Chapter 4. China

After a brief overview of the agro-climatic and agronomic conditions in China over the reporting period (section 4.1), Chapter 4 presents an updated estimate of national winter crop production (4.2) and describes the situation by region, focusing on the seven most productive agro-ecological regions of the east and south: Northeast China, Inner Mongolia, Huanghuaihai, Loess region, Lower Yangtze, Southwest China, and Southern China (4.3). Section 4.4 presents the results of ongoing pests and diseases monitoring, while sections 4.5 and 4.6 describe trade prospects (import/export) of major crops (4.5) and an updated outlook for domestic prices of maize, rice, wheat and soybean (4.6). Additional information on the agro-climatic indicators for agriculturally important Chinese provinces are listed in table A.11 in Annex A.

4.1 Overview

During the current period, summer crops were growing in China, including mostly early rice, semi-late rice, spring maize, and soybean.

At the national scale, rainfall and temperature were average while RADPAR was low by 6%. The BIOMSS and CALF were respectively 5% and 2% above average. The maximum VCI was 0.94. Overall crop condition was favorable.

At the sub-national level, above-average rainfall occurred in Huanghuaihai, Inner Mongolia, Loess region and Southwest China. On the contrary, Lower Yangtze, Northeast China and Southern China experienced below-average rainfall. Temperature was average or above in all regions, except Southern China (-0.5℃), even if it fluctuated significantly. Rainfall profiles show that the variable fluctuated a lot, especially in southeast China, accounting for 7% of national cropped areas (figure 4.1). These regions experienced more than 60 mm below-average rainfall in early May, whereas 105 mm above average fell in late May. In 93% of areas in China, however, rainfall was continuously close to average over the monitoring period.

BIOMSS was 7%, 13% and 11% above average for Huanghuaihai, Inner Mongolia and the Loess region, and was close to average for Lower Yangtze, Northeast, Southern and Southwest China (departures between 0% and 2%). CALF increased by 10% and 13% in Inner Mongolia and Loess region, compared to average. In contrast, the values for this indicator in other regions were slightly below average or average. The maximum VCI values exceeded 0.90 for all regions, indicating mostly satisfactory crop condition.

As shown in figure 4.3, most cropland in China was cropped (with the exception of central Inner Mongolia and eastern Gansu) during the reporting period as it is now the the peak of the agricultural season. The Highest values (larger than 1) of maximum VCI appear in northeast and northern China (figure 4.4). The values of this indicator were generally between 0.5 and 1.0 in other regions.

Table 4.1. CropWatch agroclimatic and agronomic indicators for China, April-July 2018, departure from 5YA and 15YA

Region	Agroclimatic indicators			Agronomic indicators		
	Departure from 15YA (2002-2016)			Departure from 5YA (2012-2016)		Current
	RAIN (%)	TEMP (°C)	RADPAR (%)	BIOMSS (%)	CALF (%)	Maximum VCI
Huanghuaihai	10	0.4	-15	7	-1	0.90

Region	Agroclimatic indicators			Agronomic indicators		
	Departure from 15YA (2002-2016)			Departure from 5YA (2012-2016)		Current
	RAIN (%)	TEMP (°C)	RADPAR (%)	BIOMSS (%)	CALF (%)	Maximum VCI
Inner Mongolia	24	0.8	-8	13	10	0.93
Loess region	16	0.0	-14	11	13	1.00
Lower Yangtze	-2	0.1	-5	1	-1	0.93
Northeast China	-7	0.4	-7	1	0	0.97
Southern China	-6	-0.5	-2	0	-2	0.93
Southwest China	3	0.0	-4	2	0	0.94

Figure 4.1. China spatial distribution of rainfall profiles, April-July 2018

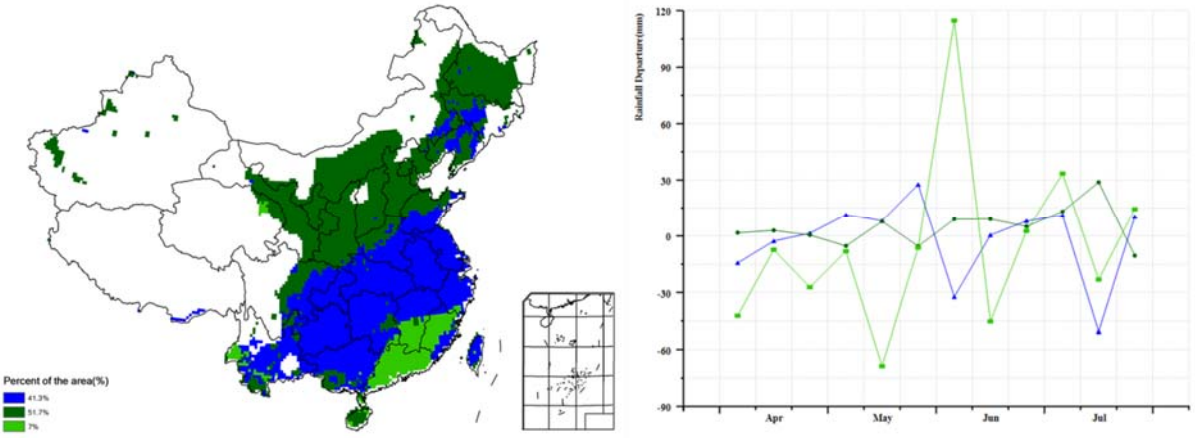


Figure 4.2. China spatial distribution of temperature profiles, April-July 2018

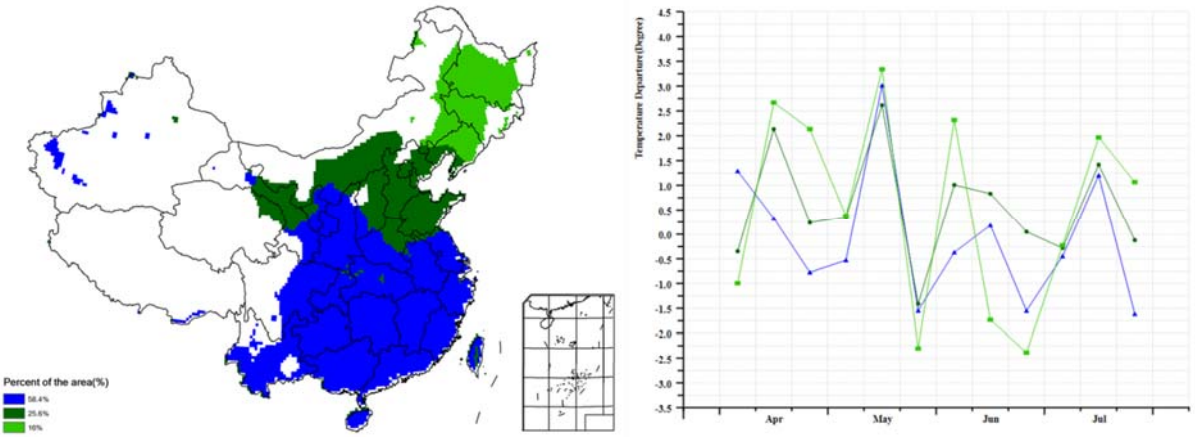


Figure 4.3. China cropped and uncropped arable land, by pixel, April-July 2018

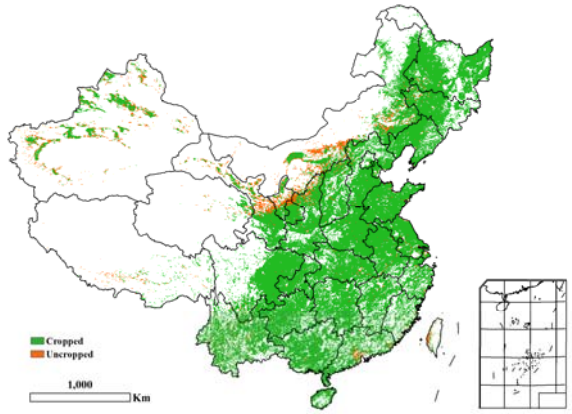


Figure 4.4. China maximum Vegetation Condition Index (VCIx), by pixel, April-July 2018

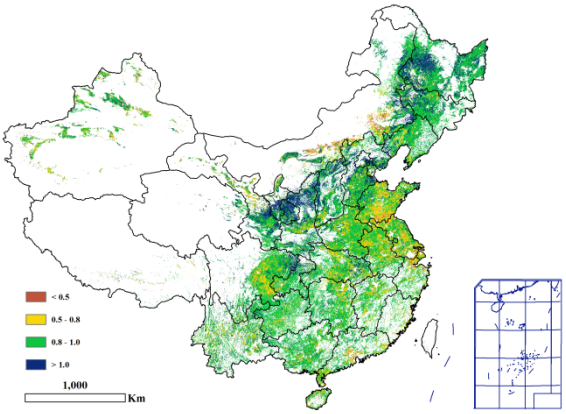


Figure 4.5. China minimum Vegetation Health Index (VHIn), by pixel, April-July 2018

4.2 China crop production

China 2017-2018 total winter crops production (among which wheat accounts for more than 91%) is revised at 126 million tons, the same level as 2016-2017. The revised production is 347 ktons up from previous forecast, mainly contributed by the 1.6% increase of yield thanks to the adequate climatic conditions. Sufficient rainfall during grain filling stage in Henan, the leading winter crops producing province, benefited winter crops and helped crops recover from the winter drought. Average yield was estimated to be 0.6% up from 2016-2017. Shandong, the second winter crops producing province, also received high rainfall in mid-May which narrowed the yield decrease from 5.8% (April forecast) to 4.3% (current estimate). Table 4.2 provides detailed information for each province.

Table 4.2. China 2017-18 winter crops production (tons) and variation (%) from 2016-17, by province

	production 2017 (thousand tons)	2018			
		Area variation (%)	Yield variation (%)	Production variation (%)	Production (thousand tons)
Hebei	1228.9	-1.2	4.2	3.0	1265.5
Shanxi	225.1	2.7	4.6	7.5	241.9
Jiangsu	999.6	-1.2	3.0	1.8	1017.1
Anhui	1166.2	-1.1	2.6	1.5	1183.9
Shandong	2489.8	-0.6	-4.3	-4.9	2368.7
Henan	2629.3	-0.9	0.6	-0.3	2622.4
Hubei	575.6	-0.7	0.7	0.0	575.5

	production 2017 (thousand tons)	2018			
		Area variation (%)	Yield variation (%)	Production variation (%)	Production (thousand tons)
Chongqing	2289	-0.1	1.4	1.3	2319
Sichuan	5513	-1.5	1.4	-0.1	5507
Shaanxi	3889	5.4	4.4	10.0	4279
Gansu	2999	0.8	6.2	7.1	3211
Sub total	107211	-	-	0.8	108068
Other provinces	19064	-	-	-4.7	18160
National total	**126275**	**-1.6**	**1.6**	**0.0**	**126228**

Maize

Even if the planted area of maize continues to decrease, overall favorable conditions result in 1.5% above 2017's average yield, especially in Northeast China and the Loess Region where sufficient rainfall benefited maize development and grain filling. The most significant increase of maize production was observed in the semi-arid Loess Region and Inner Mongolia, including Gansu (+9%), Inner Mongolia (+4%), Shaanxi (9%), and Shanxi (7%). Extreme weather conditions (typhoons, strong wind, flooding and drought) negatively impacted the summer crops development in eastern coastal provinces (Jiangsu, Anhui, Shandong) and south western China (Yunnan, Guizhou, Sichuan and Chongqing).

Rice

CropWatch forecasts the overall rice production for China at 196.4 million tons, 2% below 2017 mainly due to the decrease of planted area. Since most of rice cultivation relies on irrigation, the inter-annual variation of production has been limited for the past ten years. Two percent drop of rice production resulted in 2018 ranking as the lowest production since 2009. Both early rice and late rice production decreased by 1% due to the decreased yield for early rice and both reduced planted area and yield for late rice. While single rice production was 3% below 2017 values because both yield and planted area dropped compared with 2017. Semi-late rice production in Anhui, Chongqing, and Guizhou fell by 7%, 6% and 5%, respectively. A large drop for late rice production was also forecast for Anhui, Guangxi and Hubei.

Wheat

Wheat production is revised up to 121.5 million tons, equivalent to 2017's bumper production. Although the wheat planted area shrank by 1.6%, favorable weather conditions between late April and the harvest of winter crops in most of semi-arid areas in the Loess Region led to very good output. Among the provinces, only two spring wheat producing provinces (Heilongjiang and Inner Mongolia) and two winter wheat producing provinces (Shandong and Sichuan) outputs less grain than during 2017. The major reason is the lower planted area for spring wheat and lower yield for winter wheat. In all other provinces yield at least equaled 2017 values.

Soybean

The amplitude of inter-annual production variation for soybean is generally larger than for other three crops mainly due to the newly released policies which encourage farmers to keep increasing soybean cultivation. The most significant increase in soybean production was observed in Inner Mongolia and Jilin, with 13% and 11% increase compared with 2017. Both yield and planted area are up from the previous year. The leading soybean producing province, Heilongjiang, is forecasted to produce the same amount of

soybean as last year's. The soybean area decreased by 2.0% because of the low income from soybean cultivation and the late release of new policy (after sowing in major producing regions). Favorable conditions benefited soybean development and yield is expected to increase by 2.0%, offsetting the impact of area decrease. Reduced output in Anhui (-4%) and Jiangsu (-8%) is mainly due to the unfavorable conditions brought about by several typhoon since May.

All summer crops

CropWatch forecasts the total 2018 output of summer crops (including maize, single rice, late rice, spring wheat, soybean, minor cereals, and tubers) at 417.0 million tons, a 0.4% drop from 2017 or 1748 thousand tons in production decrease. The total annual crop production is estimated at 577.3 million tons, down 0.9% from 2017 (2460 thousand tons decrease).

As late rice is still at an early growing stage, and maize and single rice are at at grain filling in August, CropWatch will further revise the production for each crop type as well as total production in the next bulletin.

A caveat, however: depending on weather conditions during the grain-filling stage, production of winter wheat and total winter crop output could be revised up or down in the final CropWatch estimate, which will be published in the next bulletin.

Table 4.3, China 2018 production of maize, rice, wheat, and soybean, and percentage change from 2017, by province

	Maize		Rice		Wheat		Soybean	
	2018	Δ(%)	2018	Δ(%)	2018	Δ(%)	2018	Δ(%)
Anhui	3390	-4	16016	-6.2	10736	5	1021	-4
Chongqing	2001	-4	4466	-5.9	1092	0		
Fujian			2742	-2.0				
Gansu	5388	9			2728	7		
Guangdong			10925	-1.2				
Guangxi			10639	-4.8				
Guizhou	4926	-1	5175	-4.7				
Hebei	18453	3			10956	3	203	8
Heilongjiang	31197	2	21404	2.2	430	-9	4731	0
Henan	15579	0	3829	-1.5	25599	0	777	3
Hubei			16008	0.6	4308	1		
Hunan			24641	0.0				
Inner Mongolia	15745	4			2038	-4	1216	13
Jiangsu	2092	-5	16796	-1.9	9816	3	714	-8
Jiangxi			17869	2.4				
Jilin	23439	-1	5664	-0.3			770	11
Liaoning	15333	0	4359	-0.4			396	-3
Ningxia	1703	0	524	0.2	831	6		
Shaanxi	3765	9	1004	-1.6	4165	8		
Shandong	18937	-2			21337	-4	709	1
Shanxi	8978	7			2421	7	174	9
Sichuan	6916	-1	14357	-1.3	4612	-1		
Xinjiang	6530	-3						
Yunnan	5941	-3	5528	-1.5				
Zhejiang			6392	-1.6				
Sub total	190312	1	188341	-1.1	101071	1	10710	2
Other provinces*	5200	3	8065	-20.4	20457	-4	3493	9
China*	**195512**	**1**	**196406**	**-2.1**	**121528**	**0**	**14203**	**3**

Table 4.4. China 2018 early rice, single rice, and late rice production and percentage difference from 2017, by province

	Early Rice		Single Rice		Late Rice	
	2018	Δ (%)	2018	Δ (%)	2018	Δ (%)
Anhui	1824	0.1	12601	-6.6	1591	-9.1
Chongqing			4466	-5.9		
Fujian	1606	-3.7			1137	0.6
Gansu	5178	-1.4			5747	-1.0
Guangdong	5153	-4.0			5487	-5.6
Guangxi			5175	-4.7		
Guizhou			21404	2.2		
Hebei			3829	-1.5		
Heilongjiang	2323	-0.7	11094	3.4	2590	-8.7
Henan	8025	-2.4	8358	2.6	8258	-0.2
Hubei			16796	-1.9		
Hunan	7712	1.6	2891	2.6	7267	3.1
Inner Mongolia			5664	-0.3		
Jiangsu			4359	-0.4		
Jiangxi			524	0.2		
Jilin			1004	-1.6		
Liaoning			14357	-1.3		
Ningxia			5528	-1.5		
Shaanxi	820	-0.3	4710	-2.0	862	-0.8
Shandong	32641	-1.3	122762	-0.9	32938	-1.8
Shanxi	**34046**	**-1.2**	**128258**	**-2.5**	**34102**	**-1.4**

4.3 Regional analysis

Figures 4.6 through 4.12 present crop condition information for each of China's seven agricultural regions. The provided information is as follows: (a) Phenology of major crops; (b) Crop condition development graph based on NDVI, comparing the current season up to July 2018 to the previous season, to the five-year average (5YA), and to the five-year maximum; (c) Spatial NDVI patterns for April - July 2018 (compared to the (5YA)); (d) NDVI profiles associated with the spatial patterns under (c); (e) maximum VCI (over arable land mask); and (f) biomass for April - July 2018. Additional information about agro-climatic indicators and BIOMSS for China is provided in Annex A.

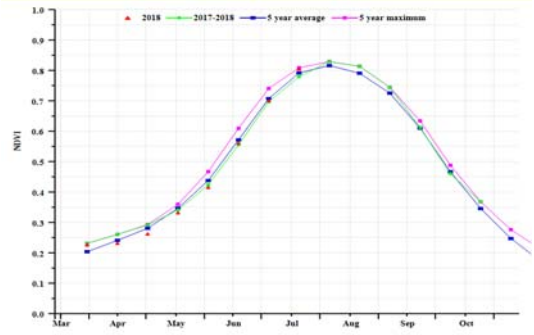
Northeast region

For the Northeast region, the current monitoring period mostly covers the sowing and cultivation of spring maize. Single-season rice is sowed in part of the region from April on, which is similar to the growing season of soybean. Overall condition of crops was at the five-year average before June, but further improved since then as a result of favorable weather.

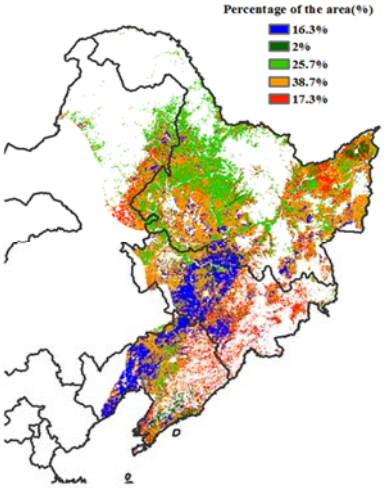
According to the CropWatch agro-climatic and agronomic indicators, rainfall was +9% compared to average in Heilongjiang, while a 26% drop was observed for Liaoning and -17% in Jilin respectively. Three provinces experienced a slight increase in temperature (+0.4°C for the region) and decreased radiation (RADPAR -7%). Local shortage of water supply and average meteorological conditions led to an overall +1% decrease of biomass (BIOMSS) for the region, with a more marked reduction in Liaoning (BIOMSS -12%).

16.3% of arable land near the east slope of south Great Khingan mountains (west of Jilin and Liaoning province) suffered unsatisfactory crop condition, which is confirmed by the biomass map but disagrees with the VCIx which is well over 0.8; future weather condition the final outcome of the season. VCIx values exceeded 1.0 in western Heilongjiang where soybean and maize are major crops, indicating favorable yield outlook. Rice conditions in north-eastern of Heilongjiang remains average. Overall, crop prospects in North-east China remain average.

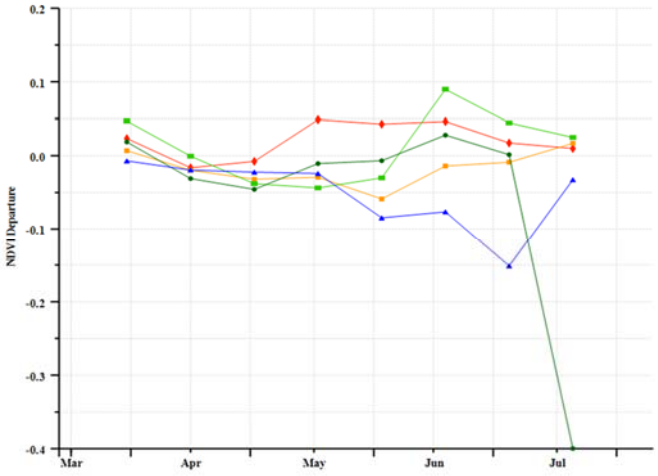
Figure 4.6. Crop condition China Northeast region, April-July 2018



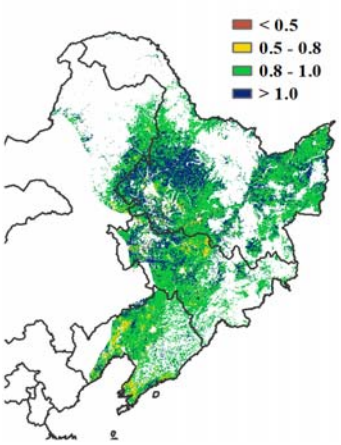
(a) Crop condition development graph based on NDVI



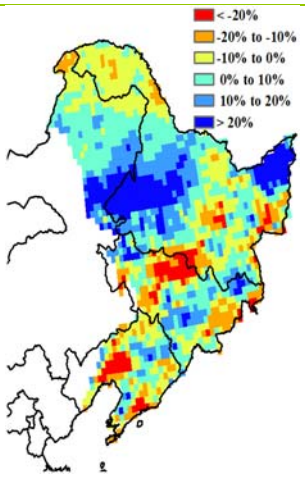
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



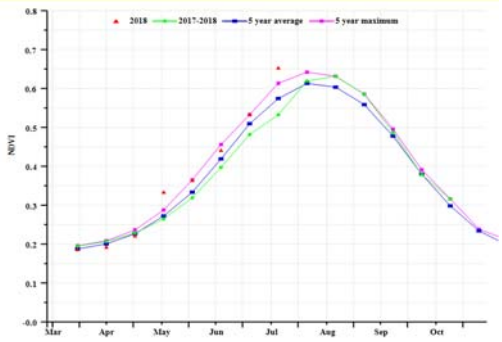
(e) Biomass

Inner Mongolia

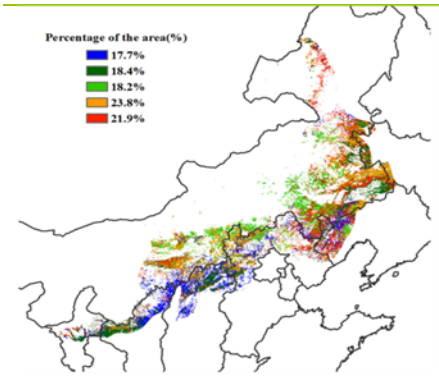
The condition of spring crops was unfavorable in Inner Mongolia over the reporting period. Among the CropWatch agroclimatic indicators, RAIN was above average (+24%) and TEMP was about average (+0.8°C), while a decrease was recorded for RADPAR (-8%), resulting in increased potential biomass production index BIOMSS (+13%). The spatial and temporal distribution for these indicators, however, was very uneven. Conditions were unfavorable for the sowing and early growth of spring crops, as illustrated in the crop development graph (in April). Later crop condition improved to higher than average in May. There is, however 18.2% of the cropped areas which display consistently below average NDVI conditions especially in east and north-east Inner Mongolia, north Hebei, along with some areas in Shaanxi and Liaoning. This condition is confirmed by VCIx values below 0.5. The biomass accumulation potential (BIOMSS) is also poor in those areas.

Overall, however, Inner Mongolia saw the fraction of cropped arable land (CALF) increase by 10% and VCIx was 0.93 on average: crop condition was favorable for this area of China from April to July. The final outcome of the season will depend on August and later weather.

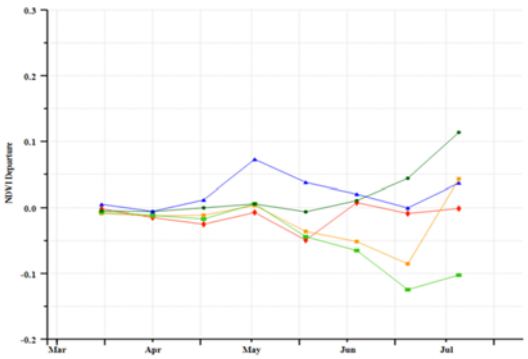
Figure 4.7. Crop condition China Inner Mongolia, April-July 2018



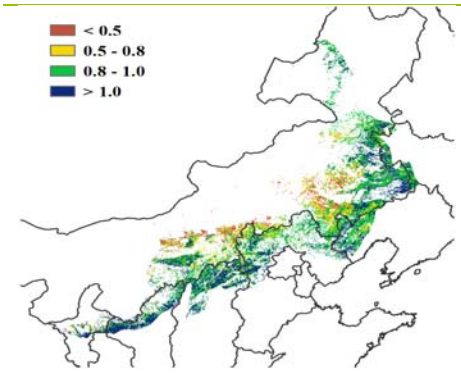
(a) Crop condition development graph based on NDVI



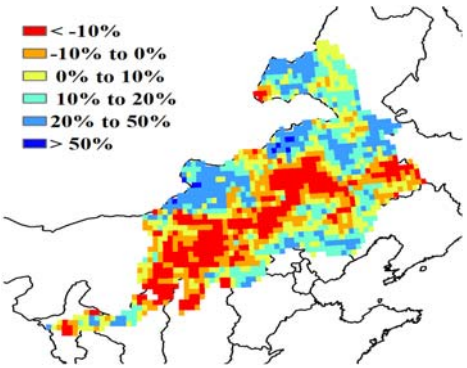
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



(e) Biomass

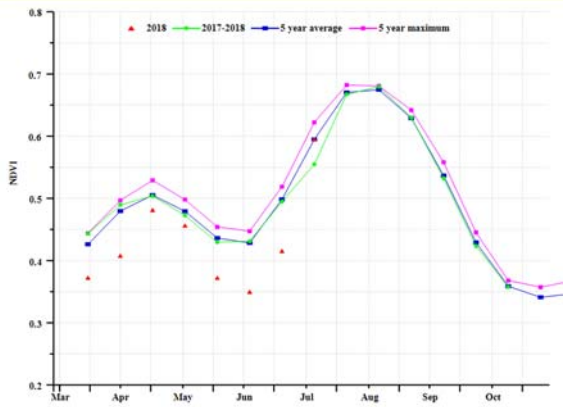
Huanghuaihai

Crop condition in Huanghuaihai was not favorable over the current monitoring period. The main crop in the region during the period is winter wheat, which was sowed in early October last year, in full development since April and with harvests starting in early June. And summer maize is planted after the harvesting of winter wheat. According to the crop condition development graph based on NDVI, crop condition was almost constantly below the 5YA during the entire period, especially in early April, June and early July, and recovered to average in late July. Poor condition of winter wheat may be related to less radiation, which dropped 15% compared to 5YA, while precipitation and temperature were 10% and 0.4℃ above. In addition, low values in April and June may be due to the sowing and growth of some other crops. The fraction of cropped arable land (CALF) decreased by 1%. Though the crops performed poorly, sufficient precipitation and warmer weather led to a 7% increase in biomass potential.

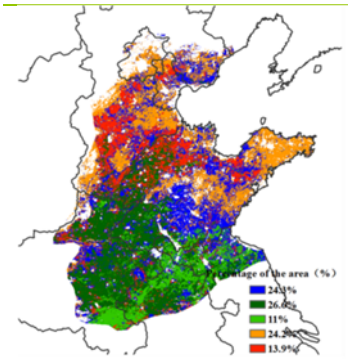
The spatial distribution of crop condition follows patterns that are similar to those of NDVI profiles. Several regions in southern Hebei and eastern Shandong had above-average condition in May and July. Very low values occurred in the south after May, confirmed by VCIx map and biomass departure map.

NDVI values over the whole region improved late in July and the regional average VCIx was 0.90 at the end of July. There is currently no specific concern about Huanghuaihai summer crops.

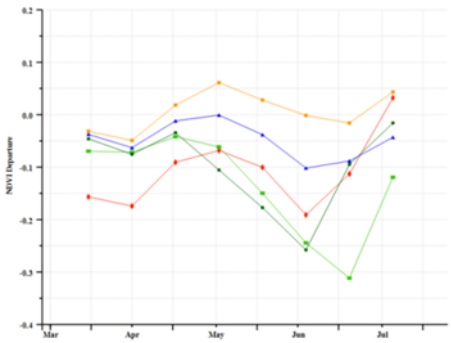
Figure 4.8. Crop condition China Huanghuaihai, April-July 2018



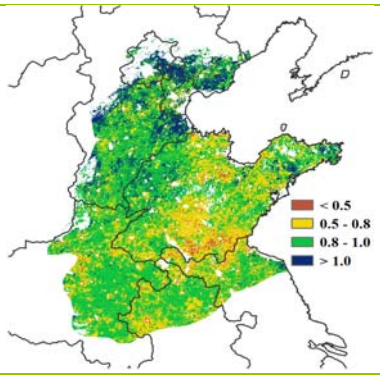
(a) Crop condition development graph based on NDVI



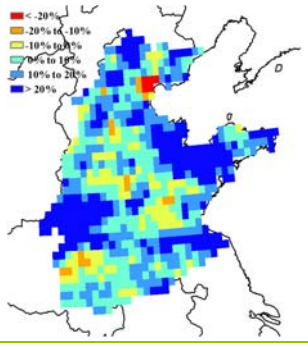
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI

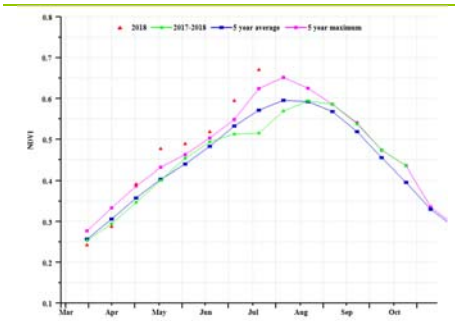


(e) Biomass

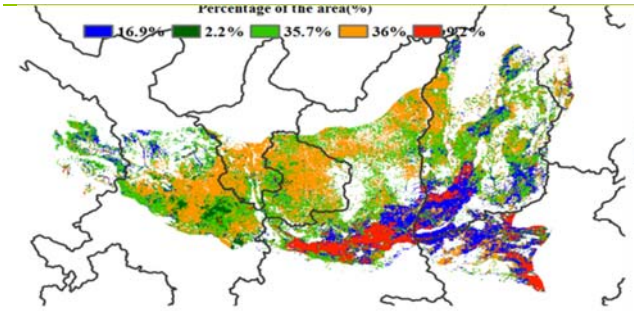
Loess region

In the Loess region, winter wheat was harvested from early to middle June, while summer maize had been planted gradually from late May to late June. Compared to the average, rainfall (RAIN) was 16% above average, radiation (RADPAR) dropped by 14%, and TEMP was about average. The potential biomass (BIOMASS) was 11% above the five-year average as a result of ample rainfall. Crop condition was mostly above the five-year average and last year's level, except during early to middle April. The VCIx for the Loess region is 1.00, generally showing very good crop condition. The spatial NDVI clusters and profiles indicate that more than 90% of the areas had better crop condition than the average during the monitoring period. In general, crop condition was favorable except in some parts of central Gansu. The Cropped Arable Land Fraction (CALF) increased 13%, resulting in a favorable crop production outlook for the region, which was also confirmed by figure 4.3.

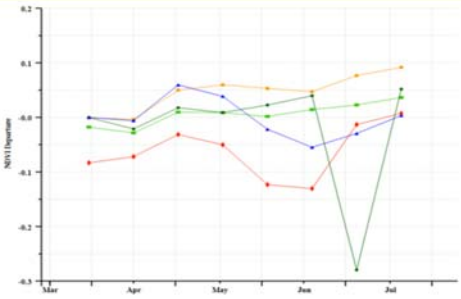
Figure 4.9. Crop condition China Loess region, April-July, 2018



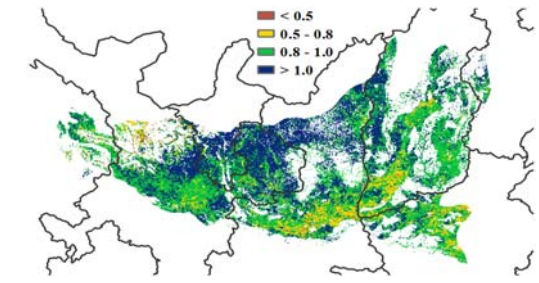
(a) Crop condition development graph based on NDVI



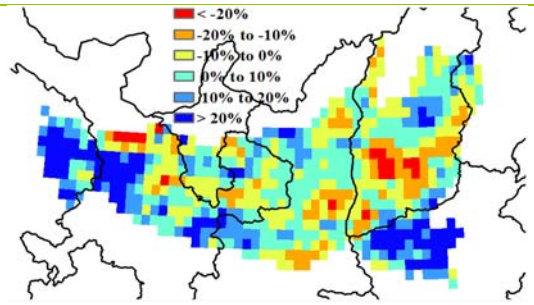
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



(e) Biomass

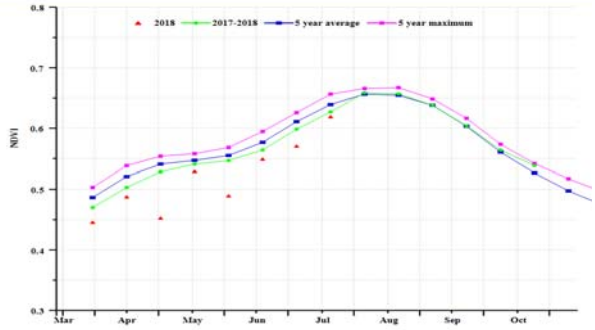
Lower Yangtze region

During the current monitoring period, the winter wheat harvest was completed in the north of the Lower Yangtze region, including the south of Henan, Jiangsu, and Anhui provinces. The semi-late and late rice crops are still growing in the south and the center of the region (including in Fujian, Jiangxi, Hunan, and Hubei provinces), while early rice has been harvested. Crop condition was below but close to average according to agroclimatic indicators. Accumulated rainfall and radiation were close to average (RAIN -2%, RADPAR -1%), but with great spatial varibility. Temperature was roughly average (+0.1℃). Alltogether, average agro-climatic conditions resulted in average biomass production potential (BIOSMSS, +1%).

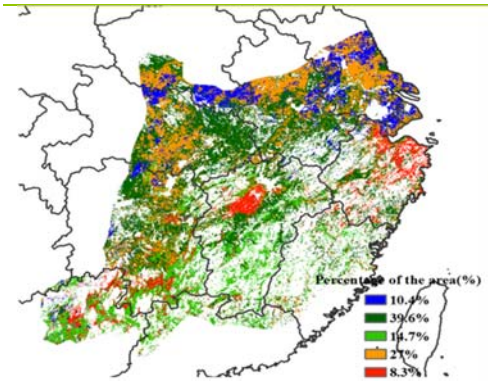
According to the NDVI development graph, crop condition was below average and last year, especially in the middle of April and May. As shown in the BIOMSS map, the biomass production potential was relatively favorable (+20%) in the north of the region, including the middle of Anhui and Jiangsu and south of Henan province. The south and middle north of the region, however, suffered a significant decrease in the BIOMSS potential, which coincides with the situation depicted by the VCIx map.

Finally, according to NDVI profiles, crop condition was close but slightly below average in 39.6% of cropped areas, mostly located in the middle of Anhui, West of Hubei and Hunan and middle of Jiangxi province. Considering the favorable VCIx value of 0.93, crop production is anticipated to be below but close to average.

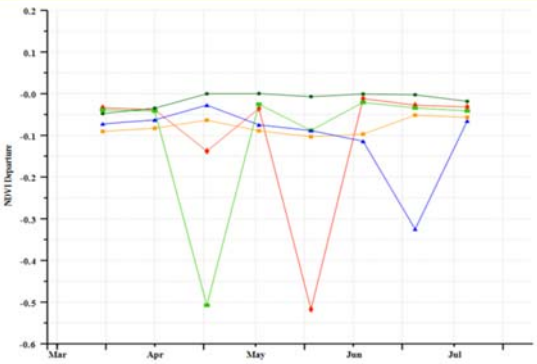
Figure 4.10. Crop condition Lower Yangtze region, April - July 2018



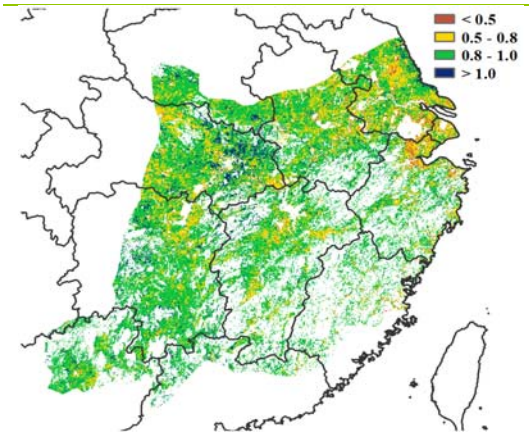
(a) Crop condition development graph based on NDVI



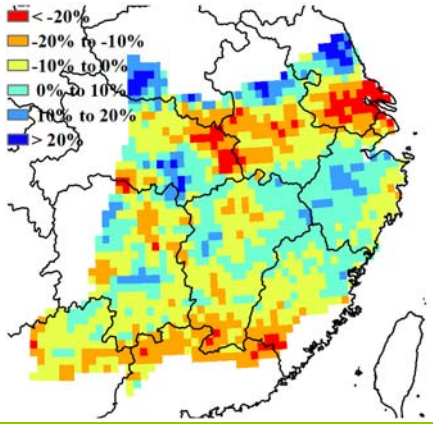
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



(e) Biomass

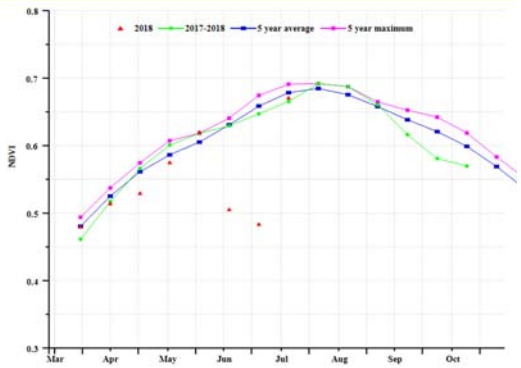
Southwest China

The reporting period covers the flowering and maturity of winter wheat in southwestern China. Summer crops including semi-late rice, late rice and maize are still at growing stage. According to the regional NDVI profile, overall crop condition was close to average. It exceeded the average level in early June and reached the maximum of five years.

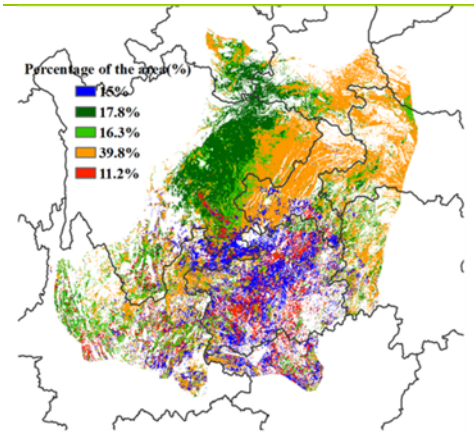
According to the agroclimatic and agronomic indices, compared to average, rainfall was just above (RAIN +3%), sunshine was low (RADPAR -4%) while the temperature was average. Compared to the average of the past 5 years, the cropped arable land fraction remained stable and the potential biomass production index was very slightly above (BIOMSS +2%). The maximum VCI was 0.94 indicating the crop growth status is close to the best level in the past ten years.

As shown by NDVI clusters and maps, crop condition in the region was close to average throughout the monitoring period except for late June and early July in western Sichuan Plain and Guizhou; both areas experienced very low NDVI but with different reason: the former one is due to abundant precipitation (RAIN +32%) early in the season, while the latter one is suffering from water shortage. Considering the average condition before June and during late July, the short period of abnormal weather had limited impacts on crops. Altogether, the situation in the region is average but still deserves close monitoring during late growing stage.

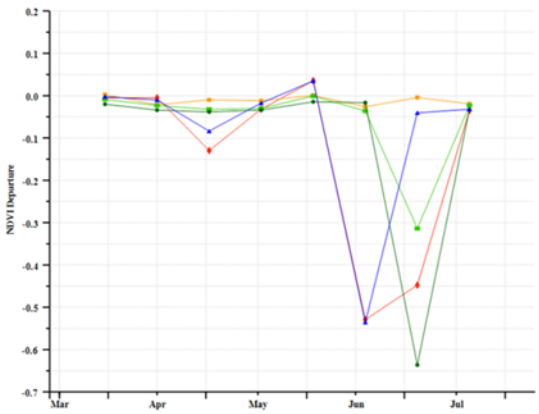
Figure 4.11. Crop condition Southwest China region, April - July 2018



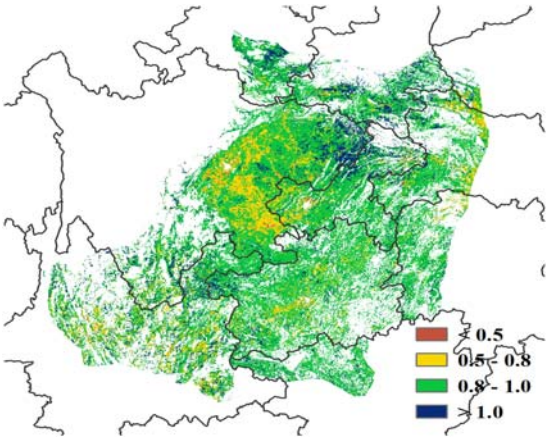
(a) Crop condition development graph based on NDVI



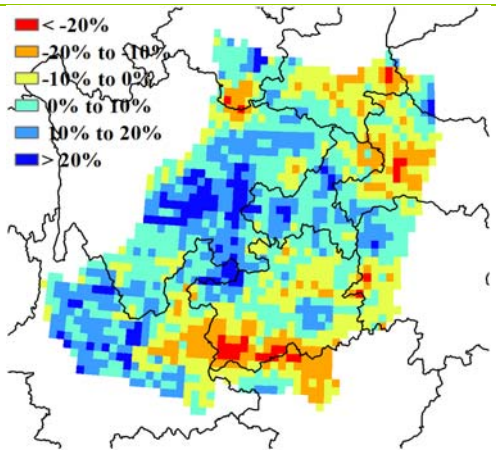
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



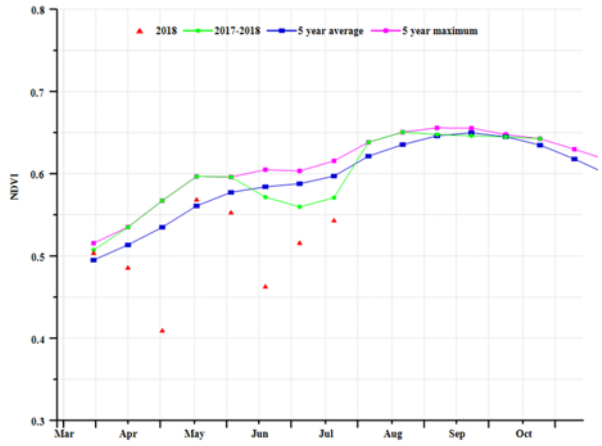
(e) Biomass

Southern China

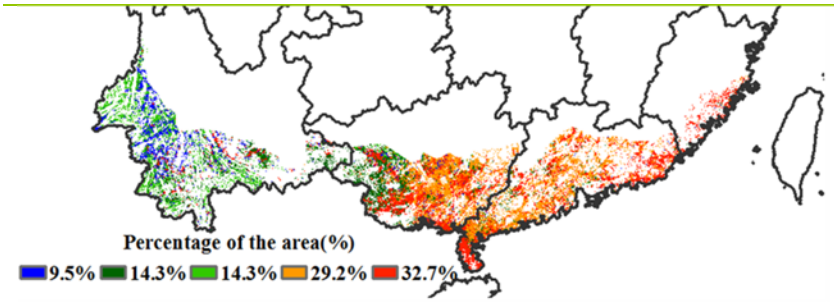
As shown by the spatial NDVI patterns and profiles map, CropWatch estimates that the crop condition was below average in Southern China. The rainfall was moderately below average, and so were temperature and radiation (RAIN -6%, TEMP -0.5℃, RADPAR -2%). As a result of the slightly below average climate conditions, the biomass was also close to average, while the cropped arable land fraction (CALF) decreased by 2%.

During this reporting period, Guangdong and Guangxi suffered deficits of rainfall: -14% and -10%, respectively. In these two provinces, the temperature was below average（Guangdong-0.2℃, Guangxi -0.5℃）, and the shortage of rainfall was unfavorable for crops and biomass accumulation. In Yunnan, the rainfall, temperature, and radiation were below average (RAIN -2%, TEMP -0.7℃, RADPAR -3%). Considering that Yunnan province is frequently impacted by drought, the below average conditions during the monitoring period will hamper the crop development.

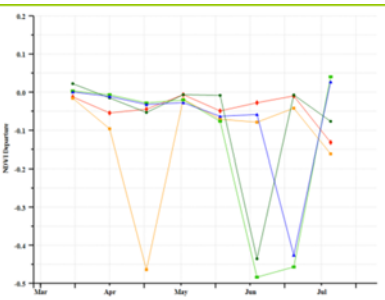
Figure 4.12. Crop condition Southern China region, April -July 2018.



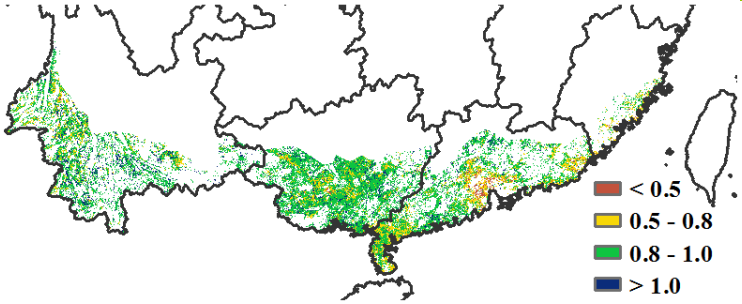
(a) Crop condition development graph based on NDVI



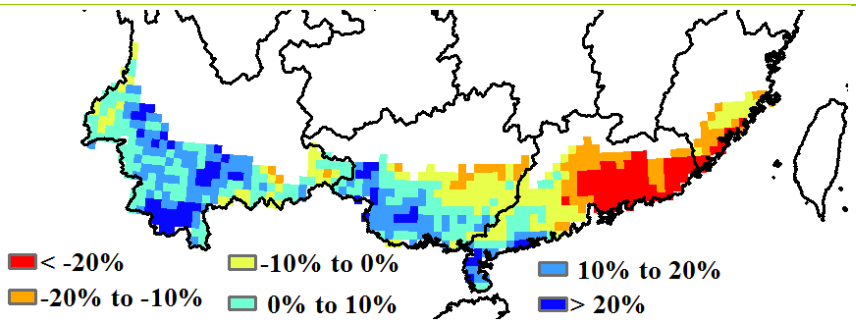
(b) Spatial NDVI patterns compared to 5YA



(c) NDVI profiles



(d) Maximum VCI



(e) Biomass

4.4 Pest and diseases monitoring

The impact of pests and diseases was moderate during early August 2018 in the main rice regions of China. During July to August in 2018, the temperature was mostly higher than average and there were abundant rains in some parts of southwest China, northeast China, and southern China. They provided appropriate conditions for rice Plant hopper and rice Leaf roller migration, and rice Sheath blight dispersal.

Rice plant hopper

The distribution of rice plant hopper during early August 2018 is shown in Figure 4.13 and Table4.5. The total area affected by the plant hopper reached 4.7 million hectares, with the pest occurring severely in northeastern Sichuan, central Jiangsu, and central Hunan, and moderately in western Heilongjiang, southern Henan, eastern Anhui, and western Jiangxi.

Figure 4.13. Distribution of rice plant hopper in China (early August 2018)

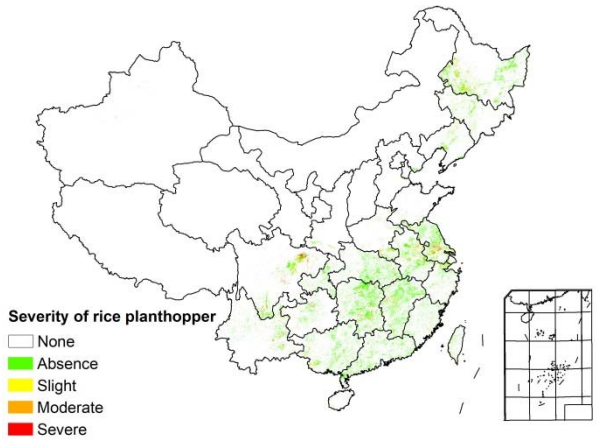


Table4.5. Statistics of rice planthopper in China (early August 2018)

Region	Occurrence ratio / %			
	Absence	Slight	Moderate	Severe
Huanghuaihai	77	13	6	4
Inner Mongolia	75	18	5	2
Loess region	76	17	5	2
Lower Yangtze	87	6	4	3
Northeast China	75	17	5	3
Southern China	92	4	2	2
Southwest China	82	5	7	6

Rice leaf roller

Rice leaf roller (Figure 4.14 and Table4.6) damaged around 3.4 million hectares, with the pest severely occurring in northeastern Sichuan, central Jiangsu, eastern Anhui, central Hunan, and northern Guizhou. Moderate occurrence is estimated for western Heilongjiang, southern Henan, and western Jiangxi.

Figure 4.14. Distribution of rice leaf roller in China (early August 2018)

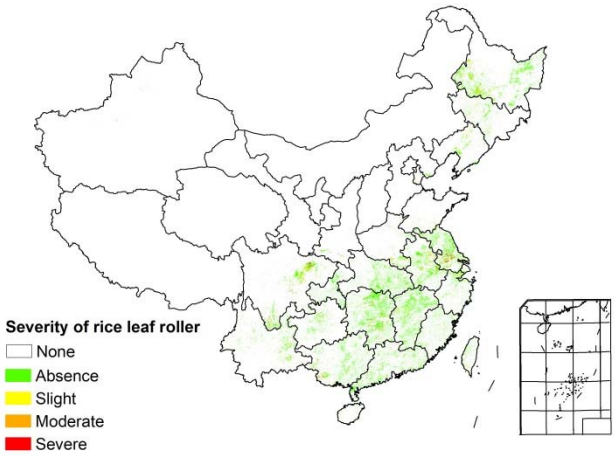


Table 4.6. Statistics of rice leaf roller in China (early August 2018)

Region	Occurrence ratio/%			
	Absence	Slight	Moderate	Severe
Huanghuaihai	83	8	5	4
Inner Mongolia	82	13	3	2
Loess region	83	12	3	2
Lower Yangtze	91	4	3	2
Northeast China	82	12	4	2
Southern China	94	3	2	1
Southwest China	87	7	4	2

Rice sheath blight

Rice sheath blight (Figure 4.15 and Table4.7) damaged around 4.9 million hectares, with the disease occurring mainly in eastern Sichuan, central Jiangsu, eastern Anhui, and western Guangxi. Moderate impact vis assumed for western Heilongjiang, eastern Hunan, and western Jiangxi.

Figure 4.15.. Distribution of rice sheath blight in China (early August 2018)

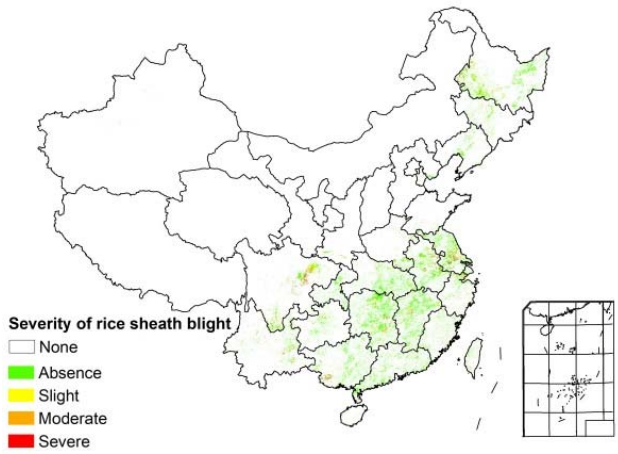


Table 4.7. Statistics of rice sheath blight in China (early August 2018)

Region	Occurrence ratio/%			
	Absence	Slight	Moderate	Severe
Huanghuaihai	78	9	8	5
Inner Mongolia	78	16	4	2
Loess region	79	15	4	2
Lower Yangtze	86	5	5	4
Northeast China	78	16	4	2
Southern China	90	4	3	3
Southwest China	79	11	6	4

The maize suffered moderately from pest and disease attacks during early August in the main production areas. Heavy rains and high humidity in north China, northeast China, and Huanghuaihai were conducive to armyworm reproduction and sheath blight dispersal.

Maize armyworm

The distribution of maize armyworm in early August 2018 is shown in Figure 4.16 and Table 4.8. The total area affected with armyworms reached 2.0 million hectares, with the pest mainly occurred in most of Jilin, central Liaoning, central Hebei, most of Henan, and western Shandong.

Figure 4.16 Distribution of maize armyworm in China (early August 2018)

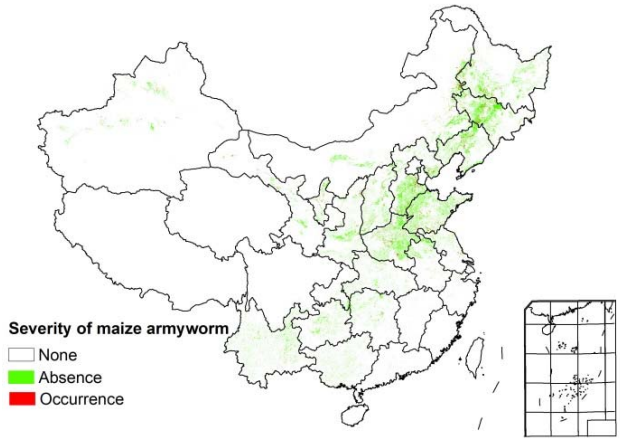


Table 4.8. Statistics of maize armyworm in China (early August 2018)

Region	Occurrence ratio/%	
	Absence	Occurrence
Huanghuaihai	93	7
Inner Mongolia	93	7
Loess region	93	7
Lower Yangtze	96	4
Northeast China	93	7
Southern China	97	3
Southwest China	95	5

Maize sheath blight

Maize sheath blight damaged around 1.0 million hectares, with the disease mainly occurring in central Jilin, central Hebei, western Shandong, eastern Henan, and central Shaanxi.

Figure 4.17. Distribution of maize sheath blight in China (early August 2018)

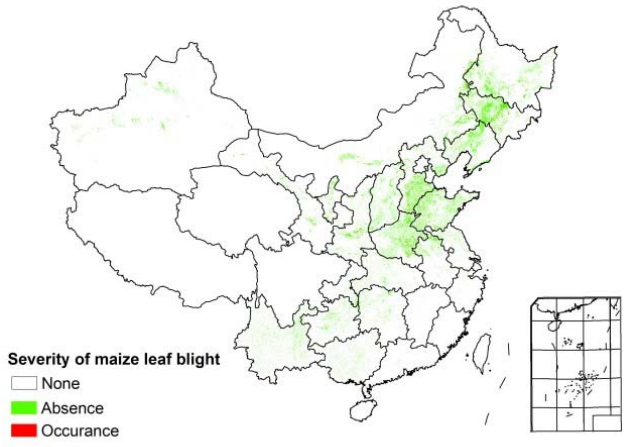


Table 4.9. Statistics of maize sheath blight in China (early August 2018)

Region	Occurrence ratio/%	
	Absence	Occurrence
Huanghuaihai	97	3
Inner Mongolia	97	3
Loess region	97	3
Lower Yangtze	98	2
Northeast China	97	3
Southern China	97	3
Southwest China	97	3

4.5 Major crops trade prospects

Imported and exported grains in the first quarter of 2018

Rice

In the first quarter, the total import of rice in China was 0.7752 million tons, a decrease of 11.0% compared to the previous year. The imported rice mainly stems from Vietnam, Thailand, and Pakistan, respectively accounting for 46.9%, 32.3%, and 12.3% of imports. The expenditure for rice import was US$426 million. Total rice exports over the period were 337,100 tons, mainly exported to the Republic of Korea, Côte d'Ivoire, and Mozambique (24.3%, 14.2%, and 12.8%, respectively). The value of the export was US$182 million.

Wheat

Chinese wheat imports in the first quarter of 2018 totaled 0.6417 million tons, down by 40.6% year-on-year. The main sources include Australia (28.1%), Kazakhstan (19.0%), and the United States (11.5%). Imports amounted to US$186 million. Wheat exports (90,400 tons) went mainly to the Democratic People's Republic of Korea (76.4%) and Hong Kong (19.4%). The generated income for wheat export was US$38 million.

Maize

In the first quarter of 2018, maize imports reached 557,300 tons, an increase of 81.8% over 2017. The main importing countries were Ukraine and the United States, accounting for 95.4% and 3.2% of imports respectively. Imports amounted to US$116 million. The United States (42.9%), Canada (28.6%), and France (14.3%) were the main destinations of Chinese maize exports, reached to 700 tons. The value of the export was US$0.2343 million.

Soybean

In the first quarter of 2018, the total import of soybean was up by 0.2% to 19,566,800 tons in China. Brazil and the United States respectively contributed 58.7% and 35.4%, for a total value of US$8216 million. Soybean exports were 30,800 tons, down 5.2%.

Trade prospects for major grains in China for 2018

Based on the latest monitoring results, China grain imports are projected to increase. The projections are based on remote sensing data and the Major Agricultural Shocks and Policy Simulation Model, which is derived from the standard GTAP (Global Trade Analysis Project).

Rice

According to the model forecast, rice imports and exports increased by 9.8% and 20.4% respectively in 2018. Due to the price differences at home and abroad and the influence of China-ASEAN Free Trade area Agreement, the rice import in 2018 will maintain its growth. Exports will remain a low growth due to the lack of price advantage.

Wheat

According to the model forecast, wheat imports will increase by 3.4%, while exports will decrease by 7.8%. As result the global supply and demand is in a relaxed pattern, global wheat price slightly increased. But the persistence of wheat price difference at home and abroad still exists, wheat imports in 2018 will increase slightly in stability.

Maize

According to the model forecast, maize imports increased by 24.6% in China in 2018, but exports decreased by 9.4%. At present, global supply and demand of maize is relaxed, and the prices of maize perform downward trend. Due to the strong demand for livestock industry, maize imports are expected to increase in 2018.

Soybean

Soybean imports and exports will decrease by 0.8% and 3.0%, respectively. Under the influence of insufficient domestic production and other factors, imports will remain high. However, under in response to the structural adjustment policies for planting and the changing international context, soybean imports in China will decrease slightly in 2018.

Figure 4.18. Rate of change (%) of imports and exports for rice, wheat, maize, and soybean in China in 2018 compared to those for 2017.