

Chapter 5. Focus and perspectives

Building on the CropWatch analyses presented in chapters 1 through 4, this chapter presents initial CropWatch food production estimates for 2017 (section 5.1), as well as sections on recent disaster events (section 5.2), the situation in the Horn of Africa (5.3) and an update on El Niño (5.4).

5.1 CropWatch food production estimates

Methodological introduction

Table 5.1 presents the first revision of global maize, rice, wheat, and soybeans production estimates prepared for 2017 by the CropWatch team. It is issued at a time when almost all winter crops in the northern hemisphere have been harvested, and summer crops are in their late stages; in the southern hemisphere winter crops are growing and the planting of the summer season/monsoon season will start in a month or so.

The estimate is based on a combination of remote-sensing models (for major commodities at the national level) and statistical projections based on recent trends for minor producers and for those countries that will harvest their crops later during 2017, for which no directly observed crop condition information is currently available. In table 5.1, modeled outputs are in bold red. The percentage of the production that is modeled (as opposed to projected using trends) now generally exceeds 95% of production for all crops.

It is important to remember that for China and the 30 countries described in chapters 3 and 4 (listed by name as the “major producers”) the quantitative estimates in this chapter are based on inter-annual variation of average and planted area using remote sensing data. In combination with the 2016 final estimates from CropWatch, production estimates for 2017 are achieved. It is also stressed that the estimation is crop-specific, as it is based on different crop masks for each crop and, for each crop, both yield variation and cultivated area variation are taken into account when deriving the production estimates. The major producers represent at least 80% of production and 80% of exports. In the production table, “Others” (1) and the countries shown in black, were extrapolated to 2017 based on the linear trend from 2010 to 2016, with FAOSTAT data up to 2014 (the last year available) and CropWatch final estimates for 2015 and 2016.

CropWatch production estimates differ from other global estimates by the use of geophysical data in addition to statistical and other reference information such as detailed crop distribution maps. Finally, this chapter only provides national data for China; for more detail please see chapter 4.

Production estimates

CropWatch estimates the global 2017 production of the major commodities at 1008 million tons of maize (up 0.6% over 2016), 748 million tons of rice (up 1.6%), 737 million ton of wheat (a 0.5% increase over 2016), and 315 million ton of soybeans (a decrease of 0.7%). The major producers contribute 887 million ton of maize (+0.3%), 672 million tons of rice (+1.6%), 624 million tons of wheat (-0.9%), and 298 million tons of soybeans (+0.9%). The contribution of the “minor producers” (shown as “others” in the table) to the global production is 5% (soybean) to 15% (wheat), and about 10% for rice and maize. For maize and wheat, the group of minor producers outperforms the bulk of the remaining nations, with the largest increases over 2016. For rice, the increases are 1.4% (“others”) and 1.6% (main producers), while for soybean the main producers increased their production 0.9% while a very significant drop (-22.9%)

occurred among minor producers, confirming a generalized trend of many small (and not so small, such as in Pakistan) producers to move away from soybean on all continents.

Table 5.1. CropWatch productions estimates, thousands tons

	Maize		Rice		Wheat		Soybean	
	Production (ktons)	% change from 2016	Production (ktons)	% change from 2016	Production (ktons)	% change from 2016	Production (ktons)	% change from 2016
Argentina	29946	16.5	1769	4.4	11338	-2.5	51116	0.1
Australia	759	61.4	1864	23.7	29719	-6.0	92	-6.8
Bangladesh	2433	2.4	46300	-3.0	1344	11.7	64	
Brazil	84019	19.3	11129	0.7	7773	3	96726	5.4
Cambodia	780	4.1	8995	4.7			147	-11.2
Canada	12099	3.4			30679	-7.8	5584	3.7
China	193853	-3.2	200371	-0.1	118902	0.3	13860	4.3
Egypt	5721	0.3	6888	9.5	10963	7.4	33	18.1
Ethiopia	6498	-9.2	173	28.7	4180	-11.9	72	-28.2
France	14665	-0.3	380	386.8	38051	0.2	129	-38.1
Germany	4688	1.9			28130	0.1	8	
India	17492	-6.2	163514	4.3	93496	8.6	11330	-6.9
Indonesia	17565	-4.1	68339	-1.4			900	1.8
Iran	2535	-5.8	2413	-12.7	12735	-20.8	173	-0.3
Kazakhstan	722	4.8	392	-4.6	15837	-13.0	207	-23.7
Mexico	23073	-3.0	158	-10.6	3283	-7.5	278	-30.3
Myanmar	1772	1.5	25328	-0.8	190	1.4	178	40.1
Nigeria	11069	2.8	4353	-5.1	84	-26.9	517	-21.8
Pakistan	4135	-8.7	7676	-16.0	22426	-1.4		
Philippines	7854	3.8	21824	8.5				
Poland	4703	27.8			10931	2.1	1	
Romania	11571	0.7	39	-17.8	7670	-0.1	141	-32.3
Russian Federation	12918	4.7	996	-2.0	58912	2.4	2190	-3.5
South Africa	14161	57	3	-0.2	1892	11	912	-17.5
Thailand	5219	2.7	40379	1.8	1	18.5	144	-37.8
Turkey	6102	3.1	949	1.3	19174	1	180	-17.4
Ukraine	30561	-0.7	98	-8.0	22662	-5.8	3799	-16.2
U. Kingdom					14521	1.3		
United States	354763	-3.6	10888	3.4	54270	-4.6	109323	-0.6
Uzbekistan	490	15.4	496	13.4	5401	-15.5		
Vietnam	5221	-0.3	46511	9.3			172	
Sub-total	887387	0.3	672225	1.6	624564	-0.9	298277	0.9
Others	120582	3.1	75861	1.4	112622	9	16867	-22.9
Global	1007970	0.6	748085	1.6	737185	0.5	315145	-0.7

Note: Numbers in bold red represent modeled outputs. "Others" or "Minor producers" include the 151 countries from Afghanistan and Angola to Zambia and Zimbabwe.

Maize

The largest modeled increases are those of Argentina (+16.5%), Brazil (+19.3%), and especially South Africa (+57%), as the country recovers from the 2016 El Niño drought. In the first, the production was

achieved through a 20% expansion of land cropped with maize, while in Brazil the yield increased 19% due to favorable agroclimatic conditions; in South Africa, both area and yield increased (16.3% and 35.1%, respectively). In Argentina (table B.1), production increased mainly in Buenos Aires (+7.7%), Córdoba (+4.9%), and Mesopotamia ("Entre Rios"; +11%). The areas described as "others," i.e., the minor provinces in terms of maize output, markedly outperformed the big six, which include San Luis, Santa Fe, and Santiago del Estero in addition to the three listed above: +86.8%. This confirms a trend - observed in both Argentina and Brazil in previous years - of the increasing importance of the minor provinces. In Brazil, the traditional maize states (Mato Gross, +11.9% and Parana, +12.4%) altogether increased their production by 13.6%, which compares with +63.8% for the minor producer states.

Among the major maize producers in the northern hemisphere, CropWatch puts China at 194 million tons (-3.2%) and the United States at 355 million ton (-3.6%). Table B.5 provides details for the United States. The largest producers generally underwent a production drop, such as Illinois (-4.6%), Iowa (-5.2%), Nebraska (-5.9%), and Minnesota (-4.9%). Some important producers increased their output (Ohio, +4.6% and Michigan +2.4%), but not to the extent of reversing the nationwide drop. Although no other maize producer comes close to China and the United States, several important producers (in the range of 10 to 30 million ton) undergo a stagnation or negative change compared with the previous season, including Ukraine and France (both at -0.3%), Mexico (-3.0%), and India (-6.2%). Ethiopia is mentioned as well (-9.2%) as the projected decrease accompanies a difficult humanitarian situation, which may, however, improve between now and the end of the year as most Meher season crops are still to be harvested. Pakistan is mentioned as well with a production of 4.1 million ton, down 8.7% compared with 2016.

Interestingly (table 5.2), the main maize importing countries collectively underwent a production deficit close to 3% for a production volume close to 223 million ton, while exporters, with a production volume around 500 million tons, increased their production by about 0.5% (0.2% to 0.8%, respectively, for the 5 and 10 first exporters). The increased demand on global markets could thus be about 10 million ton if we consider the insatiable demand of markets for maize and soybean.

Rice

Among the major Asian producers and exporters, positive rice production increases over 2016 are recorded in India (+4.3% to 163 million tons), Vietnam (+9.3%), and Thailand (+1.8%). This was usually achieved through increases in area or, especially in Vietnam, yield (+8.4%). China suffered a small and comparable drop in both area and yield (-0.6%) which, together, brought about the nation-wide near-stagnation production drop. Chapter 4 provides details about the spatial distribution of rice performance in China. Some "minor rice producers" in Asia did well, including Cambodia (+4.7%) and the Philippines (+8.5%). Bangladesh (-3%) reduced both yields and hectareage. In South America, table B.2 indicates that Santa Catarina State increased the output 10.6% to 1.1 million tons, while the increase in Rio Grande do Sul, the most important rice growing State in Brazil, is put by CropWatch at 8.8 million tons, up 3.3% from 2016.

The top five rice importers (Iran, Nigeria, the Philippines, Saudi Arabia, and Iraq) increased their production by 3.9%, largely due to the performance of the Philippines since both Iran (-12.7%) and Nigeria (-5.1%) did badly. The main exporters did well except Pakistan, but their production nevertheless increased 3.2% and 3.8% for the top 10 and top 5 producers, respectively., but their production nevertheless increased 3.2% and 3.8% for the top 10 and top 5 producers, respectively.

Wheat

Wheat is normally less prone than other commodities to large variations in production, supply, and demand because of the large number of countries that grow the crop, and because it is cultivated as both a winter and a summer crop – even if most production is from winter wheat.

For the current report, due to less favorable agroclimatic conditions than during the previous years, CropWatch expects a drop in wheat production in three of the major wheat producers: Canada, down 7.8% to 31 million ton; the United States down 4.6% to 54 million tons; and Australia, down 6.0% to 30 million tons. In all cases, yield fell more than areas. Additional detail is provided in tables B.3 through B.5. In Canada, only Ontario did better than last year (+8.0%) while Saskatchewan is down 11.9%. In the United States, the nationwide decrease results from a mix of favorable and unfavorable conditions. Among the first, CropWatch estimates put California (+9.7%), Oregon (+13.1%), Ohio (+3.0%), and especially Idaho (+2.7%). The second category (unfavorable conditions) include all the major wheat states such as North and South Dakota (-9.6% and -8.9%, respectively), Montana (-15%), and Kansas (-7.7%). In Australia, all states except Victoria (+3.0%) recorded a deficit compared with 2016.

As a result, the total production of the five main wheat exporters (table 5.2) fell 6.9%. At the same time, the main importers increased their production by 4.8%. Other countries to be mentioned under wheat for a drop in production include again Ethiopia (-11.9%), Mexico (-7.5%), Ukraine (-5.8%), Iran (-20.8), and Kazakhstan (-13%). Among the countries that did well or very well, Brazil (+3.0%), Poland and Russia (+2.1 and 2.4%, respectively), and India +8.6% must be mentioned; in India the improvement was achieved through an increase in both winter wheat area (+5.2%) and yield (+3.1%).

Soybean

China remains a minor soybean producer (14 million ton) when compared to the United States (109 million tons), Brazil (97 million tons), and Argentina (51 million tons). However, the current season is the second consecutive year when Chinese soybean production increased (by a significant 4.3%), thereby confirming the reversal of the decade long negative trend that had been affecting the crop. This is also the reason why the top five soybean importers increased their production by 3.4% in 2017. The production growth rate is exceeded only by Brazil (+5.4%), while Canada (+3.7%) and especially the United States (-0.6%) are performing less well. In India, due to the delayed monsoon season, maize and soybean decreased compared with 2016. Soybean production fell 6.9% due to a drop in cultivated area close to 20% (19.7%). In China, on the other hand, it increased 4.6%.

Sub-national spatial detail about the major producers is given in the tables of annex B. In Argentina, improved output over 2016 is recorded in Mesopotamia (+5.8%) and the combined "minor states" (+7.0%), while the largest drop occurred in Santa Fe (-3.1%). In Brazil, only Minas Gerais decreased output for soybean, while Mato Grosso do Sul and Parana had the largest improvement (+6.7% and +6.4%, respectively). A very mixed situation prevails over the United States. Among the important soybean areas, Arkansas (+3.4%), Ohio (+4.5%), and Indiana (+0.9%) are the only three with improvements over the previous season. Most other states are down, including Illinois (-4.6%) and Iowa (-5.2%), followed by Minnesota (-4.5%), Missouri (-1.7%), and South Dakota (-7.9%), the latter which suffered the largest drop nationwide.

Table 5.2. 2017 production (million tons) and difference from 2016 of major importing and exporting countries

Maize		Rice		Wheat		Soybean	
Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016

	Maize		Rice		Wheat		Soybean	
	Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016	Prod. (million tons)	% change from 2016
Top 5 importers	223	-3.1	29	3.9	31	4.8	14	3.4
Top 10 importers	234	-2.7	301	0.1	39	3.6	15	-4.8
Top 5 exporters	514	0.2	269	3.8	221	-2.7	273	1.3
Top 10 exporters	570	0.8	310	3.2	307	-3.3	290	-1.4

5.2 Disaster events

Introduction

This section focuses on disasters that occurred between May and the end of July 2017. Because disasters that occurred in April were already mentioned in the May bulletin, they are only mentioned again here when interesting updates are available. Similarly, since the Horn of Africa with its long trail of natural—but mostly man-made—disasters is covered in detail in section 5.3, those events are generally not repeated here.

Section 5.3 illustrates the complex inter-penetration of factors associated with climate and fighting/civil unrest. These factors currently relate to the bulk of the reported emergencies. As this section deals primarily with natural disasters, purely man-made disasters (1) are not specifically discussed.

Although some droughts and cold spells are mentioned below, the current reporting period from May to July is very clearly characterized by excess precipitation and the accompanying phenomena like landslides.

Cyclones

In May (May 1 to 16), the off-season cyclone Donna affected the Solomon Islands, Vanuatu, New Caledonia, and New Zealand, with significant damage occurring in the agricultural sector in Vanuatu. At the end of May (landfall on 30 May), cyclone Mora affected Sri Lanka, Andaman and Nicobar Islands, east India, northeast India and Bangladesh, Myanmar, Bhutan, and the Tibet autonomous region of China, resulting in 239 fatalities (almost all in Sri Lanka) and damage amounting to just under US\$ 300 million (Figure 5.1). In total, 630,000 people were impacted. The cyclone brought particular hardship to refugees, such as those in Rakhine's displacement camps in Myanmar. According to OCHA (2017b), "families were living in sub-standard conditions before the cyclone struck and Mora has only made their precarious situation worse."

Figure 5.1. In the wake of Cyclone Mora, floodwaters flattened many homes in this village in Kalutara, Sri Lanka.



Source: <http://reliefweb.int/report/sri-lanka/un-and-partners-sri-lanka-appeal-resources-receding-floods-reveal-extent-damage>.

On July 17, Tropical Storm Talas made landfall in the provinces of Nghe An and Ha Tinh in central Vietnam. About 3,000 houses were damaged, 10 people died, and about 100,000 hectares of crops were damaged. The severe storm also affected South China (Hainan), Laos, Thailand, and Myanmar. Total damage is estimated at US\$ 43 million.

Drought and fires

Drought in Timor Leste is mentioned because of the extreme vulnerability of the population: 41% are below the poverty line and over 70% practice subsistence farming; about one person in three is affected by the drought and about one in ten is in IPC phase 2 (stressed). Drought has been ongoing since 2015, and the deterioration of the food security situation is likely to deepen. (See references under [DroughtTimorLeste_1](#).)

Drought is also reported, by FSO and Reliefweb, for the Democratic People's Republic of Korea at the end of July. Rainfall was short in some key areas producing rice (the main staple), maize, potatoes, and soybean. The production drop could be as large as 30% as major cereal producing provinces (South and North Pyongan, South and North Hwanghae, and Nampo City) have been affected. ([Drought_DPRK_1](#))

Fires and a heatwave occurred in much of Mediterranean Europe and Portugal where widespread fires occurred at the beginning of June. The fires happened amid a severe heatwave with temperatures reaching 40°C; the blaze reportedly was the country's worst forest fire in more than half a century. At the end of July in Canada, fires also displaced close to 50,000 people when more than 300,000 hectares of forest were burned. ([FiresPortugal_1](#) Mid).

Floods

The previous bulletin provided ample detail about the "Putumayo floods" (named after the Department in Colombia that suffered the most) that were caused by a "Coastal El Niño" and in the beginning of April 2017 affected the border area between Peru, Ecuador, and Colombia. At the end of April ([RefLamFlood_1](#)), the same general area of northwestern Peru was again hit by floods that affected 1.3 million people: a total of 150,000 were injured, while 31,000 lost their homes and 60 people died. Damage was most severe in the Departments of Piura, Lambayeque, La Libertad, Ancash, and Tumbes, with 435,000 people food-insecure. The timing of the floods corresponded to the growing season of

cereals and the planting of potatoes. About 90,000 hectares of crops were affected, with 26,000 hectares lost as a result of the continuous rain in previous months and the floods at the end of April. Food production in the region is expected to drop 10%. Floods also affected other areas in Peru at the beginning of May, especially the Departments of Lima and Cajamarca. Other areas were similarly affected later in May.

In Haiti, floods hit at the end of April in the Departments of Sud, Sud-Est, Grand'Anse, et Les Nippes (floodsHaiti_1). About a thousand hectares of crops were flooded mostly in Cavaillon and Les Cayes. The country is also still suffering from the impact of Hurricane Matthew in October 2016. As a result of the disasters, close to 6 million people were deemed food insecure as of mid-June.

In Russia, a dam burst in the Tyumen region in the district of Ishim led to a thousand families losing their houses (May 10 and 15, 2017) (RussiaFloods_1). Meanwhile, Ghana also has experienced major floods in five regions. On July 10, 2017, Greater Accra, Central Region, Western Region, and Eastern Region were declared as flood emergencies (FloodGhana_1).

The most serious and widespread floods of the reporting period occurred in Asia, in particular the Indian subcontinent and China.

In Sri Lanka, heavy monsoon rains on May 18 and 19 led to floods in Western, Southern, and parts of Central Province, as well as in Subaragamuwa Province. About 300 people in 15 districts lost their lives, while in total almost 700,000 people were affected. Nascent cyclone Mora contributed to the emergency. According to Reliefweb, the "floods and landslides have washed away the crops that managed to survive the drought" (FloodsLanka_1).

In Bangladesh, on June 15, mudslides in the southeast of the country have claimed additional lives and caused damage to homes and infrastructure. Over 150 people are estimated to have been killed across five districts, often when their homes were buried in mud and rubble, including over 5,000 homes in the Kawkhali upazila of Rangamati district (mudslidesBangladesh_1).

During the second half of June, 7.3 million people were affected by heavy rains and resulting floods and landslides in southern China; in Xinmo village in Sichuan province alone, about a hundred people died. The disaster has caused around 2.9 billion Yuan in direct economic losses. At the beginning of July, the government released 1.9 billion Yuan (about US\$ 280 million) to assist with floods relief. The funds will go to 20 provinces and autonomous regions including Guizhou, Hunan, Jiangxi, and Zhejiang, which were most severely hit. The funds include 700 million Yuan for evacuation of people, temporary living allowances, rebuilding of homes, and compensating people for their losses (FloodChina_1).

In India, heavy rains at the beginning of July in Assam (in the country's northeast) affected close to 400,000 people in over 850 villages across half the state's 32 districts. Flooding worsened on July 22 when new areas were submerged by the rising waters of the Brahmaputra River and its tributaries. As of 1 August, official figures show over 1.1 million people and over 3,300 villages across 21 of 32 districts affected. At least 32 people have died, most since July 22. In neighboring Bangladesh, several low-lying areas were flooded as well during the same period, affecting Sylhet and Moulvibazar districts, followed by eight more districts as water breached embankments in many places. Next to Assam, several other Indian states have suffered from excess rainfall, including Manipur, Arunachal Pradesh, Gujarat, Bihar, Uttarkand, Uttar Pradesh, and Orissa states (FloodAssam_1).

Figure 5.2. Rescue work underway in flood-hit Wenxian (Gansu province)



Source: http://www.chinadaily.com.cn/china/2017-08/13/content_30542931.htm.

Cold wave

Cold weather, described as “life threatening” has affected some villages of Cuzco province in Peru on April 18 and 19, and again on May 10 (ColdPeru_1).

5.3 Focus: The specter of famine is back in the Horn of Africa

Overview

On March 10, 2017, the United Nations (UN) Under-Secretary-General (USG) for humanitarian affairs and Emergency Relief Coordinator delivered a statement to the UN Security Council about the ongoing humanitarian crisis, the largest since the foundation of the UN more than seventy years ago. The USG reported about the Lake Chad region and his missions to Yemen [1], South Sudan, Somalia, and Kenya, in particular northern Kenya where pastoralists are badly affected by the drought caused by the recent very atypical El Niño.

The region in focus here is the Horn of Africa (HoA), a region that is most eastern on the African continent and includes the countries Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda. As evidenced by the statement of the USG, a large part of the region is affected by a serious emergency situation.

The causes of the emergency are complex and their relative importance varies by country. Causes include, in no specific order: drought, climate change, desertification, and the recent El Niño. Agricultural governance is generally poor in the region, with agriculture already for a long time a low-priority sector, evidenced by under-investment and a resulting degrading of agricultural infrastructure. This poor agricultural governance can be seen as one of the root causes of the low resilience of the sector against drought in this region [2].

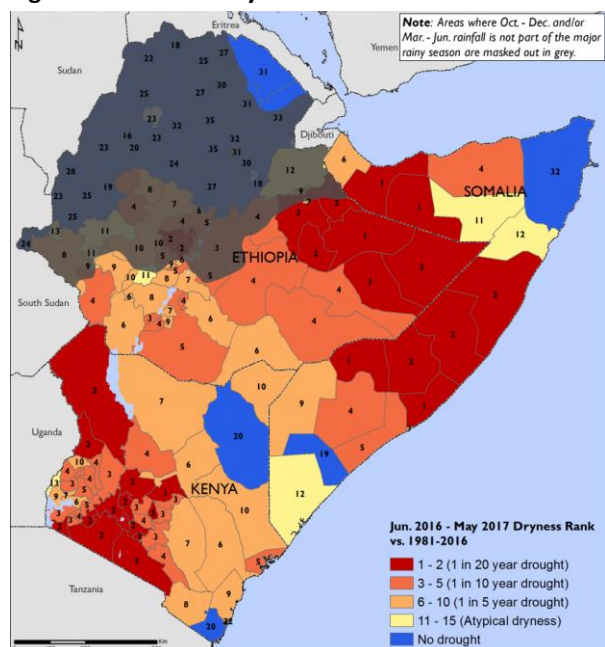
As will be explored in the following sections, the current emergency in the region is exceptional on several accounts. After a general overview of the situation and aid requirements, a more detailed assessment of the situation in individual countries in the HoA is described.

Features of the emergency situation in the Horn of Africa

In the HoA, the focus of this section, the situation is worse than during the previous emergency of 2010-11 (OCHA 2017c) because several areas have experienced three consecutive drought years, “exhausting people’s capacity to cope with another shock.” The drought also affects watering points for cattle and river flow, traditionally a source for irrigation in the HoA. Worst affected by drought are Somalia, east and southeastern Ethiopia, and northwestern Kenya, in an area adjacent to South Sudan (Figure 5.3). With the exception of southern-central and southwest Kenya and the areas shaded in gray in the figure, most of which usually record abundant rainfall, most areas in the region are semi-arid lowlands and, more rarely, highlands that experience most of their rainy season sometime between March and June. Rainy seasons are short (sometimes just two months), making cattle the mainstay of the livelihood systems. In fact, cattle herding is an efficient system to collect dispersed biomass and concentrate it in milk and meat producing cattle. As will be mentioned below, the drought badly affected cattle, the quality and numbers of which are decreasing, thus reducing or erasing the income and overall prospects of pastoralists. As a result, cattle production and markets collapsed.

As mentioned, the HoA is part of a significantly larger spatial ensemble of insecurity (including food insecurity) that it interacts with, willingly or unwillingly [3]. Although several early warning systems for climate anomalies and food insecurity operate in the area at various scales (regional, such as AGRHYMET [4] and ICPAC [5], and almost all countries), they are generally ill equipped to handle the extremely complex situations that arise from the interaction of abnormal weather and war. It remains that, according to OCHA (2017c), compared with the drought of 2011, governments were now better prepared and therefore responded efficiently to the deteriorating situation; they were proactive and led the relief efforts, especially in Ethiopia and Kenya. In addition, risk management systems for farmers have been established in several countries, including the “R4 Rural Resilience Initiative” in Ethiopia (WFP 2107a) and national agricultural insurance in Kenya (KLIP 2017).

Figure 5.3. Rank of dryness between June 2016 and May 2017 in the HoA



In both Somalia and South Sudan, between 40 and 50% of the population is exposed to insecurity and hunger (44% in Somalia, 47% in South Sudan), while percentages of 5% to 10% prevail in Ethiopia, Kenya, and Sudan, where drought victims and displaced persons constitute the bulk of the people in need. In

Djibouti, a very small and climatically vulnerable country, the population exposed to insecurity and hunger climbs to one person in 3, while for the HoA as a whole, about 8% of people are affected.

It is stressed that all refugee movements of the size of those occurring in the HoA constitute a set-back in development, with a very slow recovery curve. To start with, depending on the timing of the movements, refugees often lose their crops and livelihoods (including cattle) at home. Only if the calendar permits—and if provided with land and tools—can they produce at least part of their own food at the location of their settlement in either home or host country. Moreover, due to a stressful life and shortages, overall health declines, especially in children, which may affect them throughout their lives. Also, despite the fact that usually every effort is made to ensure schooling, refugee children typically suffer a retrogression in education that reduces their chances in life.

Short analysis of the situation by country

Djibouti

Insecurity in Djibouti stems partly from unfavorable rainfall and from the situation on its southwest border, which is contested between Djibouti and Eritrea. According to FEWSNET (FEWSNET 2017a), however, the situation in the country should improve from IPC phase 3 (Crisis) to 2 (Stressed) despite the fact that Qatar has recently withdrawn its peace-keeping force from the area. A contributing factor to this improvement has been generally satisfactory rainfall that has restored grazing lands.

Ethiopia

In June 2017, FAO listed Ethiopia among countries that face a “widespread lack of access to food,” stressing the impact of drought on local livelihood systems in southeastern areas and the lingering effects of the previous year’s severe drought in northern areas. Drought affected the secondary season (which is the first (February to June) Belg season) throughout the country, but especially crops and pastures in the south and southeastern areas (FEWSNET/WFP 2017). Meanwhile, the effects of the 2015 drought continued to impact local livelihoods in northern areas. Altogether, FAO estimates that 7.8 million people are food insecure (FAO 2017b), mostly in pastoral areas. The main season (Meher), which is to be harvested from August to October-November, is not particularly affected so far, or only in limited pockets.

The problems are most serious in pastoralist areas, some of which have suffered three years of consecutive drought. As a result, some 5.6 million people in Ethiopia require emergency food assistance in 2017 (OCHA 2017c). FAO preliminary estimates suggest that up to three million cattle, calves, and milk cows have died, representing up to 90 percent of the total in some areas (Weblinks_3).

FAO (2017b) did not, however, rank Ethiopia among the countries in need of external assistance, as the main Meher crop is to be harvested between now and the end of the year, and because the country is large and diverse, with highlands usually well-endowed with rainfall. This may change, however, as about 150 thousand hectares of Belg [6] cropland are estimated to have been hit by fall armyworm, affecting 6 of the 11 states. The impact was most severe in the Southern Nations, Nationalities and Peoples’ State (SNNPS), where about 10,000 people are affected (ACAPS 2017b). The armyworms may also affect the main season crops, and the climate of uncertainty is affecting the price of maize. Over the last 3 months, the price of maize was up 9.2% (on average, it increases 5.1% over the same period), while for the last year the increase is 3.4% (instead of an average decrease of 0.7%) (FAO 2017c).

Eritrea

Eritrea is absent from virtually all accounts of the situation in the HoA, which is surprising given the similarities in climate with neighboring areas in Ethiopia, Djibouti, and Sudan. According to the World Food Programme (WFP) Seasonal Explorer (WFP 2017c), most of the country did experience a wet spell (above-normal rainfall) in April, followed by about average rain and a bout of drought in July. In fact, the

Climate Prediction Center (CPC) Outlook (CPC 2017) classifies parts of the country as suffering from “abnormal dryness.”

Kenya

At the beginning of the year, 23 out of Kenya’s 47 counties were affected by drought, and Kenya’s government declared a national emergency. Areas in the north of the country—in the north of Turkana district (which borders South Sudan and Uganda), north Hor Constituency (Marsabit district), and Mandera, on the border with Somalia and Ethiopia—are semi-arid; they usually cultivate some maize. Production fell dramatically (up to 100%), and large numbers of animals died in Turkana, Marsabit, Samburu, and Mandera counties. Data collected by UNICEF from 10 affected counties indicates that close to 175,000 children are not attending early pre-primary and primary schools, primarily due to the drought’s impact.

For poor pastoral households in the northern central and eastern regions, the crisis (IPC phase 3) may continue into 2018. This year’s long rains (March to May) were well below average in most of the country, except in the southern-central and southwestern highlands in an area from Central Region (where elevation usually exceeds 2,500 meter with moderate drought) to the regions of Nyanza and Western across the southern rift valley, where elevation is mostly close to 1,500 meter and where rainfall was average. Comparable to Ethiopia, maize prices are high and armyworm outbreaks are likely to worsen already stressed maize crops.

Somalia

According to FAO (2017a), “The two consecutive seasons of poor rainfall in 2016 created a domino effect of losses” that also extended to livestock. About 5 million people in the country are affected by food insecurity with about 1.4 million in IPC phase 3 (crisis). The situation is expected to worsen and reach its peak during the Jilaal season (dry season from January to March).

Based on a survey it conducted in June 2017, FAO’s Food Security and Nutrition Analysis Unit (FSNAU) (2017a) assesses that security outcomes and humanitarian needs are expected to persist in most parts of Somalia through the end of 2017. In some areas where livestock is the mainstay of livelihood systems (mostly in the central-western and northern parts of the country including Mudug, Galgadud, Gedo (which borders northeast Kenya), Middle Shabelle and Lower Shabelle regions), food security may deteriorate between now and the end of the year. Depending on the amount and nature of the assistance that will be provided to Somalia, local famine (IPC scale 5) cannot be excluded.

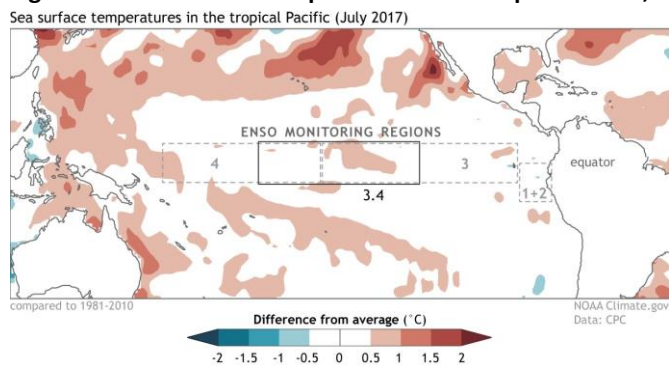
5.4 Update on El Niño

El Niño conditions have been neutral across the Pacific Ocean during the second quarter of 2017 and will presumably stay so at least to the end of 2017. Figure 5.4 illustrates the behavior of the standard Southern Oscillation Index (SOI) of the Australian Bureau of Meteorology (BOM) from July 2016 to July 2017. Sustained positive values of the SOI above +7 typically indicate La Niña while sustained negative values below –7 typically indicate El Niño. Values between about +7 and –7 generally indicate neutral conditions. During the current season, SOI shows repeated fluctuations between –10.4 and + 8.1 over the monitoring period of this bulletin, which indicates the absence of any sustained negative or positive trend. To be more precise, the SOI increased from –6.3 in April to +0.5 in May, then decreased to –10.4 in June, to increase again to +8.1 in July. The Australian BOM reports that conditions are neutral and there is no El Niño currently from a global point of view. CropWatch will keep on monitoring the condition of El Niño.

Figure 5.4. Monthly SOI-BOM time series for July 2016 to July 2017

Source: <http://www.bom.gov.au/climate/current/soi2.shtml>

The sea surface temperatures of all four El Niño regions in the tropical Pacific Ocean were between $+0.3^{\circ}\text{C}$ and -0.3°C in July 2017, resulting in slightly warmer than average condition. The other weak warm anomalies mainly lie in eastern and northern Australia and in the northern Pacific Ocean (see also figure 5.5 from NOAA). The overall slightly warm condition directly confirms the neutral El Niño state in 2017.

Figure 5.5. Sea surface temperature in the tropical Pacific, July, 2017

Source: <https://www.climate.gov/news-features/blogs/enso/august-2017-enso-update-extreme-neutral>