Chapter 5. Focus and perspectives

This focus section complements CropWatch analyses presented in chapters 1 through 4 by presenting additional information about topics of interest to global agriculture. Section 5.1 presents a production outlook for 2015, while the other three sections focus on disaster events (5.2), agricultural developments in Europe (section 5.3), and an update on El Niño (5.4).

5.1 Production outlook for 2015

The latest global CropWatch forecasts of maize, rice, wheat and soybean production for 2015 are presented in tables 5.1 and 5.2, providing both a quick overview (table 5.1) and more detailed production estimates (table 5.2) for each of the 31 countries monitored by CropWatch.

Table 5.1. Overview of 2015 production estimates and forecasts for maize, rice, wheat, and soybean (million tons) for major and minor producers and exporters

	Maize		Rice		Wheat		Soybean	
	2015	**Δ%**	**2015**	**Δ%**	**2015**	**Δ%**	**2015**	**Δ%**
Major producers	881	-0.3	668	-0.3	626	0.1	289	0.5
Minor producers	109	2.5	74	1.5	98	1.7	20	7.9
Total	**990**	**0.0**	**742**	**-0.1**	**724**	**0.3**	**309**	**1.0**
China	**194**	**1**	**202**	**1**	**122**	**2**	**13**	**-1**
Major exporters	482	0.2	286	-0.2	291	2.3	249	0.2

Note: Major exporters are those that normally account for 80% of world exports

Table 5.1 presents the revised production estimates for the major cereals and soybean for 2015. The global maize production stands at 990 million tons (unchanged from 2014), rice undergoes a slight decrease (-0.1%) to 742 million tones and wheat reaches 724 million tones (up 0.3%). Soybean displays an increase of 1% and reachs 309 million tons.

For China, CropWatch estimates the following values for maize (194 million tons, +1%), rice (202 million tons, +1%), wheat (122 million tons, +2%) and soybeans (13 million tons, -1%), continuing the decennial decrease (-1% for the current season).

As a rule, minor producers (which account for about 10% of production for maize and rice, 13% of wheat and 6% of soybean) outperform the major producers for all crops listed in terms of percentage change over the previous season. When considering only major exporters, i.e the countries that account for 80% of world exports, the situation changes only little for maize and rice (0.2% instead of 0.0% and -0.2% instead of -0.1%, respectively) and Soybean (0.2% instead of 1.0%) but more significantly for wheat (+2.3% instead of 0.3%).

Maize. The major maize producers that underwent absolute changes larger than 3% include Cambodia (-10%), India (-6%, due to poor weather), South Africa (-12%, due to El Niño) and Ukraine (-6%, due to abnormal weather conditions and the political situation). Kazakhstan and Poland both underwent a production increase of 4%. Ethiopia is also mentioned here (-3%) as, for the first time since the mid 1980s and 1998-2000 the country is facing a poor grain supply situation brought about by drought, although the impact is unlikely to be as severe as the two previous droughts.

Rice. In Australia, Ethiopia, Russia and Turkey, rice production estimates are up 20%, 7%, 5% and 6%, respectively, while marked decreases are projected for India (-1%) and Romania (-9%). Although Mexico is not a rice producer of any relevance, the size of the drop in production (-33%) is nevertheless worth mentioning.

Wheat. CropWatch projects some spectacular increases in wheat production from the western Mediterranean to Central Asia, a contiguous region for which other sections of this report (sections 1.2 and 3.1) have stressed the unusually favorable precipitation. The area includes Egypt (+5%), Turkey (+10%), Iran (+4%, after several years of unfavorable weather) and Kazakhstan (+16%) where the agricultural benefits of abundant rainfall have largely outweighed negative effects.

In Latin America, Brazil (+4%) significantly outperformed its southern neighbour in terms of wheat production (Argentina, -4%). India and Romania recorded an estimated drop of 4% while Canada underwent a more severe decrease of 8% compared with the 2014 season.

Soybean. Finally, three countries stand out among the minor producers of soybean: Russia (+35%), South Africa (+33%), and Indonesia (-11%, due to a very marked decrease of precipitation brought about by El Niño conditions). Other countries worth mentioning include Australia (+6%), India (+4%) and Ukraine (-4%).

Table 5.2. 2015 production estimates and forecasts for maize, rice, wheat, and soybean (thousand tons) in selected countries, compared to 2014 CropWatch estimates

	Maize		Rice		Wheat		Soybean	
	2015	Δ%	2015	Δ%	2015	Δ%	2015	Δ%
Argentina	25332	1	1691	-3	11630	-4	51788	-1
Australia	1052	2	1779	20	25807	1	89	6
Bangladesh	2251	1	50696	0	1315	2	64	1
Brazil	79655	1	11831	0	6946	4	90230	1
Cambodia	932	-10	9525	1			103	-6
Canada	11845	-1			30673	-8	5415	0
China	193734	1	202325	1	121613	2	13014	-1
Egypt	5936	0	6533	0	9949	5	22	-5
Ethiopia	6524	-3	195	7	4243	-3	87	20
France	14785	-2	76	-7	38972	-2	105	-2
Germany	4583	-1			27406	-1	3	5
India	18881	-6	154805	-1	91396	-4	12147	4
Indonesia	17997	-2	67586	-2			690	-11
Iran	2483	-1	2533	0	13935	4		
Kazakhstan	603	4	365	2	15990	16	252	12
Mexico	23847	0	121	-33	3626	-1	323	11
Myanmar	1717	0	27630	-3	188	1	177	-7
Nigeria	10402	-2	4550	-3	103	-14	760	9
Pakistan	4870	3	9458	0	24765	2		
Philippines	7560	1	19520	1				
Poland	3681	4			10401	-2		
Romania	10763	-3	42	-9	7170	-4	161	5
Russia	11959	2	1017	5	54366	2	2035	35
South Africa	13207	-12			1704	-2	894	33
Thailand	5050	-1	39347	1			192	-6
Turkey	5922	1	986	6	22797	10	229	16
United Kingdom					14759	1		

	Maize		Rice		Wheat		Soybean	
	2015	Δ%	2015	Δ%	2015	Δ%	2015	Δ%
Ukraine	28151	-6	160	1	23309	1	3711	-4
United States	361744	0	9923	-2	56600	3	106755	0
Uzbekistan	423	9	401	12	6739	7		
Vietnam	5184	2	45067	2				
Sub total	881072	-0.3	668163	-0.3	626403	0.1	289247	0.5
Other countries	109245	2.5	73839	1.5	97921	1.7	19545	7.9
Global	990317	0.0	742003	-0.1	724325	0.3	308792	1.0

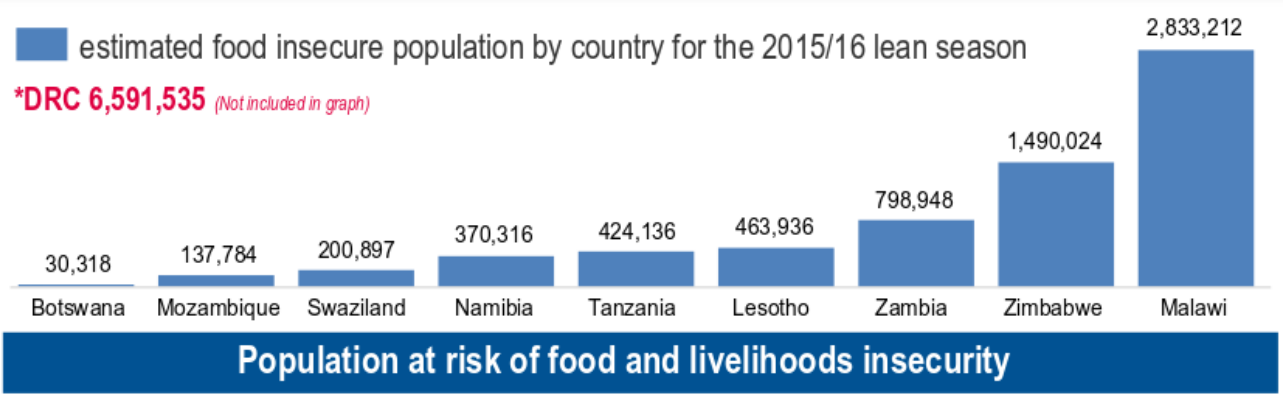
Note: The production values in this table were estimated based on satellite indices over the respective cultivation areas, except for the minor producers for which the values were extrapolated to 2015 based on FAO statistics. For maize, satellite-based estimates cover all countries with productions starting at 1,723 thousand tons for maize (Myanmar and above); 2,534 thousand tons for rice (Iran and above); 1,340 ton for wheat (Bangladesh and above), and 3,617 thousand tons for soybean (Ukraine and above).

5.2 Disaster events

The very active tropical cyclone period from July to October 2015 mainly affected the western Pacific basin, where cyclones typically make landfall in eastern Asia after crossing the island states of eastern and Southeast Asia. Cyclones, storms, and heavy rain led to significant loss due to floods and wind in the agricultural sector. On the other hand worrisome droughts severely affected eastern and southern Africa as well as Central America, creating food insecurity areas at risk of worsening over the coming months.

The reporting period was also characterized by the continuation of some disasters already reported on in the previous CropWatch bulletin. They include persisting aftershocks of the 25 April 2015 Dolakha earthquake of Nepal, affecting not only Nepal but also India and Pakistan, including a 7.5 magnitude earthquake in Peshawar on 26 October. The earthquakes created a precarious situation of insecurity and have increased the risk of landslides. This affects food production in the area.

Figure 5.1. Food insecure people in southern Africa between now and the next harvest



Note: The next harvest is starting March-April 2016, assuming rainfall will be close to expectations. *Source:* https://www.humanitarianresponse.info/en/operations/southern-africa/infographic/sadc-regional-summary-food-livelihoods-insecurity-vac-2015

The major factors that cause a deterioration of food security for the reporting period are probably also related with the situation created by El Niño, including a high frequency of floods, droughts, and tropical cyclones. For the first time in several years, there is a risk of widespread food shortages in regions of east and southern Africa and in Central America.

Drought

Detailed information about the North American drought affecting parts of the US and Canada was reported in detail in previous CropWatch bulletins, including the specific country reports in Chapter 3. At the end of August, the media reported that major wildfires had engulfed at least 10 US states, burning more than half a million hectares of forest in western States, mostly in California, Idaho, Montana, Oregon, and Washington.

The current reporting period saw drought alerts issued for the Caribbean and the Central American Dry Corridor, an area encompassing the Free and Sovereign State of the Chiapas in southern Mexico and the neighboring areas of Guatemala, El Salvador, Honduras, and Nicaragua, starting in August and extending into October. The on going drought is directly triggered by El Niño conditions.

Guatemala also suffered a deterioration of the food situation, with nearly one million people facing acute food insecurity due to reduced crop production: 900,000 people are left without domestic food stocks. In El Salvador, more than 100,000 farmers are estimated to be affected by crop losses due to a prolonged dry spell during the primera season, and up to 60% of the maize harvest was lost. An estimated 156,000 people are in IPC Phase 3 (food crisis) in the eastern and western regions of El Salvador as a result. As the drought has now been lasting for two years in some areas, 1.3 million people are estimated to suffer moderate food insecurity while for 500,000 people the shortage is ranked as severe.

By mid September, 1.6 million people were reported as affected by drought in the Dominican Republic and, similar to the Dry Corridor region, the rainfall shortage started in 2014. Crop losses amount to tens of millions of dollars in total.

At the end of August and September, Relief Web reported that 1.8 million people have been affected by prolonged dry spells and frost in the Highlands region of Papua New-Guinea. 1.3 million people are reported to be most at risk. Crops have been destroyed, and several schools and health facilities have been closed due to water shortages. The affected population is reported to be resorting to less reliable sources of drinking water as a result.

Although 2.7 million people were found to be severely food insecure in Niger during the June to September lean season in Niger, the situation there is complex with the addition of refugees to a situation of chronic food insecurity. On the other hand, outright drought affected much of east Africa (especially pastoral areas) in Kenya, Ethiopia, and south Sudan where environmental stress has compounded civil unrest.

CropWatch has stressed the risk of agricultural drought in southern Africa in previous assessments, with the major agricultural country in the region, South Africa, having suffered a drop in maize production estimated by CropWatch at -24% in August and currently put at -30% by national sources. The drought has affected neighboring countries as well, especially Malawi, Zambia, and Zimbabwe (figure 5.1) and bears the clear imprint of El Niño.

Floods, heavy rain, mudslides and tropical cyclones

Heavy rains, floods, and mudslides are typically associated with cyclones in tropical areas. High ocean surface temperatures (above 27°C) are needed to trigger and feed tropical cyclones with water vapor, which subsequently releases a lot of energy through condensation and strong winds. In fact, the energy and the destructive power of tropical cyclones are directly related to the amount of rainfall they generate.

Tropical cyclones

As already mentioned in the previous CropWatch bulletin, two intense cyclones affected Asia in July and early August: typhoon **Chan-Hom** and north Indian Ocean cyclonic storm **Komen**. Typhoon Chan-Hom (June 30 to July 15) visited Caroline Islands, Guam, Northern Mariana Islands, Japan, China, Korea, and

the Russian Far East and caused losses close to US$1.46 billion, mostly in China (Zhejiang and Jiangsu provinces). Agriculture and transportation make up the largest share of the total loss.

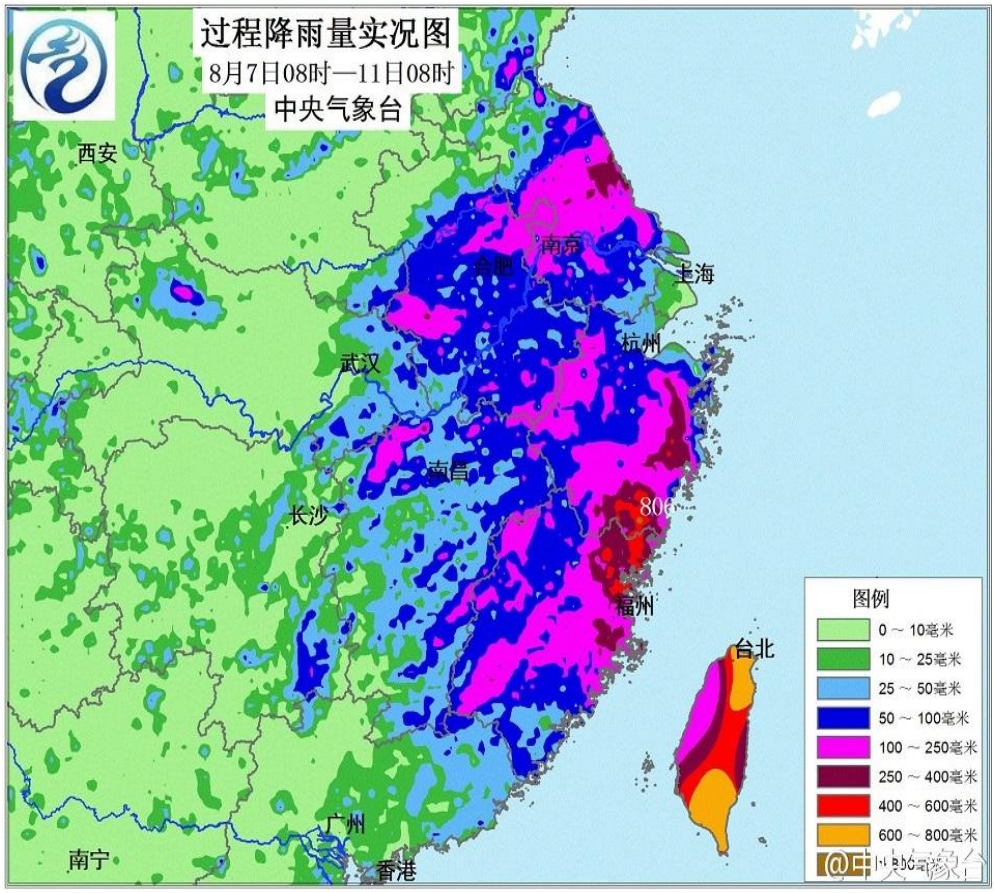
According to the FAO, the August floods and landslides associated with Komen dealt a major blow to the agriculture of Myanmar, as they affected 11 out of the country's 14 states, resulting in severely limited availability of food: more than 1.6 million people were affected and about 600,000 ha of farmland were inundated, destroying 400,000 ha of standing paddy rice fields, not to mention fish and shrimp ponds and cattle. Northern and western regions in Myanmar suffered most as a result of the floods that killed 46 and the government has declared disaster zones for Chin State, Arakan State, Magwe Division, and Sagaing Division. The Western Rakhine and Chin states are among the four worst affected areas.

Komen had a severe impact on India and Bangladesh as well, causing 170 deaths. In India, about half a million suffered from the direct and indirect impacts of tropical cyclone Komen.

Another tropical storm causing damage was **Soudelor** (July 29 to August 12) whose wind speeds reached 285 km/h (one-minute sustained) causing 38 deaths and US$3.2 billion worth of damage in total. It affected the Mariana Islands, Japan, Philippines, eastern China (Zhejiang, Fujian, Anhui, and Jiangxi provinces as well as Taiwan), and South Korea (figure 5.2). Agricultural losses in Japan reached US$2.9 million in all sectors, while close to 7,000 ha of crops sustained damage. In the Island of Taiwan, the banana crop suffered most (about 5,000 ha for a total damage of US$14.3 million. The total sector incurred a loss of US$94.8 million.

Typhoon **Goni** (Ineng) formed on 13 August and dissipated on 25 August, after affecting a large area reaching from Mariana Islands, Philippines, Japan, Korea, and China (especially Taiwan) to Russia, reaching one-minute sustained speeds of 215 km/h. 34 people lost their lives in this typhoon. Available damage estimates include US$94.3 million (mostly in agriculture and infrastructure) in the Philippines and US$60 million in Japanese agriculture. Although close to 90,000 ha suffered in Russia (for a total impact of US$35.5 million), the considerably weakened cyclone brought abundant but welcome rainfall to both China and Russia.

Figure 5.2. Total rainfall (millimetres) recorded from 7 -11 August during the passage of typhoon Soudelor



Source: https://en.wikipedia.org/wiki/Typhoon_Soudelor_%282015%29

A tropical storm name **Erika** created havoc in the Antilles (particularly Dominica), The Bahamas, and the south-eastern United States (mainly Florida) between 25 and 29 August. In spite of modest wind speeds (one-minute sustained: 85 km/h) it still created damage amounting to US$511.7 million. Dominica was the most severely affected country.

Hurricane **Joaquin** formed close to the Spanish coast on 28 September and died off over the eastern Caribbean on 15 October. One-minute sustained winds reached 250 km/h. 34 casualties were reported and damage estimates amount to at least US$60 million. The following countries were affected: Turks and Caicos Islands, the Bahamas, Cuba, Haiti, the south-eastern United States, Bermuda, and Azores. On top of that, the Iberian Peninsula was also affected in Joaquin's early stages. Most crop losses occurred in horticulture (generally fruits).

Mujigae was a short-lived typhoon know in the Philippines as **Kabayan** that affected the Philippines, Vietnam, and China between 30 September and 5 October. One-minute sustained winds reached 215 km/h, causing 22 deaths and very significant damage amounting to US$3.69 billion according to early estimates, mostly in China. The typhoon gained strength just before reaching the country, while the Philippines mostly suffered from heavy rainfall in Luzon. In Southern China, 11 people were killed and more than 200 injured. After the landfall in Guangdong Mujigae inflected losses of US$1.97 billion and damaged about 200,000 ha of farmland there. Following Guangdong, Mujigae moved to Guanxi, where the disaster affected about 1.4 million residents in 22 counties and economic losses of US$27 million.

Typhoon **Dujuan** followed a parallel track to Mujigae, but took a more northern and slower moving between 19 and 30 September, reaching slightly higher one-minute speeds of 230 km/h (145 mph) but causing less casualties as it passed over southern Japanese islands: only three deaths were confirmed and

damage reached US$660.9 million. In Fujian, direct economic losses have been estimated at US$377.5 million, including 31,000 hectares of crops. In Zhejiang, losses were ten times less and no casualties were reported. In Taiwan, losses to agriculture are estimated at US$6.59 million, mostly in Yunlin County, and most of it in directly linked to agriculture (a total of 8,000 ha was affected).

Koppu (11 to 23 October; known as **Lando** in the Philippines) is a third cycle with a track running parallel to Mujigae's and Dujuan's, but barely affecting continental China. Its highest one-minute sustained wind speeds were comparable as well with 240 km/h, causing most damage (US$235.8 million) on Luzon in the northern Philippines and, to some extent on Taiwan and Ryukyu Islands in southern Japan. About 50% of the damage occurred in the agricultural sector (US$125 million, according to PAGASA estimates), mostly in the provinces of Aurora, Cagayan, Isabela, Nueva Ecija, Nueva Vizcaya, Pangasinan, and Quirino.

Hurricane **Patricia** formed off the Pacific coast of southern Mexico on 20 October and dissipated on 24 October after affecting Central America, Mexico and the southern US (Texas). Extremely high 1-minute sustained wind speeds were reached (325 km/h), resulting in 8 casualties and damage in excess of 300 million US$. Patricia is the strongest Tropical Cyclone ever recorded on earth, no doubt in relation to El Niño conditions and very high ocean surface temperatures (30.5°C). Patricia made landfall in Jalisco, a region with low population density, and mountains that "broke" the winds and resulted in very abundant precipitation. About 45,000 Ha of crops were affected in Colima, Jalisco, Michoacán, and Nyarit States, with about one third being completely lost. Most damage occurred in agriculture.

Floods

Floods not associated with cyclones have been reported from a number of locations across all continents, especially in Asia. In late July, flash floods were reported from Iran and from the Philippines where heavy monsoon rains claimed the lives of more than 20 people on Luzon. Also in the Philippines, the Lanao Del Norte province suffered from flash floods during early August.

At the end of the August, flooding killed 40 in North Korea, affecting more than ten thousand people in the northeast of the country, along the Russian and Chinese border. In early August, torrential rains affected the country in South Hwanghae, South Hamgyong, and North Hamgyong provinces. The heaviest floods probably occurred on 11 September in Japan, after rivers burst their banks in the northeast of the country as tropical storm Etau (between 6 and 11 September) veered northeast after crossing the country over central Honshu.

In Africa heavy rainfall leading to floods was recorded around mid-August from Burkina Faso where thousands of households were affected and several people were killed near Ouagadougou. More severe floods occurred more recently (end of October) in Somalia where close to 100,000 people were affected and about half had to be relocated for their safety.

In Europe, the most significant floods occurred in Macedonia at the beginning of August.

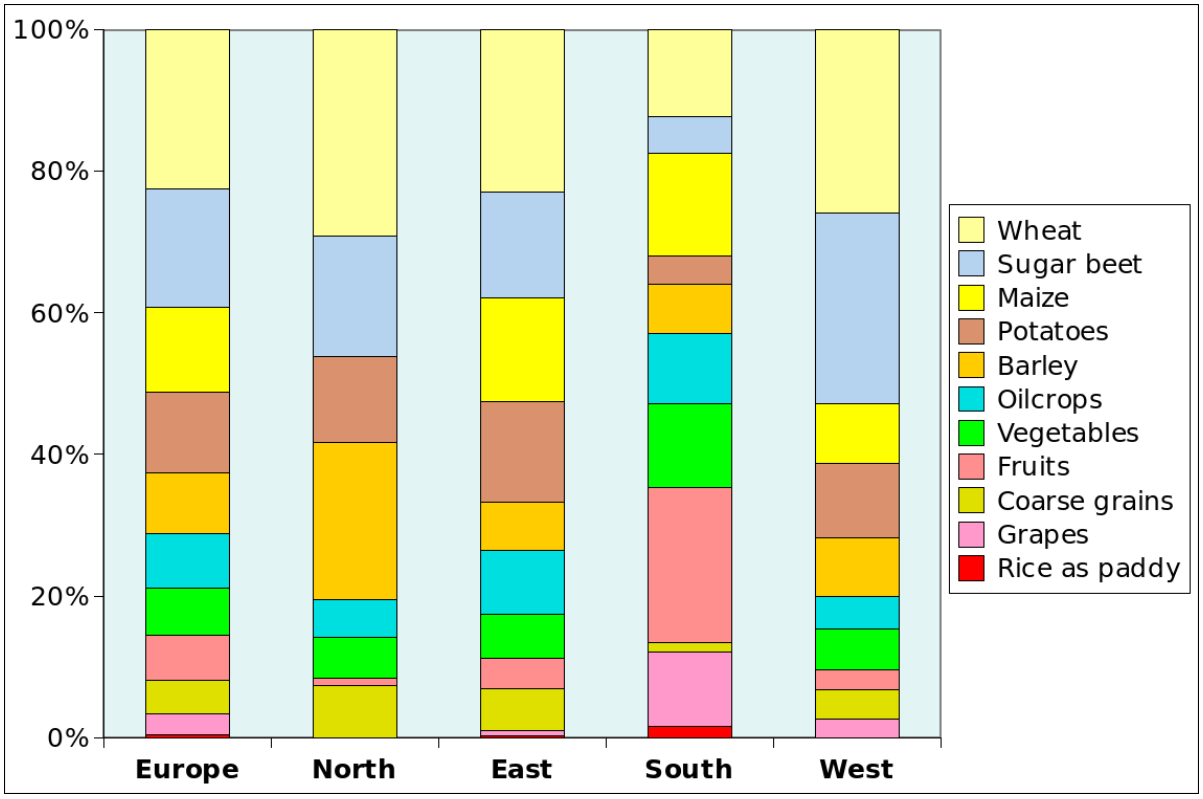
5.3 Crop production and trends in Europe

Introduction

The total European production of the fifty major food products amounted to almost exactly one billion tons in 2013. Half of this production originated in the eastern part of the continent[1] and one quarter comes from Western Europe, followed by the south and the north, with just under 10% of production. Various animal products (for example meat, milk, and eggs) are not included and would add about 20% to the total amount of food produced.

The total volume of food follows population distribution relatively closely, with an average per capita production of 1.35 tons/person per year. Average production per capita is somewhat higher in Eastern Europe (1.66 tons/person per year) and less in Northern Europe (0.81 tons/person per year)

Figure 5.3. Share by production of the fifty main commodities in Europe excluding animal products



Note: The categories often include a mix of dry and fresh products (for example dry onions and shallots in vegetables), while tomatoes are in fruits and soybeans in oil crops.

1 This analysis is based on FAOSTAT data. The country groups are also according to FAO. Western Europe: *Austria, *Belgium, *France, *Germany, *Luxembourg, *Netherlands, Switzerland; southern Europe: ,Albania, Bosnia and Herzegovina, *Croatia, *Greece, *Italy, *Malta, Montenegro, *Portugal, Serbia, *Slovenia, *Spain, the former Yugoslav Republic of Macedonia; eastern Europe: Belarus, *Bulgaria, *Czech Republic, *Hungary, *Poland, Republic of Moldova, *Romania, Russian Federation, *Slovakia, Ukraine; northern Europe: *Denmark, *Estonia, *Finland, Iceland, *Ireland, *Latvia, *Lithuania, Norway, *Sweden, *United Kingdom. European Union members are marked by *. Cyprus is a member of the UE but is an Asian country.

The crop mix

As a result of history, agricultural policies and climate, the crop mix differs among the various regions of the continent (figure 5.3). The figure includes all crop categories that belong to the “top fifty” at the continental level. Therefore some categories are excluded, such as fiber crops (flax is important in Northern Europe only) and fodder crops, especially green maize in Western Europe.

Altogether, when considering the broad categories in figure 5.3, there is remarkably little difference between the agricultural production mix in the west, north and east of Europe, an area extending from France to Russia and covering a variety of soil and climate conditions.

Wheat, sugarbeet, and maize make up about 50% of production in Europe. When potatoes and barley are added, this increases to 70%, except in the southern countries where it does not exceed 50%. It is mostly thanks to the gradual replacement of winter wheat by spring wheat in the north and in the continental east that the "European mix" can be maintained across the continent.

The categories do not necessarily include the same crops: there is some adaptation to environmental conditions, but also differing traditions. Coarse grains include rye and triticale in both areas, but oats and buckwheat occur mostly in the east of Europe. Oil crops include mostly rapeseed in both areas, but significantly more sunflower and soybeans in the east than in the west. Other crops are outright indicators such as leeks in the west, which are virtually absent in the east.

The south of Europe includes mainly Mediterranean countries, which have a typical climate with dry and warm summers as well as wet and mild winters. This results in a large share of olive oil among oil crops (about 90%), an abundance of fruits and vegetables, grapes and wine, as well as rice (mostly from Italy and Spain). Together with animal products (e.g. fish) the mix also constitutes the basis of the Mediterranean diet.

Trends

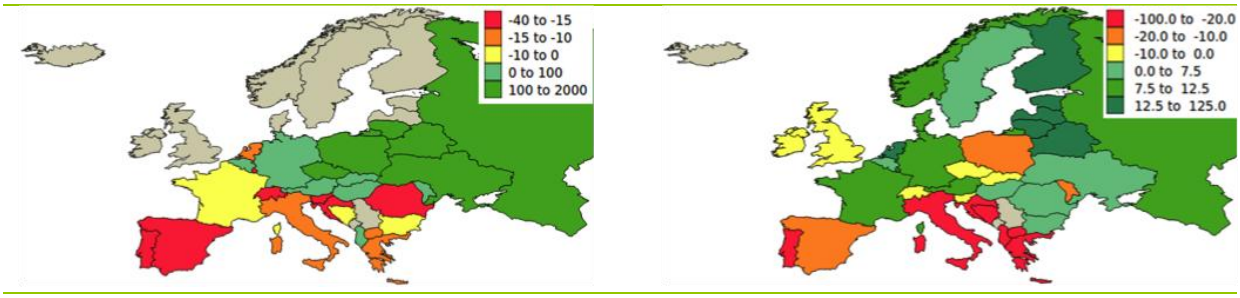
At the continental level, the production of wheat, maize and particularly soybean have been undergoing significant increases over the recent decade, mostly at the expense of barley, sugar beet and especially potatoes, which are on the decline in several regions. Table 5.3 summarizes the trends affecting major European crops.

Table 5.3. Recent trends (1998-2013) affecting European crops

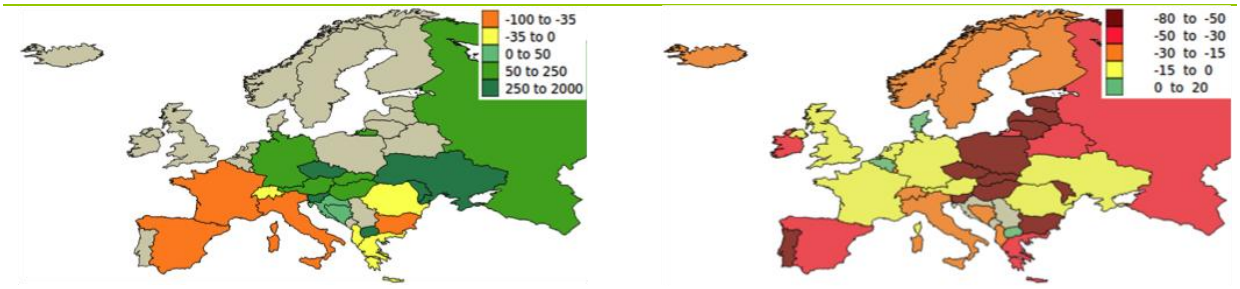
	Europe	North	East	South	West
Wheat	13/10	8/7	23/17	-8/9	8/6
Sugar beet	-0/8	-29/10	37/14	-58/16	2/7
Maize	38/12	7063/85	115/22	-6/9	6/8
Potatoes	-14/5	-22/5	-17/7	-25/4	-2/7
Barley	-3/9	-6/7	3/17	-9/20	-7/8
Soybean	137/23	n.a.	509/28	-13/19	-29/23

Note: The first number is the % difference between the average 2009-2013 production and the 1998-2002 production, the second number is the de-trended coefficient of variation in this %, i.e. the standard deviation of the departures from the linear trend divided by the 1998-2013 average. If the value is n.a., the crop doesn’t occur in the region.

Figure 5.4. Changes in the share of wheat, maize, soybean and potato areas (percent difference between 1998-2002 and 2009-2013)



(a) Maize (b) Wheat



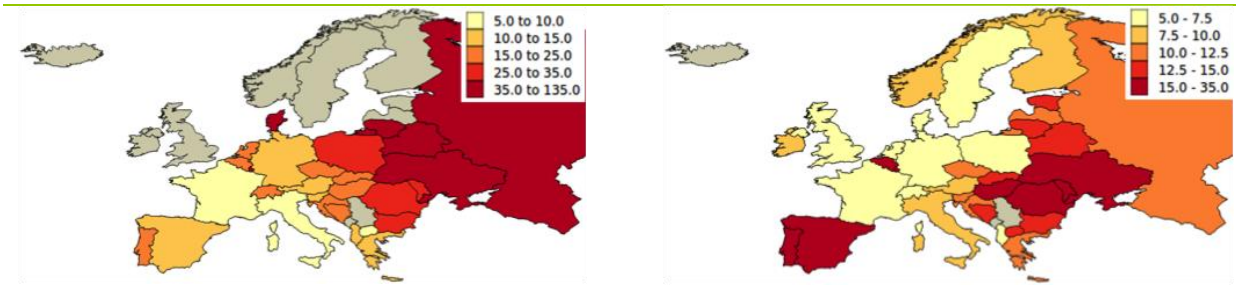
(c) Soybean (d) Potatoes

Spectacular increases occurred in cultivated areas (figure 5.4) in the eastern part of the continent, partly because the countries were still suffering from the political and economic disruption of agriculture brought about by the end of the Soviet Union and the regimes of eastern Europe, but also because of the deliberate policies aimed at taking advantage of the international demand for soybean. The Czech republic increased production almost five-fold, while this factor is close to thirty in Ukraine.

Other crops that have seen large increases are maize, especially in the north, taking advantage of two main factors: the availability of more cold tolerant varieties, and rising global temperatures, a development paralleling the northward expansion of soybean production in North America into the Canadian Prairies. The European maize boom is centered in the east: an increase of 159% in Poland, and an increase of 480% in Russia, while maize production in Belarus increased by tenfold.

As for potatoes, as mentioned previously, the production decline is a continent-wide phenomenon (figure 5.4) with only a few countries displaying positive production trends, for instance Albania, Macedonia, and Belgium. As shown in figure 5.4, production increases can be brought about by yield increases even when the area decreases (e.g. in the case of Ukraine).

Figure 5.5. Inter-annual variability (risk) of maize production and wheat yield, as measured by the de-trended coefficient of variation between 1998 and 2013



(a) Maize production (b) Wheat Yield

In the south of Europe, the production of the crops that are dominant in the European agricultural landscape elsewhere has been declining, which indicates a relative specialization of Mediterranean crops in the south. Not only does the Mediterranean enjoy a type of agriculture that is different from other parts of the European continent (figure 5.4), but this difference is being exacerbated by current trends in agriculture. Rice is one of the crops for which areas have been expanding (an increase of 10%), together with fodder maize (an increase of 50%) and triticale (an increase of 233%), indicating an increasing focus on animal production.

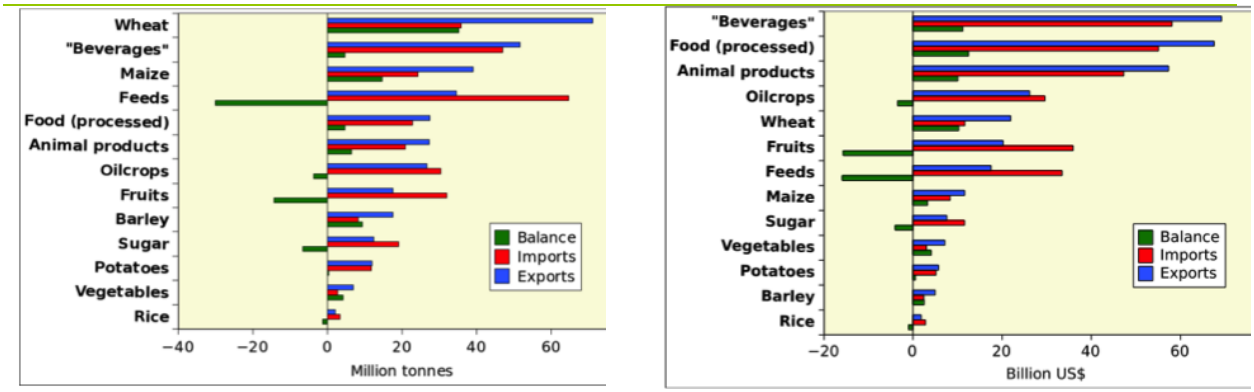
The coefficients of variation in table 5.3 and figure 5.5 are a measure of the risk incurred by farmers in terms of production variability and resulting farm income. Potatoes are generally a low risk crop, but high variability affects maize in the east, particularly at high latitudes, reflecting relative inexperience of farmers with the crop and environmental variability in many areas that are often marginal for the crop. Rapid soybean development in the east of Europe is also accompanied by high variability. Figure 5.5 demonstrates that there are large differences in risk levels for European countries, including for very traditional wheat areas, e.g. the Carpathian basin.

Trade

Wheat, maize and beverages top European agricultural exports (figure 5.6). The category of beverages includes mainly water, wine, beer, and a variety of juices, many of them prepared with concentrates of imported fruits. For wheat, maize and beverages, the trade balance is positive as the continent includes several major producers such as France, Russia, and Ukraine.

In the category of feeds, the continent suffers a deficit, which is certainly one of the factors why the noted increase in soybean cultivation is taking place. The demand for soybeans is mostly driven by China but demand for it is high globally and there are no signs of abating demand, especially if projections of meat demand (and the required animal feeds) are to be trusted.

Figure 5.6. European agricultural imports and exports by volume (left) and by value (right) in 2012



(a) Imports and Exports by Volume

(b) Imports and Exports by Value

Note: This table is based on the 50 major commodities as listed by FAOSTAT.

In terms of value (figure 5.6, right), beverages take up the first place with a value of about 69 billion US$ thanks to wine, beer, and juices, followed by the highly value-added processed food (worth 67 billion US$) which constitutes, incidentally, a partial re-exportation of imports, e.g. durum wheat imports from Italy as macaroni, or cocoa beans imported as fruit and exported as chocolate and pastry from Belgium and Switzerland.

Table 5.4. Relative contribution and rank of wheat, maize, soybeans, potato, and barley among the fifty main imports and exports of the European regions

	Imports											
	Europe		East		North		South		West		EU	
	Mt	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Wheat	33.0	1	6	3	11	2	45	1	38	3	94	1
Maize	24.3	3	8	5	9	5	46	2	38	4	98	3
Soybeans	15.3	5	6	24	9	10	37	4	49	6	92	5
Potatoes	8.5	9	11	23	10	20	24	7	56	9	93	8
Barley	8.1	12	14	16	10	26	14	14	62	8	91	12

	Exports											
	Europe		East		North		South		West		EU	
	Mt	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Wheat	67.0	1	50	1	9	1	3	8	38	1	62	1
Maize	39.0	2	70	2			7	3	23	2	49	2
Barley	17.5	3	46	3	15	2			38	6	65	4
Potatoes	7.9	12				17		40		7		10
Soybeans	4.1	24	48	9					52	26	60	33

Note: EU: European Union, Mt: million metric tons.

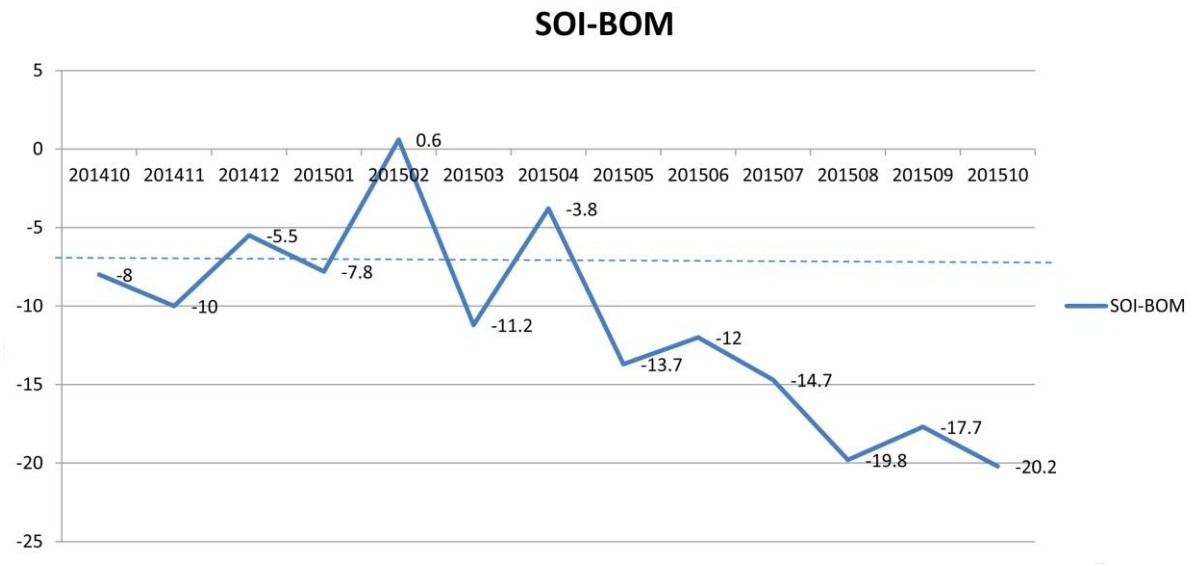
Europe also produces and exports fair amounts of oil crops (27 million tons) but imports palm and groundnut oil, leading to a negative balance in the oil crop category. Grains, including mainly wheat and maize, are relatively minor exports in terms of value.

There are significant differences between regions and countries in terms of trade of agricultural products as is evident in table 5.4. For the major crops, especially wheat, maize, and soybean, about 85% of imports go to western and southern Europe (83%, 84% and 86%, respectively; 94%, 98% and 92% are absorbed by the European Union). Those crops are among the main agricultural imports for the regions. In contrast, the east outperforms all other regions in terms of maize, wheat, and barley exports. Only for soybeans are the contributions of east (48% exported) the west (52% exported) comparable.

5.4 El Niño

El Niño continued to strengthen during the monitoring period. The graph below (figure 5.7) illustrates the behavior of the Southern Oscillation Index (SOI) of the Australian Bureau of Meteorology (BOM) from October 2014 to October 2015. Sustained negative values of SOI below -7 indicate an EI Niño event, while sustained positive values above +7 are typical of La Niña. Values within the range (-7 to +7) indicate neutral conditions.

Figure 5.7. Behavior of the Southern Oscillation Index from October 2014 to October 2015



As shown in the figure, the SOI value stayed below 0 for most of the past 12 months, except in February 2015, after which it dropped continuously to reach a highly negative value of -20.2 in October of this year. Considering the consistently low negative value of SOI and tropical Pacific Ocean temperatures over El Niño thresholds, the status of the ENSO Tracker at the BOM is "real El Niño event as of October 2015"; it is likely that this will persist until the end of this year.

The strong El Niño has led to drier-than-normal conditions in Australia, Indonesia and parts of India, while it has brought heavy rain to parts of North America. According to NOAA there is an 85% chance that the current El Niño will last through to the first months of 2016, with its strength peaking in November or December. Compared to the strongest El Niño on record which occurred in 1997–1998, when the sea surface temperature was 2.3°C above average, NOAA projects that the current El Niño could produce temperatures that are 2°C higher than average, or more. Although El Niño could provide some relief to the current US drought, it is unlikely that one season of above-normal rain and snow can alleviate the four years of drought.

Recently, the FAO released an early warning of El Niño threatening Somalia's humanitarian gains, as El Niño is linked with very heavy rainfall in east Africa. Experts from the FAO warn that this year's El Niño could catch up with the intensity of 1997-1998 El Niño weather events, which left large parts of southern Somalia under water and killed approximately 2,000 people. In Southern Africa, increased drought risk may affect the next two years according to the UK Meteorological Office. CropWatch will continue to closely monitor global impacts of EI Niño in the coming months.