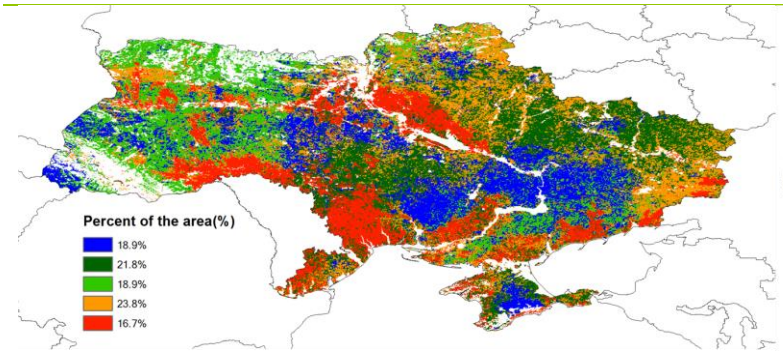
Figure 3.30. Ukraine crop condition, January-April 2017



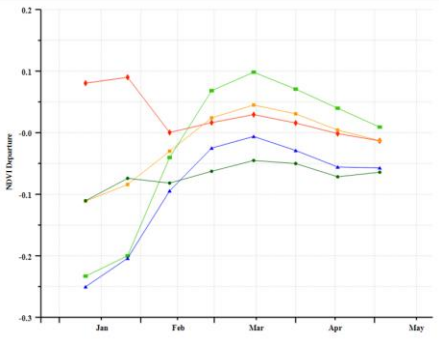
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles

[USA] United States

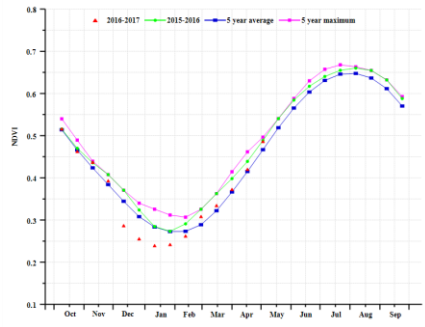
The current monitoring period includes wintering time of winter crops and the planting season of spring crops, with CropWatch agroclimatic and agronomic indicators for the period pointing at above average crop condition.

Rainfall (RAIN) was 25% above average, while temperature (TEMP) was 1.8°C above and radiation (RADPAR) a significant 6% below average due to the rainy weather. Abundant rainfall fell in major winter crop production states, with above average precipitation in Kansa (RAIN, +67%), Oklahoma (+48%), Texas (+35%), Nebraska (+28%), California (+76%), and Washington (+43%). Excessive precipitation locally resulted in floods, especially in California and Texas. Rainfall in Iowa (RAIN, +23%), Illinois (+21%), and Wisconsin (+48%) provided sufficient soil moisture for planting and growth of maize and soybeans.

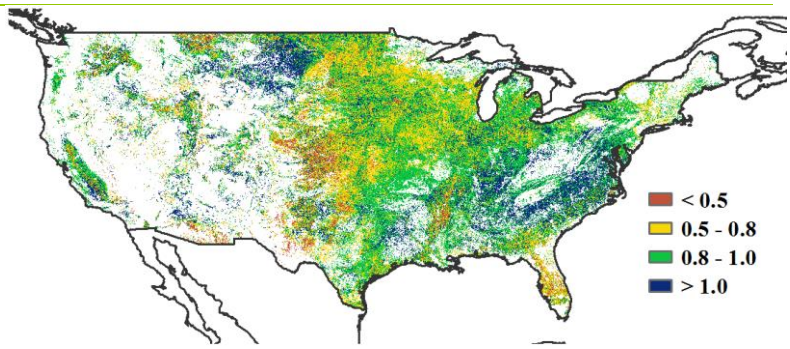
Warm and humid weather is good for the growth of winter crops, and positive NDVI departures were observed in California, Washington, Kansas, and Nebraska. Slightly below average NDVI was observed in scattered regions of northern Texas and Oklahoma, which may have been caused by floods. The above average crop condition compared to the last five years is confirmed by the maximum vegetation condition index (VCIx=0.85) and the fraction of cropped arable land (CALF), which was significantly (7%) above average.

Altogether, all CropWatch indicators point at average or above crop production for the United States. Crop production estimates by state are presented in Annex B.

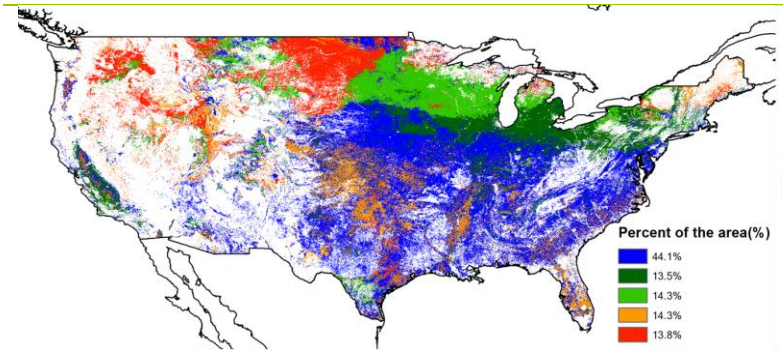
Figure 3.31. United States crop condition, January-April 2017



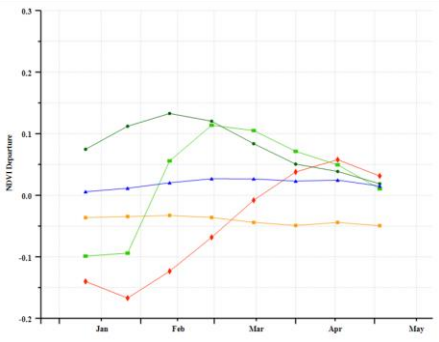
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA

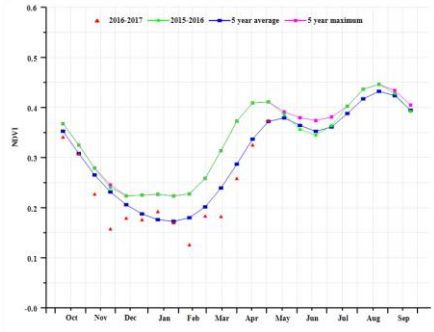


(d) NDVI profiles

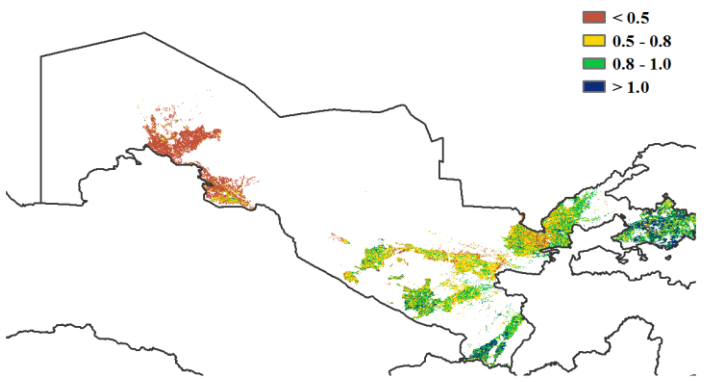
[UZB] Uzbekistan

The reporting period covers the growing stage of winter cereals and the sowing stage of coarse grains, including maize. Crop condition was generally favorable. The national average VCIx was 0.70. Among the CropWatch agroclimatic indicators, RAIN was above average (+21%), TEMP was below average by -1.2°C, and RADPAR was normal. The combination of factors resulted in a high BIOMSS (+11%) compared to the five-year average. As shown by the crop condition development graph, NDVI was below average from late January to April, and conditions were generally more favorable in the east than in the west (the cotton area). NDVI was below average in 20% of croplands, mainly in parts of Qunghirot, Chimbay, and Nuhus provinces and part of Bukhoro, Kagan, and Nawoiy provinces. NDVI was also below average in parts of three wheat growing provinces in the east: Quqon, Andijon, and Namangan, but normal or above in other regions. Altogether, winter wheat condition in the country was fair.

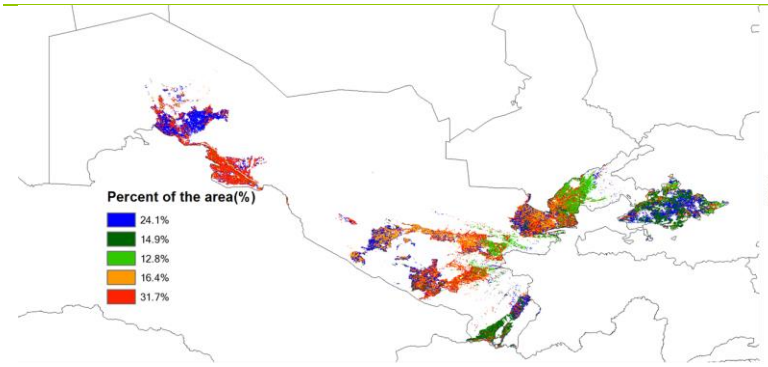
Figure 3.32. Uzbekistan crop condition, January-April 2017



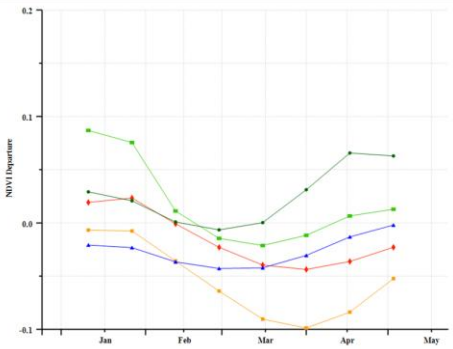
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



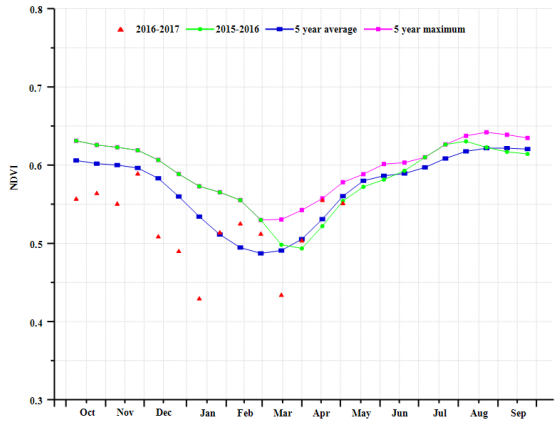
(d) NDVI profiles

[VNM] Vietnam

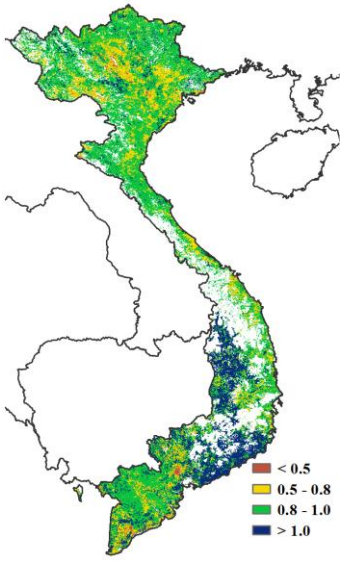
The period from January to April covers the sowing and growing periods of spring rice in both the north and south of the country, with differences due to altitude. Most of the rice cultivation regions are distributed in the northern Red River delta and in the Mekong delta in the south. The fraction of cropped arable land (CALF) increased 2.1 percentage points compared with the average of the previous five years. The national maximum vegetation condition index was also favorable (0.83).

CropWatch agroclimatic indicators show above average rainfall (RAIN, +14%), a marked decrease in radiation (RADPAR, -8%), and average temperature (TEMP, -0.1°C), leading to an increase in the biomass production potential (BIOMSS, +17%). According to the NDVI profiles linked to spatial patterns, only 6% of croplands in the country suffered from poor condition, while condition for 27% of crop lands was consistently above average, with those areas mainly distributed around the Red River delta (including BacGiang and HaiDuong) in the north and Qui Nhon in the south. Considering the favorable agroclimatic conditions, the prospects of the crops in the country are good.

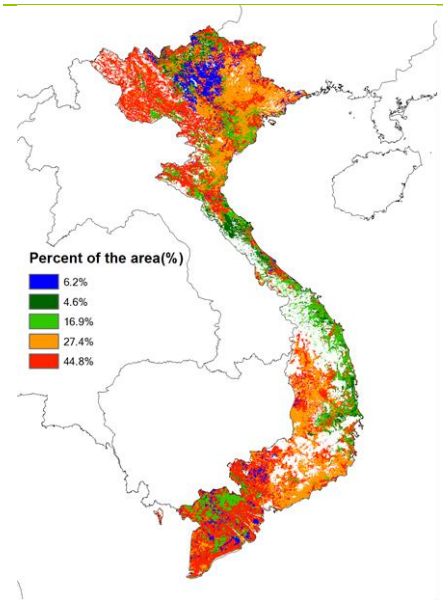
Figure 3.33. Vietnam crop condition, January-April 2017



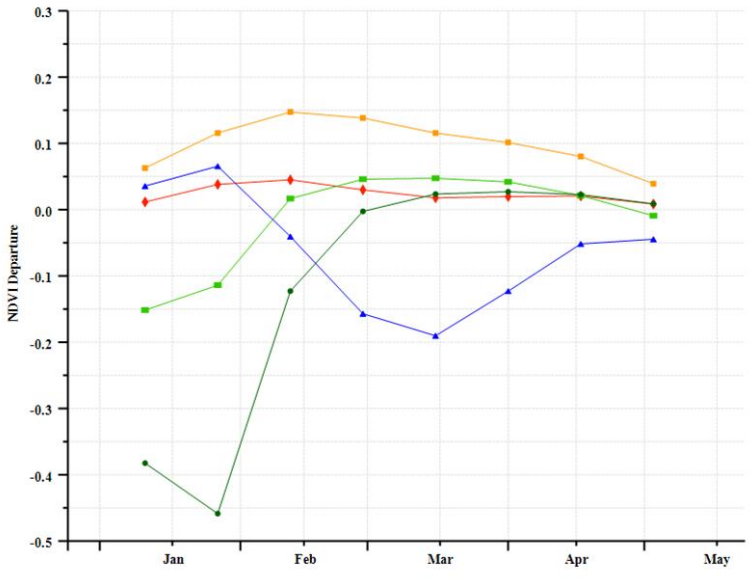
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



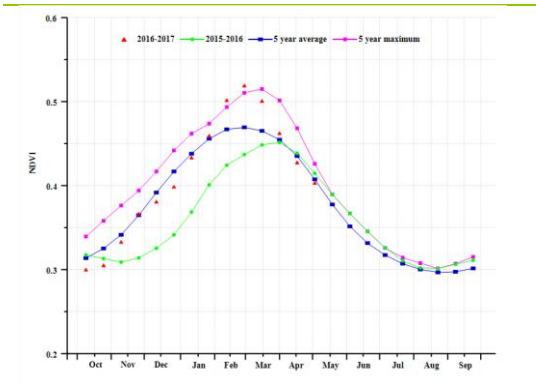
(d) NDVI profiles

[ZAF] South Africa

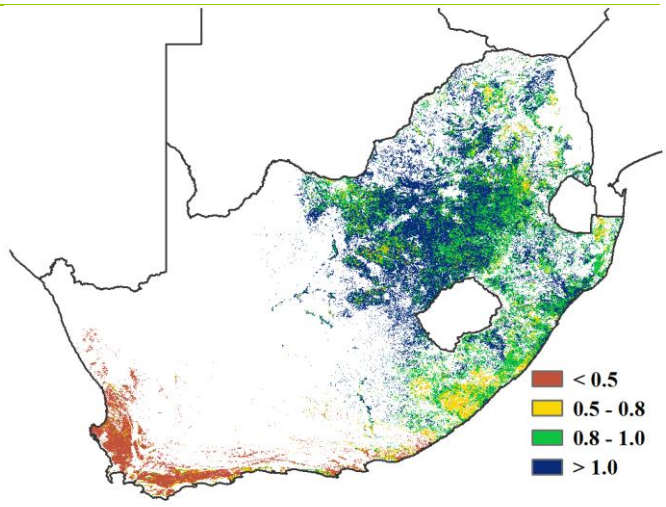
Rainfall was slightly below average in South Africa as a whole (RAIN, -11%), with close to average radiation (RADPAR) and temperature (TEMP). NDVI was below average between April and May. The maximum VCI was 0.74 for the country as a whole, but in most parts of Limpopo, Mpumalanga, North-West, Free State, Gauteng, and Kwa-Zulu Natal, good crop conditions prevailed. The Western Cape, a major citrus producer, experienced a severe dry spell (RAIN, -34%), which resulted in a 21.9% reduction in BIOMSS for that area. The sub-humid tropical areas of Kwa-Zulu Natal and Eastern Cape experienced departures in RAIN (-12.8%) and RADPAR (-1.9%), as well as a 7.8% reduction in BIOMSS. The semi-arid Steppes showed a similar trend, with RAIN, -10.7%; TEMP, -0.9%; and RADPAR, -2.6%; and a BIOMSS of 7.4% below the average for the period.

The country's overall fraction of cropped arable land (CALF) increased by 8 percentage points. Despite this increment, overall BIOMSS was 7% below average, which could be attributed to the variations in the mentioned agronomic indicators. The spatial NDVI patterns showed poor conditions in about 13.3% of cropped areas, including most parts of Kwa-Zulu Natal and Eastern Cape; maize and wheat are the major crops grown here. In contrast, about 86.7% of cropped areas showed positive NDVI departures after February. Overall, crop condition was good in the major producing parts of the country and, with increasing areas cultivated, prospects for the country are at least average.

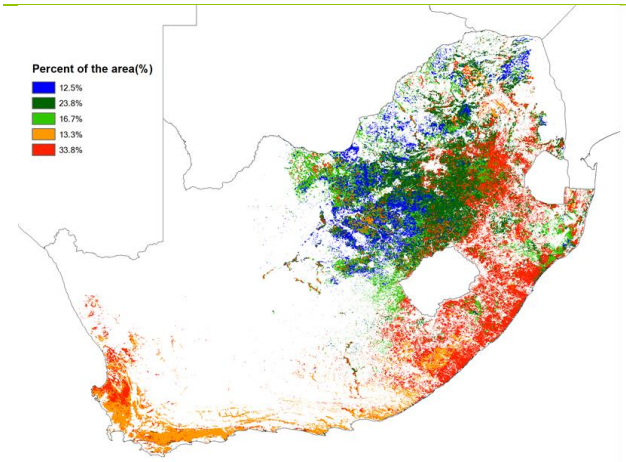
Figure 3.34. South Africa crop condition, January-April 2017



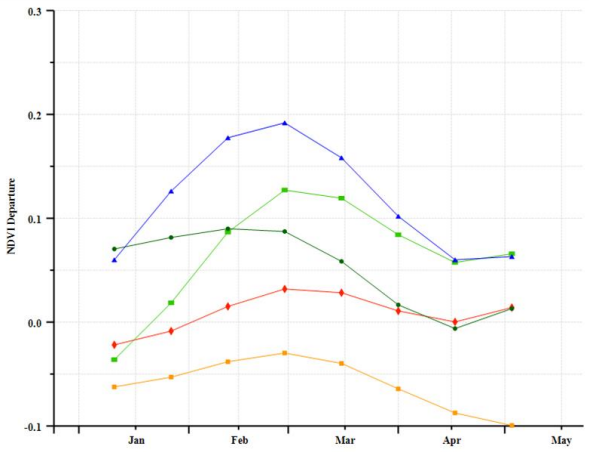
(a) Crop condition development graph based on NDVI



(b) Maximum VCI



(c) Spatial NDVI patterns compared to 5YA



(d) NDVI profiles