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of the United Nations

GIEWS Updates

VOLUME 2014

The ***GIEWS Updates*** are issued by FAO's **Global Information and Early Warning System (GIEWS)** from mid-2004. The updates focus on developing anomalous conditions aimed at providing early warnings, as well as latest and more elaborate information than other GIEWS regular reports on the food security situation of countries, at both national and sub-national levels.

Bolivia: Severe floods affected large numbers of people and caused agriculture damage in the northern Beni department

Preliminary assessment of flood damage

Heavy rains during January and first half of February 2014 caused rivers to overflow resulting in floods in the low-lying areas of the department of Beni and its southern borders with the departments of Cochabamba and Santa Cruz where landslides occurred. Preliminary official assessments indicate loss of life and serious damage to housing and infrastructure, with at least 60 000 families directly affected. On 27 January, the Government declared a state of emergency in Beni--as well as in several municipalities across the country--and has begun to coordinate and distribute humanitarian assistance, including food and temporary shelter, for the displaced population.

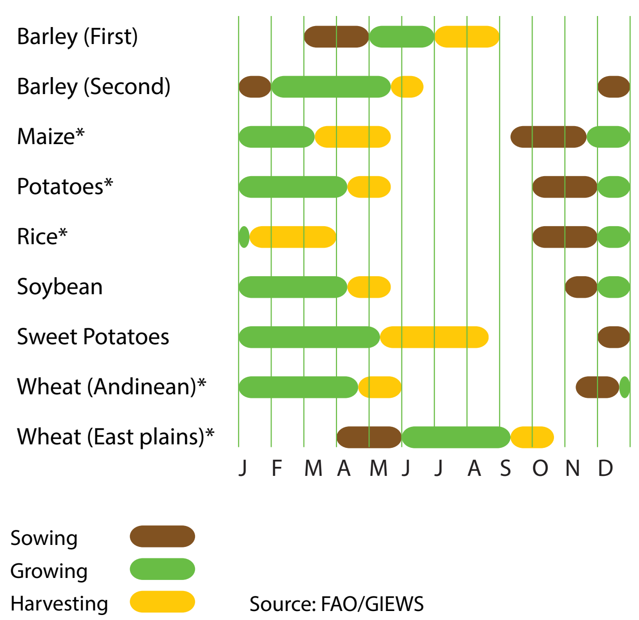
A detailed assessment of the agriculture losses is still not available, but it is anticipated that the livestock is the most affected sector. The department of Beni is the most important bovine livestock producer, accounting for more than 42 percent of the national herd. Early official estimates by 8 February point to almost 60 000 heads of animals lost —or less than 1 percent of the national herd. However, another 1.8 million heads are at risk of disease from the excessive humidity and lack of feed due to the extensive flooding of pasture land; this number represents 21 percent of the national herd and more than half of the bovine cattle population in the department.

With respect to cultivated land, estimates indicate that close to 43 000 hectares of different crops, including rice, maize and cassava, have been negatively impacted by the heavy rains and floods. The department of Beni accounts for 6 percent of national annual rice production and less than 2 percent of total maize output. While the potential crop losses at the national level may not be substantial, the impact on local production and for small farmers--who have suffered partial or total losses of crops and livestock--is severe. The paddy crop, which started to be harvested, is likely to be the most affected as three of the four important rice-producing provinces in the department--Cercado, Marban and Moxos--were hit by the flooding. To mitigate the potential reduction of household income due to crop losses, the Government, in mid-February, created a special fund under its national crop insurance programme worth BOB 24 million (more than USD 3.5 million) to provide BOB 1 000 per hectare of destroyed cropped land. Annexes 1 and 2 present FAO estimates of the percentage of potentially affected agricultural areas by region (Department) and provinces.

Production outlook for the 2014 cereal crops

At the moment of the severe flooding, the 2014 main "de verano" season maize crop was in an advance vegetative stage, while harvesting of the rice crop had just begun. Despite the crop losses in the department of Beni, the overall prospects for this year's "de verano" season remain favourable, since the main cereal producing departments--Santa Cruz, La

Figure 1: Bolivia crop calendar
(* major foodcrop)



Source: FAO/GIEWS

Paz and Cochabamba—have not been severely affected and the abundant rains may have benefited the developing crops in parts. The net effect on total production would need to be assessed later in the season. The rainy season typically goes until March/April and FAO/GIEWS will continue to closely monitor the crop situation.

Food supply situation

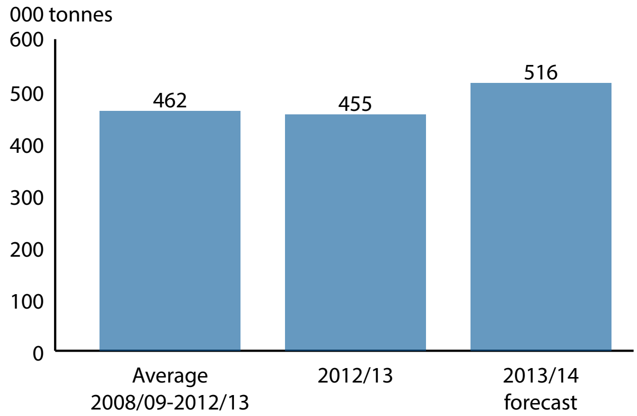
The 2013 aggregate cereal production (first and second seasons gathered until last October) was significantly reduced due to drought conditions and low temperatures during key stages of the cropping season. Aggregate maize production (main and secondary seasons) was estimated at 875 000 tonnes, 13 percent below the previous year's level. Rice production also declined by 13 percent, while wheat was estimated 4 percent less than the below-average 2012 wheat production.

Table 1: Bolivia cereal production

	2008-2012 average	2012	2013 estimate	change 2013/2012
	000 tonnes			percent
Maize	967	1 006	875	-13
Rice (paddy)	458	520	450	-13
Sorghum	398	478	400	-16
Others	311	289	278	-4
Total	2 133	2 293	2 003	-13

Note: percentage change calculated from unrounded data.
Source: FAO/GIEWS Country Cereal Balance Sheets

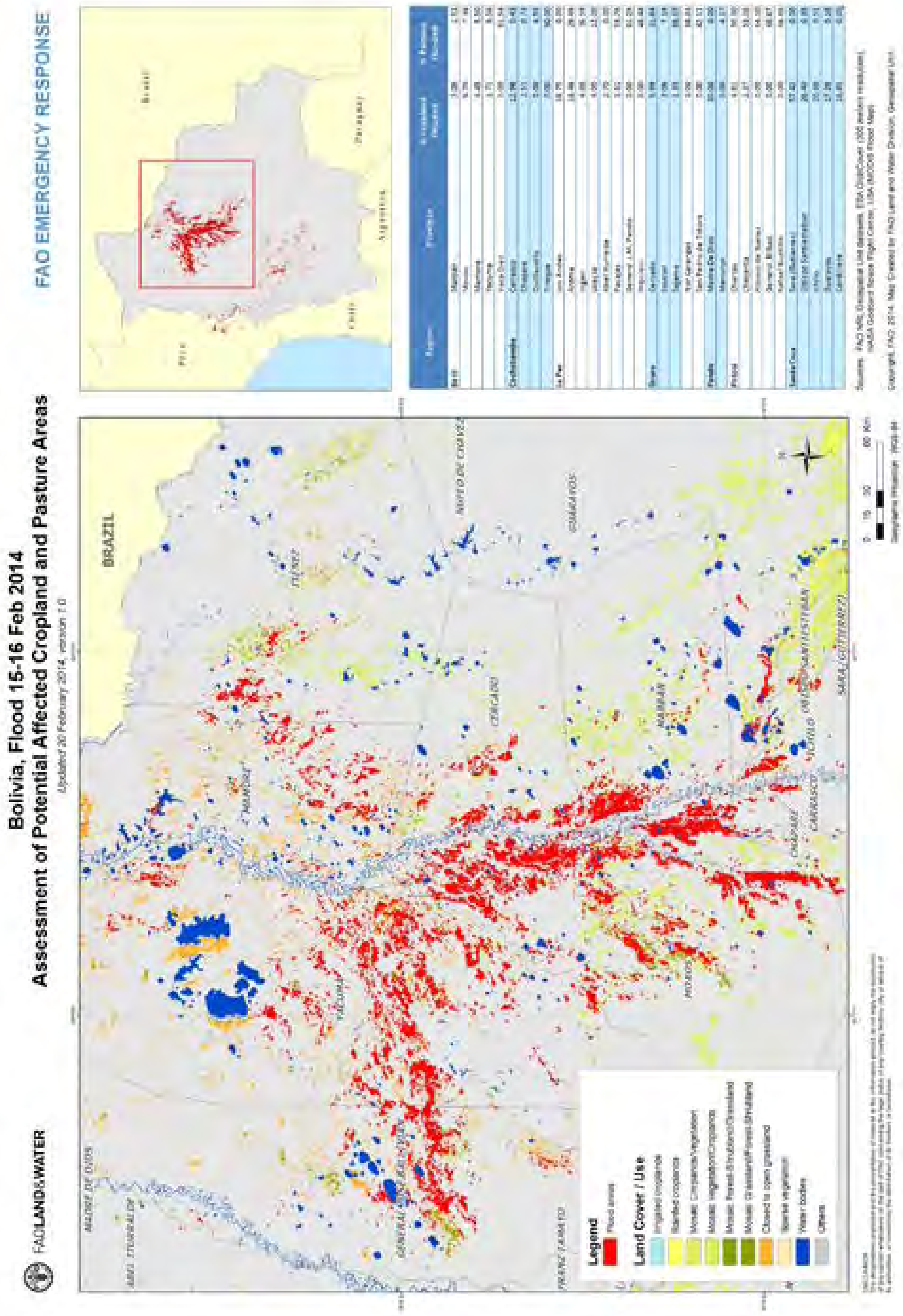
Figure 2: Bolivia total cereal imports



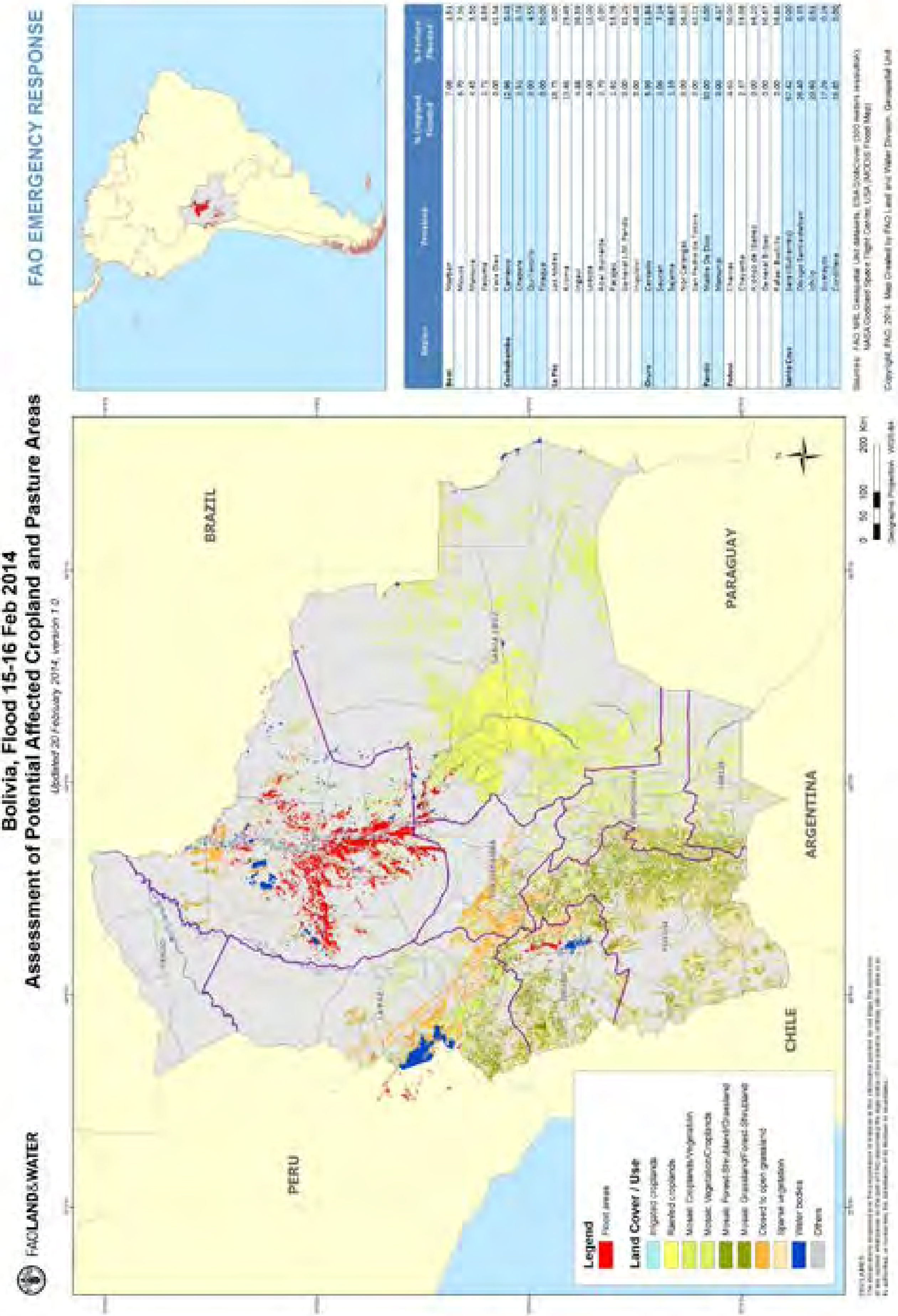
Notes: Total cereal includes rice in milled terms. Split year refers to individual crop marketing years.
Source: FAO/GIEWS Country Cereal Balance Sheets

As a result of the reduced production, cereal imports for the 2013/14 marketing season (May/April) are forecast at 516 000 tonnes or 13 percent above last year's level. The bulk of this amount is wheat and wheat flour, but the increase also reflects higher imports of maize due to the contraction in 2013 production. Bolivia imports almost two-thirds of its wheat consumption requirements, mainly from Argentina—where last year's export supplies were tight. Although the Government responded by eliminating import tariffs for non-Mercosur wheat and importing from alternative sources, wheat prices rose to record levels in January 2014 affecting low-income sections of the population. Argentinian exports in 2014 are anticipated to remain low as wheat stocks are still below average levels.

Annex 1: Assessment of potential affected cropland and pasture areas in the department of Beni



Annex 2: Assessment of potential affected cropland and pasture areas at the national level



28 March 2014

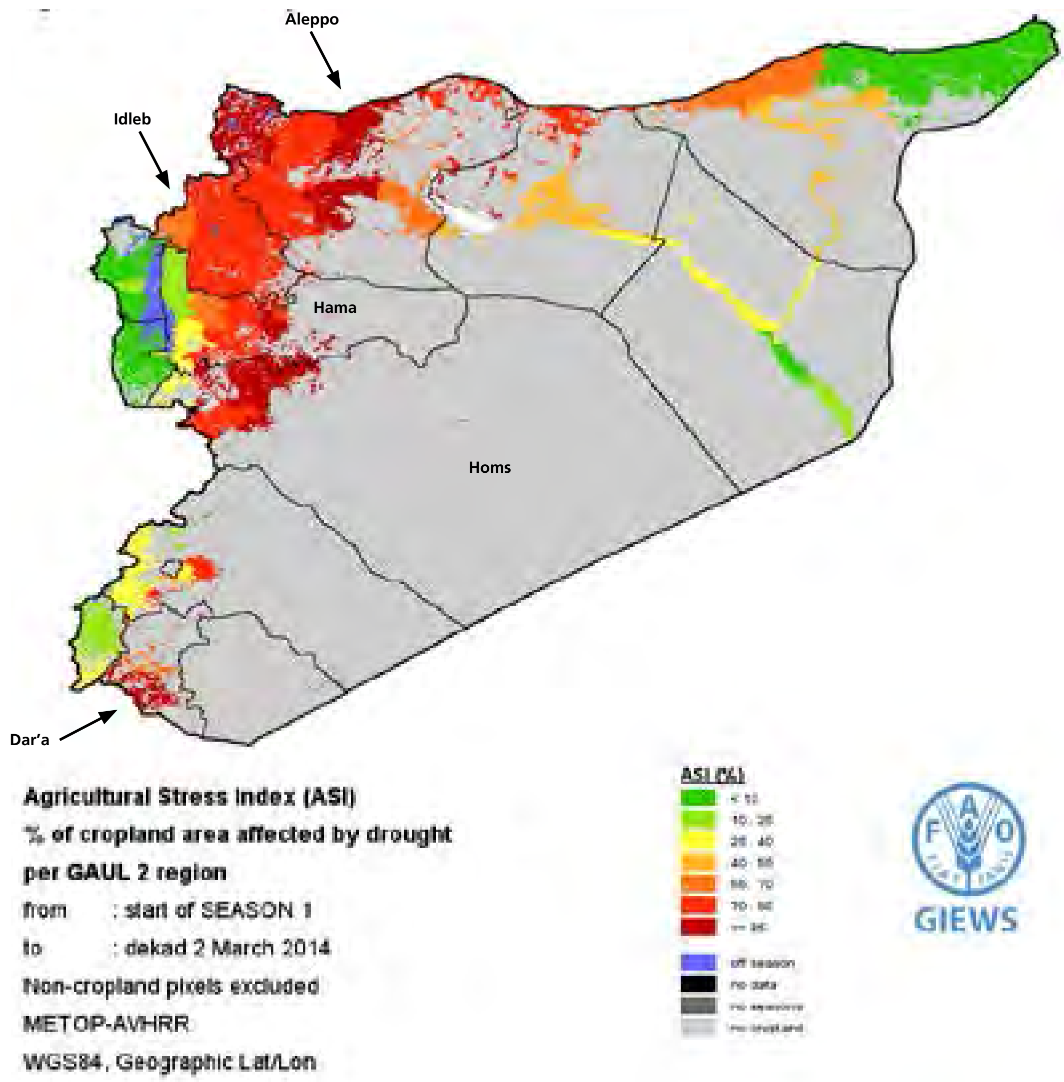
GIEWS Update

Syrian Arab Republic: Concern over drought conditions

Prospects for the winter wheat and barley crops, for harvest from May 2014, are unfavourable. The persistent civil insecurity and conflict continue to hamper agricultural production, as access to farmlands becomes difficult. Shortages of fuel to operate irrigation pumps and other equipment have compounded the problem.

Furthermore, additional concerns are growing with drought conditions detected in main cropping areas of the country. Remotely-sensed data and information reveal that vast areas in the northwest have received well below average rainfall in the last few months. Large swaths of cropping areas in Aleppo, Hama, Idleb, Homs and Dar'a governorates may have been affected by drought in some areas. Close monitoring of these developments is warranted.

Syrian Arab Republic - Agricultural Stress Index for the current crop season



Note: The **Agriculture Stress Index (ASI)** is a recently developed FAO indicator that highlights anamalous vegetation growth and potential drought in arable land during the crop growing season. ASI integrates the Vegetation Health Index (VHI) in two dimensions that are critical to assess a drought event in agriculture: temporal and spatial. ASI assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought (pixels with a VHI value below 35 percent – identified as critical level in previous studies to assess the extent of the drought). The whole administrative area is classified according to the percentage of arable area affected by drought conditions.

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

GIEWS Update

15 May 2014

Syrian Arab Republic: Continued conflict and drought conditions worsen 2014 crop production prospects

Highlights:

- Current forecasts indicate a severe reduction in cereal crop production in 2014 due to the impact of conflict and drought conditions.
- Food price inflation remains significantly high, but some declines were recorded in late 2013.
- Livelihoods have suffered immensely following the conflict resulting in deaths and destruction and about 6.5 million Internally Displaced Persons (IDPs) together with about 2.7 million more registered refugees in near-by countries of the region.
- Continued and strengthened assistance is required for food and the agricultural sector to support livelihoods.

Following the update of 28 March 2014 on concerns about drought conditions in the Syrian Arab Republic, FAO has been closely monitoring the situation in cooperation with national authorities. Analysis based on satellite imagery together with field reports indicate that vast areas in the northwest of the country received well below-average rainfall during January and February 2014, which coincides with crucial periods of crop germination and establishment stages (Figure 1). Consequently, large swaths of cropping areas in Aleppo, Hama, Idleb, Homs and Dar'a governorates were affected by drought conditions (Figure 2). Despite some resumption of rains in March and April, the below-average cumulative rainfall is expected to affect yields, particularly the rainfed barley and wheat crops.

Figure 1: Crop calendar

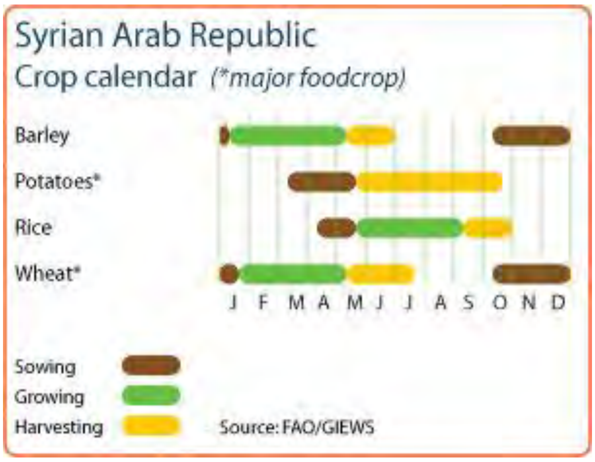
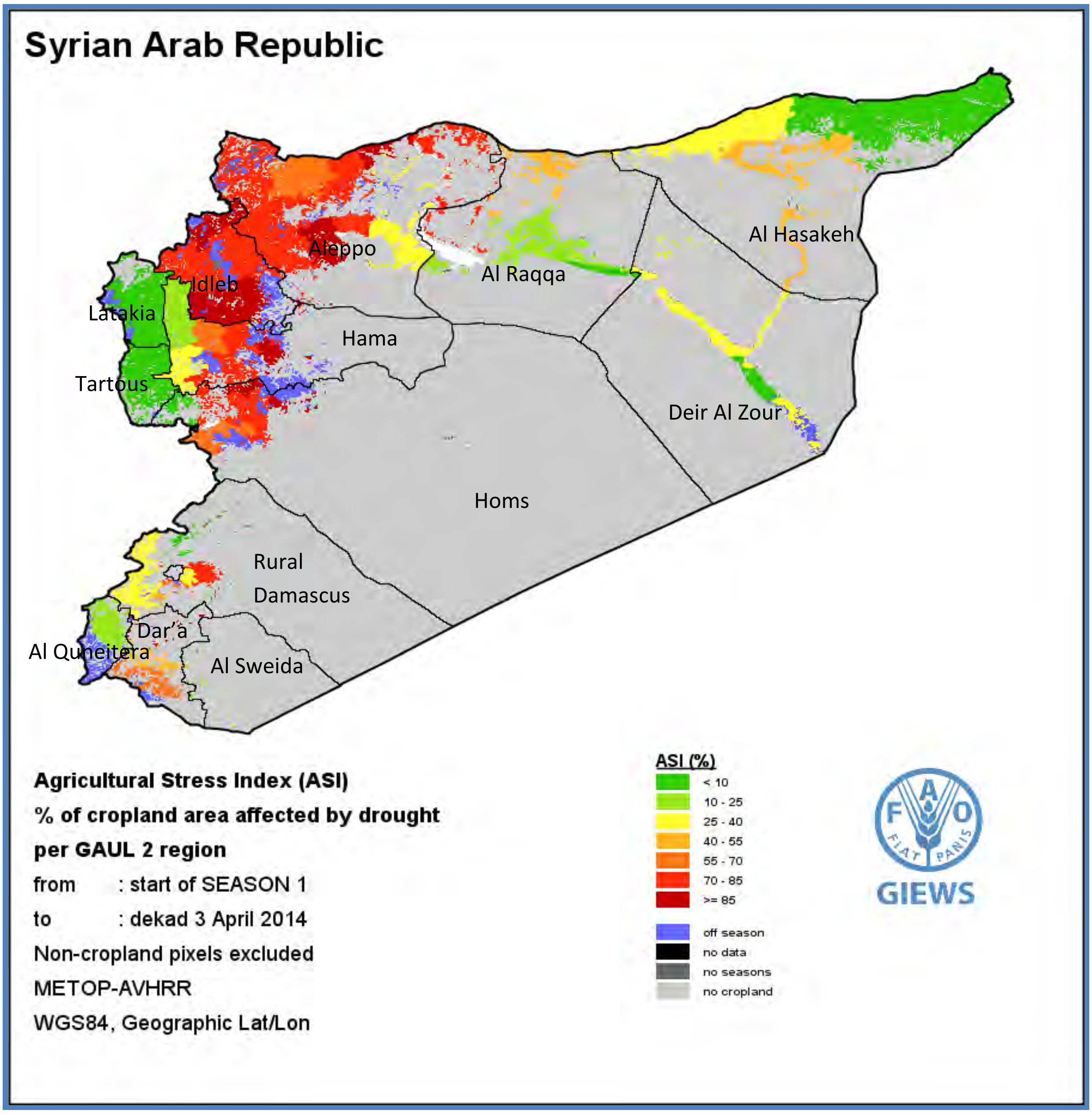


Figure 2: Agricultural Stress Index for the current crop season



Note: The **Agriculture Stress Index (ASI)** is an FAO indicator that highlights anomalous vegetation growth and potential drought in arable land during a given cropping season. ASI integrates the Vegetation Health Index (VHI) in two dimensions that are critical to assess a drought event in agriculture: temporal and spatial. ASI assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought (pixels with a VHI value below 35 percent – identified as a critical level in previous studies to assess the extent of the drought). The whole administrative area is classified according to the percentage of arable area affected by drought conditions.

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Reduced plantings for wheat and barley

Recent estimates by the Syrian Ministry of Agriculture and Agrarian Reform (MAAR), (Table 1) indicate a large reduction in winter cereal cropped area in 2013/14, the bulk of which is normally carried out between October and December (Figure 1). In addition, planted area estimates in 2013/14 are about 21 percent lower than the planned level at the start of the season. The poor seasonal rains compounded the effect of other production constraints that are associated with the ongoing events in the affected governorates. Reduced availability and high input prices, damage or destruction of farm equipment, including irrigation pumps, abandoned land and power shortages have negatively impacted farming activities. The below normal rains, therefore, aggravated the already precarious situation.

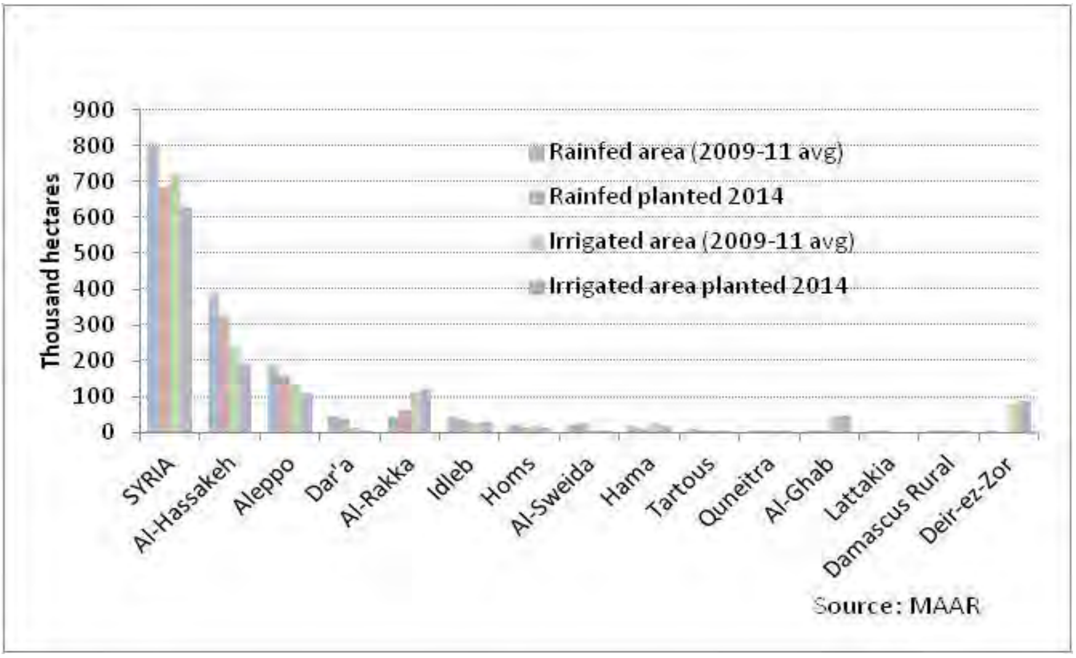
The total wheat planted area is estimated to have declined by about 15 percent relative to the recent average (Table 1), with the largest absolute decrease recorded in the key-producing governorate of Al-Hassakeh. Despite the overall reduction at the national level, increases were recorded in some areas including Al-Raqqa, Al-Sweida and Deir-ez-Zor. However, these governorates do not constitute the major growing regions (Figure 3).

Table 1: Estimates/forecast of wheat and barley area harvested

	Average 2007-2011	2011	2012	2013	2014 (MAAR forecast)
Wheat and Barley	2 923	2 814	2 716	2 675	2 506
Wheat	1 542	1 521	1 603	1 374	1 313
Barley	1 381	1 293	1 113	1 257	1 194

Source: MAAR.

Figure 3: Wheat - actual and historical planted area

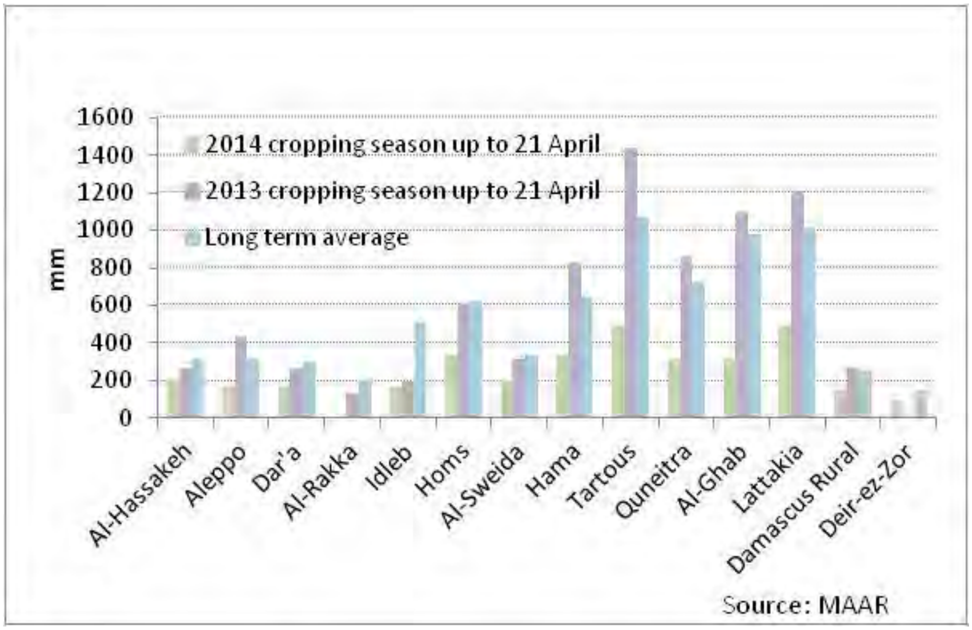


Significant rainfall deficits exacerbate poor crop prospects in 2014

In the 2013/14 cropping season the cumulative rainfall during October to April was well below last year and the long-term average. Some areas experienced significant rainfall deficits ranging from 55 to 85 percent (Figure 4) and the governorates of Quonaitra, Al-Ghab, Tartus, Lattakia and Idleb were put at a "warning" phase by MAAR, as cumulative rainfall was 50 percent below the average.

Despite beneficial rains in March and April in parts of the drought-affected main crop producing areas, remotely-sensed data indicates that vast areas in the northwest continue to remain in a state of significant moisture deficit.

Figure 4: Cumulative rainfall by region up to 21 April and long-term average



Poor harvest is forecast in 2014

Harvesting of 2014 winter grains is expected to start in the forthcoming weeks. The most recent production forecast by MAAR, based on the planted area and applying average yields, indicates that a total of 2.95 million tonnes of wheat will be harvested (about 2.3 million tonnes from irrigated fields and 0.63 million tonnes from rainfed areas). At this level, production is slightly lower than the previous five-year average of 3.2 million tonnes.

Although MAAR's estimates indicate a slight decrease in the yield per hectare, FAO's yield calculations, based on the Agricultural Stress Index (ASI), indicate a much lower yield level of 1.5 tonnes/ha (nearly 38 percent lower than MAAR's estimate of 2.4 tonnes/ha). Accordingly, based on the FAO model, wheat production is forecast at about 1.97 million tonnes, 18 percent below last year's poor crop and 38 percent below the five-year average (2009-13). A detailed description of model results and methodology is presented in the Annex.

Table 2: Cereal production

Cereal production

	2009-2013 average	2013 CFSAM	2014 FAO f'cast	change 2014/2013
	000 tonnes			percent
Wheat	3,177	2,400	1,969	-18
Barley	797	993	346	-65
Others	141	88	88	0
Total	4,116	3,481	2,403	-31

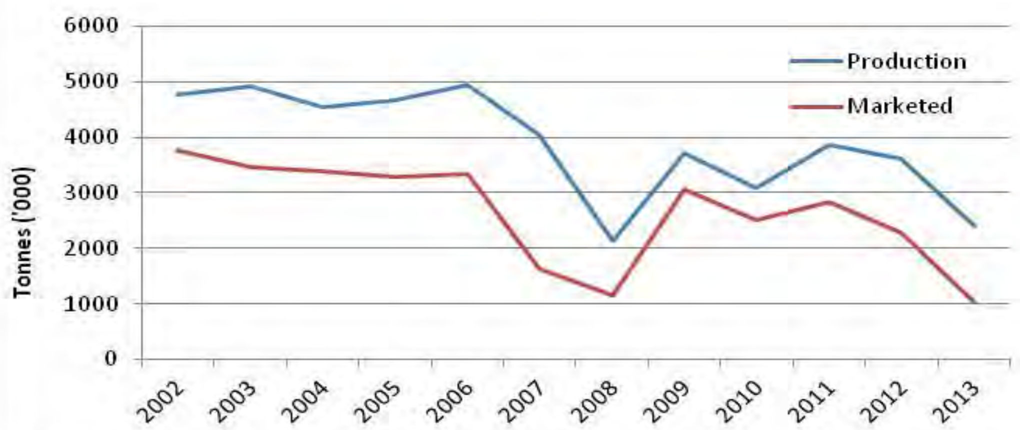
Note: percentage change calculated from unrounded data.
Source: FAO/GIEWS Country Cereal Balance Sheets

Cereal imports expected to increase in the 2014/15 marketing year (July/June)

The Syrian Arab Republic relies significantly on food imports, which normally account for a large share of the total domestic utilization. Based on the projected cereal production in 2014, cereal imports are expected to increase in the 2014/15 marketing year (July/June). The latest available data indicates that cereal imports between July 2013 and February 2014 amounted to about 1.3 million tonnes, of which around 890 000 tonnes was wheat.

On the other hand, the annual quantity of domestic wheat marketed through the General Organization for Seeds (GOSM) and the General Organization for Cereal Trade and Processing (GOCTP) has decreased from an estimated 2.8 million tonnes in 2011 to 1 million tonnes in 2013 (Figure 5). This reduction is mainly attributed to lower harvests and logistics difficulties, associated with transport and storage facilities, following the escalation of the conflict.

Figure 5: Wheat production and quantities marketed through GOSM and GOCTP*

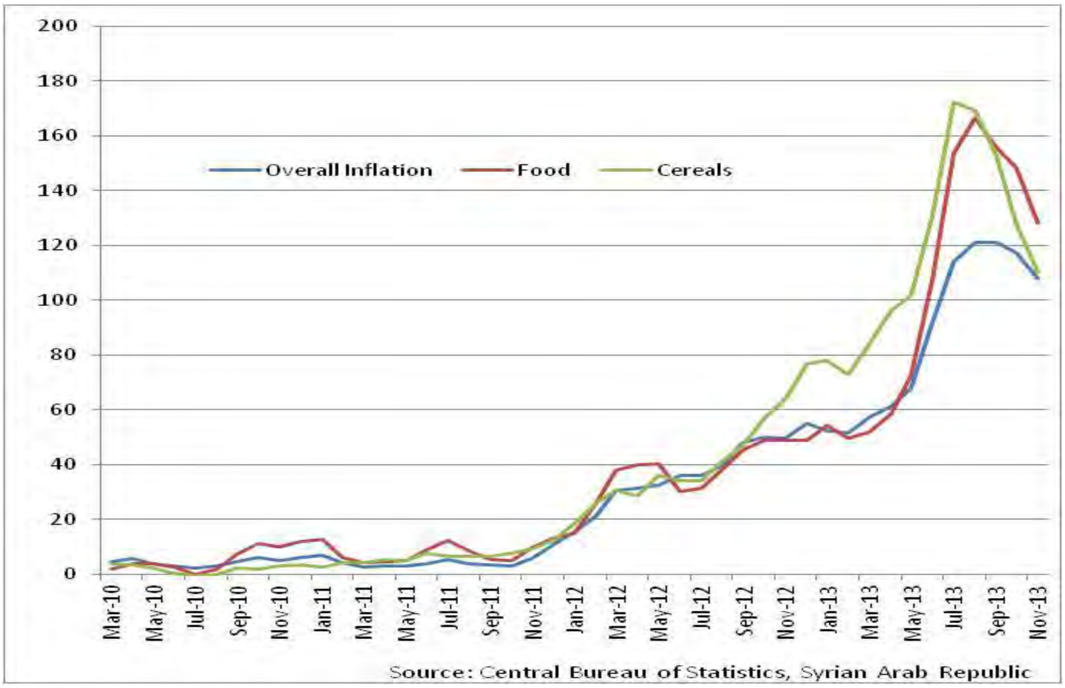


Source: MAAR & CFSAM production estimate for 2012 and 2013
*Quantities marketed refer to procurement by the General Organization for Seeds Multiplication and the General Organization for Cereal Trade and Processing

Inflation rate remains high, but some declines were recorded at the end of 2013

The inflation rates for cereal and food prices declined at the end of 2013, but still remain significantly high, with the annual inflation rate in November 2013 (latest available data) estimated at 108 percent, compared to the peak of 166 percent in August 2013 (Figure 6). The lower rates can be partially attributed to the more subdued increases in the exchange rate during the second half of 2013. Shortages of food items, however, continue to exert upward pressure on prices. With the expected below normal cereal harvest and the subsequent widening gap between local production and domestic requirements, pressure on food inflation is likely to remain high over the coming months.

Figure 6: Monthly rate of inflation (year-on-year)



Food security conditions continue to deteriorate

As of December 2013, the number of Internally Displaced Persons (IDPs) reached 6.5 million from 4.25 million in July 2013. Households' capacity to access food has deteriorated sharply and is expected to deteriorate further, as a result of high levels of unemployment, reduced income generating opportunities, high inflation, depreciation of the local currency, disruptions in the supply chain and an overall contraction in the economy by 18–20 percent between 2012 and 2013. In response, WFP launched a Revised Emergency Operation in January 2014 aimed at providing assistance to an additional 250 000 beneficiaries bringing the total to 4.25 million beneficiaries in the country with a total cost of about USD 915 million.

About 2.7 million registered Syrian refugees in the region

As of early May 2014, almost 2.7 million refugees were registered in the region covering Egypt, Iraq, Jordan, Lebanon and Turkey. Although WFP continues to provide food assistance to vulnerable Syrian populations in the region, resources in host communities remain under strain. WFP assistance in neighbouring countries has been scaled up to reach more than 2.5 million beneficiaries by December 2014, more than three times the 795 000 individuals assisted as of June 2013.

Safeguarding livelihoods

FAO's assistance focuses on safeguarding and supporting livelihoods by protecting, restoring and improving food and agricultural systems of vulnerable affected households. Since the beginning of the conflict in 2011, FAO has been providing support to the most vulnerable affected rural and peri-urban families in order to mitigate the consequences of the ongoing conflict on their food security and livelihoods. During the 2013/14 winter cropping season, FAO assisted nearly 29 000 farming families (in Idleb, Aleppo, Al Hasakeh and Hama governorates) through the distribution of wheat and barley seeds. In addition, support to the livestock sector, in the form of feed and veterinary assistance, continues to be provided.

Under the Syria Humanitarian Assistance Response Plan (SHARP) for 2014, FAO is appealing for USD 43.6 million to assist 135 000 households (about 945 000 people), to sustain households' capacity in own food production (cereal and livestock), while also boosting livelihoods' diversification. Currently, FAO is preparing to support the next winter cereal campaign, targeting 50 000 vulnerable small-scale farming households (approximately 350 000 people) living in conflict-affected areas. This assistance is expected to cover the targeted families' needs for 12 months together with a small surplus to sell. An estimated USD 20 million is required for this assistance with funds required by July 2014 in order to provide the assistance not later than October 2014, the start of the next cropping season. Complementary activities are aimed at supporting animal production and health as well as livelihoods' diversification, mainly through backyard food production (poultry and vegetables).

Despite the potential of agriculture to address some of the mounting food availability constraints, the sector has largely been underfunded during the last three years of conflict, with current funding standing at only 3.8 percent of the requirement for 2014. Insufficient support during 2014 would exacerbate the already fragile food security and further reduce the productive capacity of affected vulnerable smallholders, both in the Syrian Arab Republic and in neighbouring countries.

Climate Impact on Agriculture

ANNEX

FAO Model-Based Forecast of the 2014 Syrian Arab Republic's Wheat and Barley Production

The FAO model-based, which utilizes the percentage of agricultural area affected by drought[1] and the area cultivated estimated by the Syrian Ministry of Agriculture and Agrarian Reform (MAAR), forecast wheat production at about 1.9 million tonnes, 51 percent below the previous 10 year-average (2003-12 Statistics from the Government of the Syrian Arab Republic, FAOSTAT). Similarly, barley production is forecast at about 346 000 tonnes, 55 percent below the previous 10 year-average. If the average area harvested in the previous 10 years was used instead of the current estimates by MAAR, projections of the wheat crop would amount to about 2.3 million tonnes, while barley would amount to 387 000 tonnes.

Table 1. Estimation of Syrian wheat production using remote sensing observations

Scenarios	Wheat					
2014	**Yield (t/ha)**	**Standard Error of Estimation (SEE)**	**Area (ha)**	**Production (t)**	**Variation % Avg (03-12)**	**Variation % (2012)**
Scenario 1: Area cultivated estimated by Ministry of Agriculture	1.50	±0.32	1312535	1968803	-51	-48
Scenario 2: 2008-2012 Average Area Harvested	1.50	±0.32	1529248	2293872	-43	-39
Reference data						
2003-2012 Average	2.40		1663205	3991691		
2012	2.34		1602814	3750585		
2008	1.44		1485900	2139696		

Table 2. Estimation of Syrian barley production using remote sensing observations

Scenarios	Barley					
2014	**Yield (t/ha)**	**Standard Error of Estimation (SEE)**	**Area (ha)**	**Production (t)**	**Variation % Avg (03-12)**	**Variation % (2012)**
Scenario 1: Area cultivated estimated by Ministry of Agriculture	0.29	±0.18	1193755	346189	-55	-52
Scenario 2: 2008-2012 Average Area Harvested	0.29	±0.18	1335106	387181	-49	-47
Reference data						
2003-2012 Average	0.58		1321665	766566		
2012	0.64		1132875	725040		
2008	0.18		1433200	257976		

[1] To calculate the area affected by drought in the agricultural zones, the **Agriculture Stress Index (ASI)** is used. ASI is an index based on the integration of the Vegetation Health Index (VHI) in two dimensions that are critical in the assessment of a drought event in agriculture: temporal and spatial. The first step of the ASI calculation is a temporal averaging of the VHI, assessing the intensity and duration of dry periods occurring during the crop cycle at pixel level. The second step determines the spatial extent of drought events by calculating the percentage of pixels in arable areas which possess a VHI value below 35 percent (this value was identified as a critical threshold in assessing the extent of drought in previous research). Finally, each administrative area is classified according to its percentage of affected area to facilitate the quick interpretation of results by analysts.

Crop Yield Model Development

Crop production statistics

The Syrian Arab Republic's crop statistics (1985-2012) in FAOSTAT was utilized to develop the crop yield model. The Agricultural Stress Index (ASI) that represents the total agricultural area affected by drought at the national level is the predictive variable[2].

Crop yield model

The model utilizes 28 pairs of data. When the independent variable (ASI) equals a value higher than 95, the yield outcome shows a vertical variation that could not be explained by water stress, which would then be replaced by its respective average value. This reduces the degrees of freedom (n). The final model has an exponential relation between wheat yield and transformed-ASI (Figure 1).

The barley yield model (Figure 2) proceeds in similar fashion. Regression results indicate that the ASI explained about 87 percent of the wheat yield variation and 74 percent of barley yield variation.

Production estimates

To estimate the 2014 crop production, estimates of cultivated area for each crop by the MAAR were used, with an unknown standard error for the area estimates. The upper and lower bound of the production estimates were calculated using the standard error of crop yield estimation. To estimate the 2013 production we used the area planted with each crop estimated by the FAO/WFP Crop and Food Security Assessment Mission (CFSAM, 2013). We also use the 2008-12 average of area harvested to produce an alternative scenario of production.

Figure 1: Wheat yield model in which ASI explains 87% of the yield variation

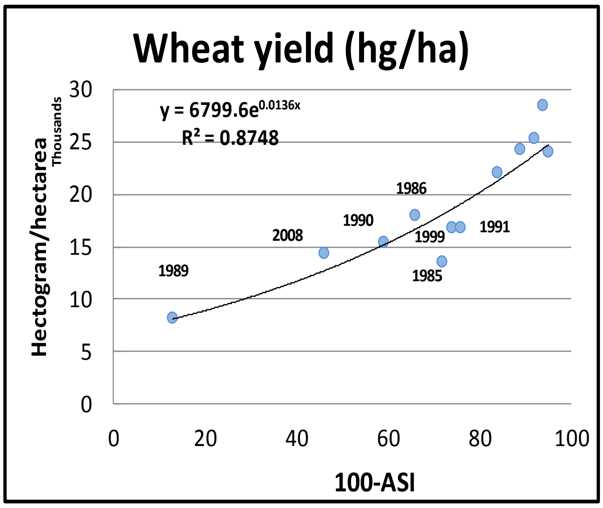
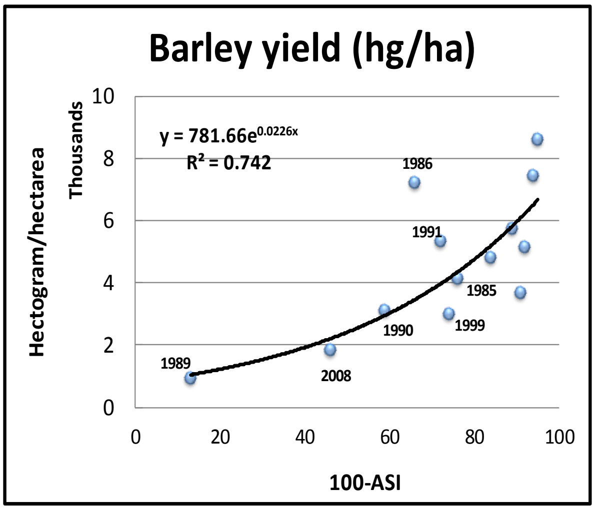


Figure 2: Barley yield model in which ASI explains 74% of the yield variation



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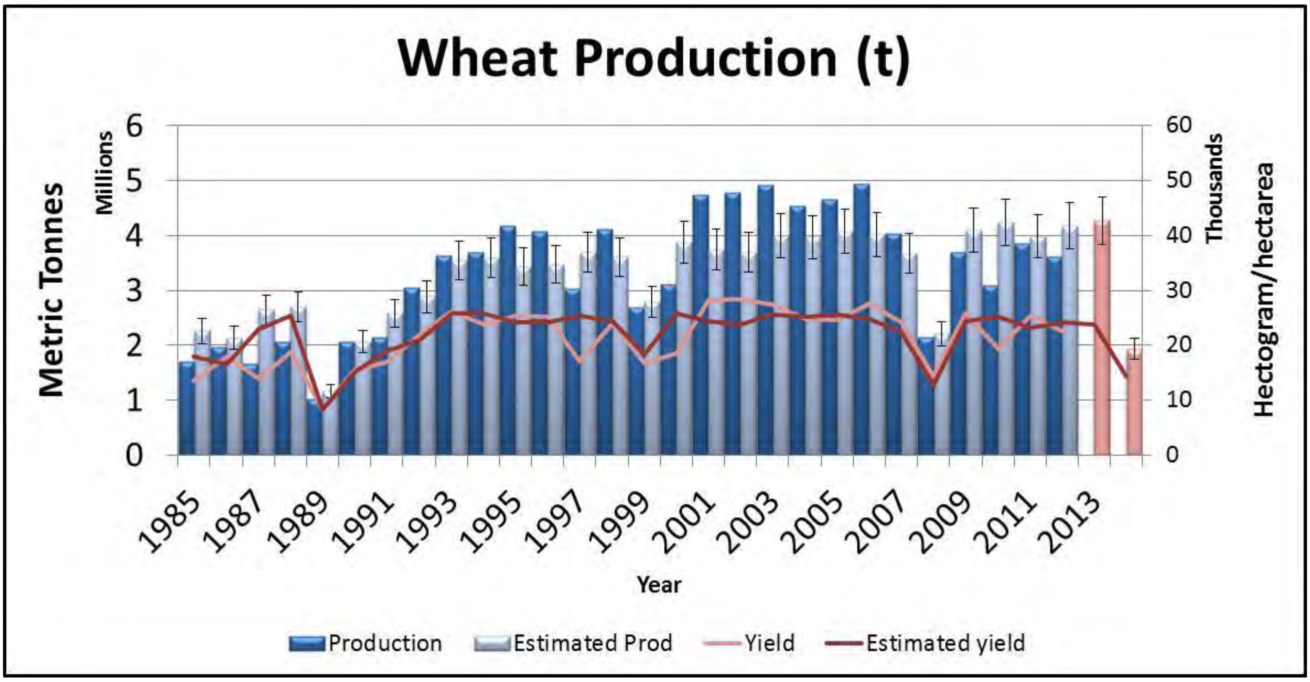
[2] The independent variable was transformed as (100-ASI) and that could be interpreted as the agricultural area not affected by drought.

Figure 3: Model estimates of wheat production and yield



Estimates are based on the FAO-model and area estimated by MAAR. Production estimates show the 10 percent error bar.

Figure 3 presents wheat production estimates for 2013 and 2014 (pink bars). The 2014 estimate is based on the value of ASI until the second dekad of April 2014. The final estimation will be calculated when the crop cycle finishes. The estimated production includes an error bar of 10 percent. Figure 4A and 4B shows the wheat and barley yield (tonnes/hectare), three years affected by drought, 1989, 2008 and the partial results of 2014, are marked and compared to the corresponding ASI maps.

Note the impacts of the different drought years in the governorates. During 1989 and 2008 Al-Hasakeh, normally the most productive governorate, was severely affected; however during 2014 only its sub-districts of Ra's al-'Ayn and Darbasiyah are moderately affected. Al-Hasakeh contributes about 40 percent of the total area planted to wheat (Figure 4C); up to April dekad 2, crops reach about 60-70 percent of the crop cycle (Figure 4D).

Figure 4A: Wheat and barley yield estimates based on ASI
Figure 4B: Maps of ASI value for 1989, 2008 and partial value up to 2nd dekad of April 2014

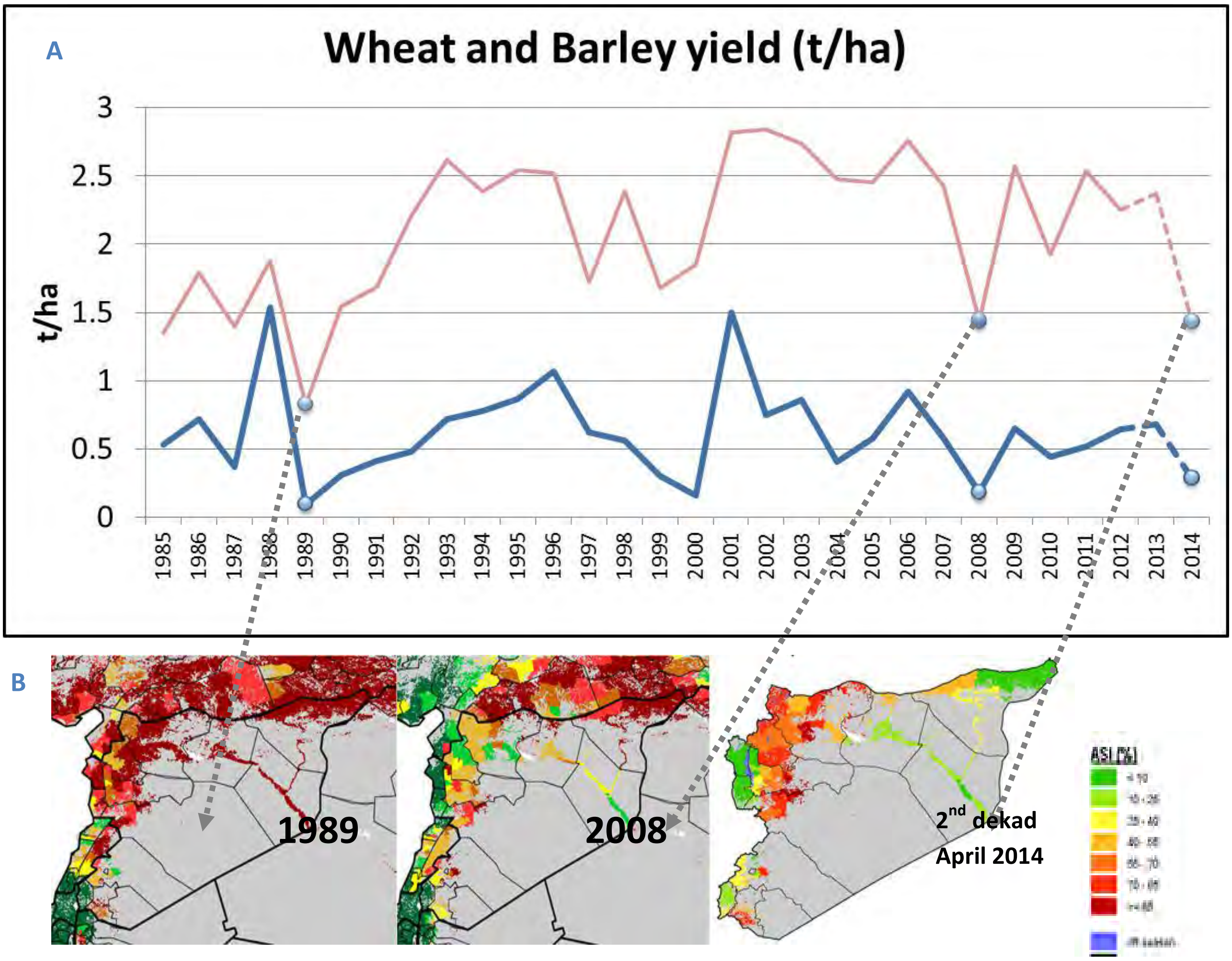
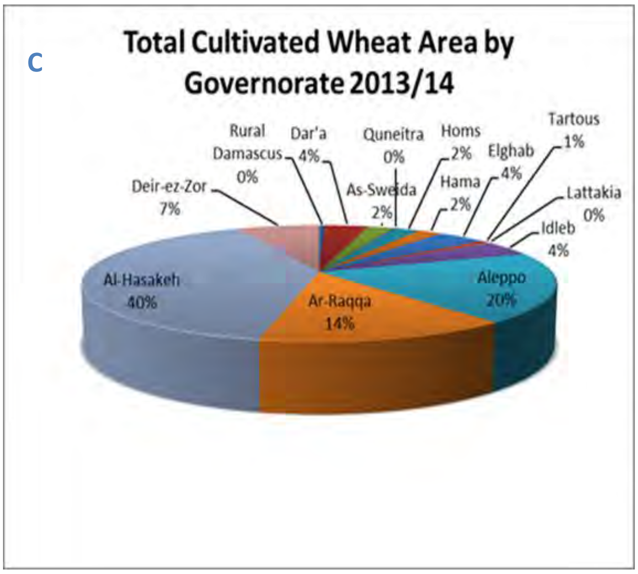
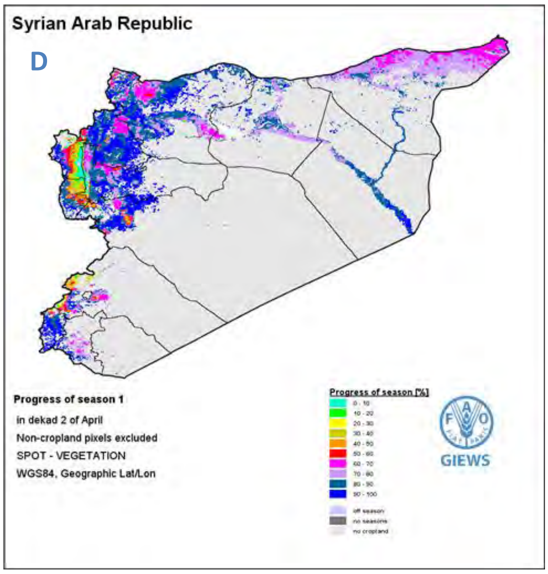


Figure 4C: Total cultivated wheat area by governorate
Figure 4D: Progress of season expressed in percentage





Annex - Disclaimer

This Annex is prepared by FAO's Climate, Energy and Tenure Division (NRC) to support the Global Information and Early Warning System (GIEWS), with information from official and unofficial sources. None of the information in this report should be regarded as statements of governmental views. Furthermore, the designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the FAO concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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GIEWS Update

2 June 2014

Somalia: The prospect of reduced cereal production in the current "gu" season and the impact of increased conflict raise serious food security concerns in southern/central areas

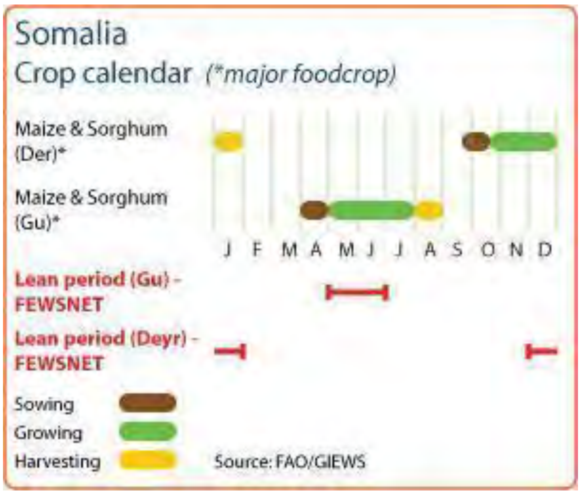
Highlights:

- A poor start to the main 2014 "gu" season rains raises serious concerns in exacerbating the already dire food security situation.
- The output of the secondary 2013/14 "deyr" cereal crops, harvested in January, was well below average levels in central/southern areas following late and erratic rains as well as floods in some riverine areas.
- Recent escalation of conflict in southern parts of the country resulted in large population displacements and heavily constrained the movement of goods and services in some areas.
- Prices of cereals are rising in most markets due to a combination of declining stocks from the last poor "deyr" harvest, uncertainties about harvest prospects for the current "gu" season and trade disruptions due to insecurity in some areas.
- The food security situation is deteriorating as the lean season progresses and the aftermath of the recent conflict in some areas continues to disrupt market access.
- Adequate and timely response and a close monitoring of the food security situation is warranted. The 2014 UN Appeal "Strategic Response Plan for Somalia", amounting to USD 933 million and launched in late 2013, has received only 17 percent.

Late and erratic rains affect prospects for the 2014 "gu" season

The 2014 "gu" (April-June) rainy season started in late April in most central and northeastern (Puntland) regions, with a delay of about three weeks. In southern regions, rains began as early as late March in parts (including Bay, southern Gedo and Lower and Middle Juba), allowing for early planting of sorghum and cowpea crops. However, during the whole month of April, precipitations have been well below average and erratic in southern and central regions, affecting crops in the crucial establishment phase. During the first two dekads of May, rains did resume in most parts of the country, reducing soil moisture deficits and allowing for the possibility of replenishment of water and pasture in the North East and for re-planting of wilted crops in the South.

Figure 1: Crop calendar



In mid-April, the FAO Agriculture Stress Index (ASI) highlighted potential drought conditions in the regions of Lower and Middle Shabelle, and in parts of southern Mudug and western Galbeed in Somaliland. During the second dekad of May (see Figure 2), ASI indicates a slight improvement in southern Middle Shabelle and northern Lower Shabelle following the moderate rains received.

The 2014 "gu" harvest, normally carried out from the end of July through August, is expected to be delayed. Performance of rainfall in the next few weeks will be crucial but, in general, the 2014 "gu" production would likely be below average especially following the recent conflict in parts of Lower and Middle Shabelle, Hiran, Bakool and Gedo, where land preparation has been hampered by the temporary displacement of many farmers.

Table 1: Cereal production

Somalia

Cereal production

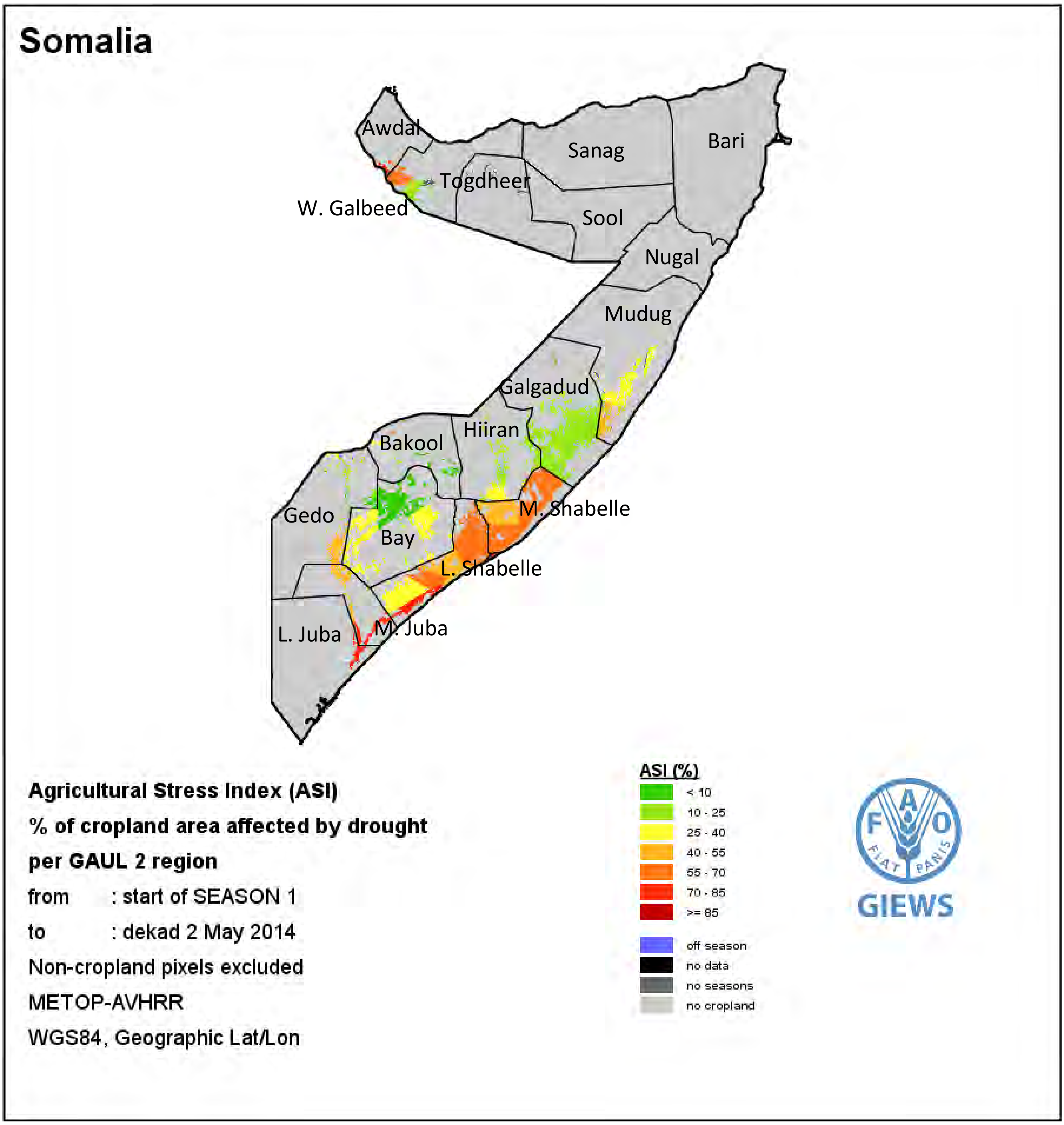
	2008-2012 average	2012	2013 estimate	change 2013/2012
	000 tonnes			percent
Sorghum	147	184	123	-33
Maize	110	96	124	29
Rice (paddy)	2	2	2	0
Others	0	0	0	0
Total	259	282	249	-12

Note: percentage change calculated from unrounded data.
Source: FAO/GIEWS Country Cereal Balance Sheets

A reduced "deyr" crop was gathered last January in central/southern areas

Overall "deyr" production, harvested last January, is estimated at below average levels in major cereal-producing regions of the country, in particular in most of Juba Valley, parts of Lower and Middle Shabelle and Hiraan region. In these areas, rains were firmly established only around mid-November, with 4-6 weeks of delay, leading to a reduction in planted area (especially maize) of about 10-30 percent, and had erratic distribution and low amounts until their cessation. In some surplus-producing areas of Middle and Lower Shabelle, extensive river flooding in November damaged germinating crops. In Lower Shabelle, cereal production was affected by a reduction of planted area, as several farmers switched to sesame due to the expected higher returns compared to the then low local cereal prices. The 2013/14 "deyr" harvest is estimated at about 88 000 tonnes of cereals, about 20 percent below the last five-year average.

Figure 2: Agricultural Stress Index for the current crop season



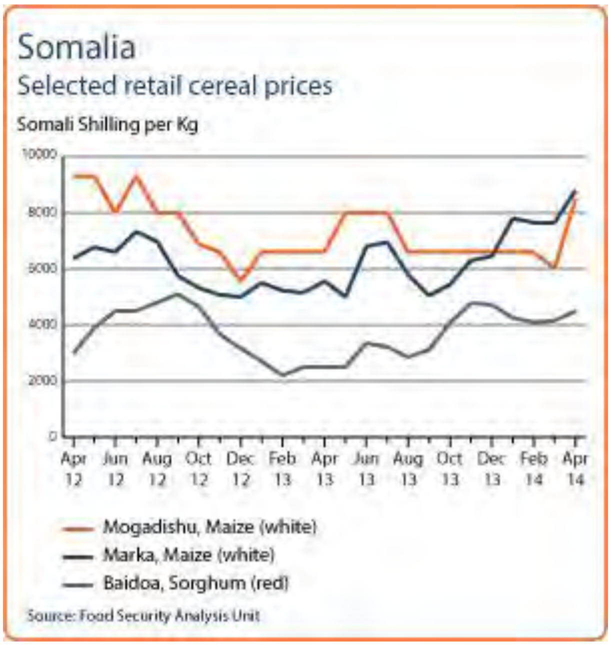
Note: The **Agriculture Stress Index (ASI)** is a recently developed FAO indicator that highlights anomalous vegetation growth and potential drought in arable land during the crop growing season. ASI integrates the Vegetation Health Index (VHI) in two dimensions that are critical to assess a drought event in agriculture: temporal and spatial. ASI assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought (pixels with a VHI value below 35 percent – identified as critical level in previous studies to assess the extent of the drought). The whole administrative area is classified according to the percentage of arable area affected by drought conditions.

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Food prices rise following reduced harvest and poor crop prospects

Prices of locally-produced coarse grains remained firm in March in most markets located in key-producing areas of the south. The 2013/14 "deyr" cereal output was well below average and stocks were not fully replenished and as a consequence, prices increased in April at faster than normal rates. Serious disruptions in markets and trade activities caused by the recently-intensified conflict in southern and central regions exerted further upward pressure on prices. For instance, wholesale prices of maize increased in April in the capital Mogadishu and in Marka, located in the important maize-producing region of Lower Shabelle, by 42 and 15 percent, respectively. Similarly, sorghum prices rose in Baidoa and Beletweine markets, located in the sorghum belt, by 8 and 25 percent, respectively. April prices of maize and sorghum were up to 60 and 80 percent higher than one year earlier, respectively, also due to the scaling back of humanitarian assistance operations.

Figure 3: Selected retail cereal prices



Prices of imported rice were stable in recent months at around the same levels of 12 months earlier, due to low prices on the international market and improved functioning of main entry ports.

Worsening food security conditions

Currently the number of people in need of humanitarian assistance is estimated at about 860 000, including over 200 000 children under the age of five years. As the lean season deepens until the next "gu" harvest, food security conditions are expected to further deteriorate due to depleting stocks and increasing prices of main staple crops. In addition, the recent conflict which caused displacement, disrupted trade flows and limited access to humanitarian assistance; the below average 2013/14 "deyr" season harvest last February and the ensuing food price increases, together with the unfavourable prospects for the current "gu" season are all adding up resulting in serious deterioration of the food security situation.

Food security conditions are then expected to improve slightly in August/September when the 2014 "gu" harvest will be available for consumption. However, as the "gu" output is forecast at below average levels, its positive effects on food availability and access are likely to be moderate.

Ongoing/planned FAO activities on agricultural and livelihood support

In the framework of the agricultural/livelihood support, FAO in Somalia i) supports the diversification of communities' livelihood strategies through the distribution of productive inputs and post-harvest equipment; the implementation of Cash-for-Work activities; the establishment of Farmer/Pastoral Field Schools and the support to the targeted households in enterprise creation with the organization of the establishment of business associations. In addition, FAO ii) aims to increase the communities' food production in a sustainable manner and in case of chronic pressure or shocks it supports their ability to restore/maintain their productive capacity. This is achieved through the support of local seeds and farm tools' productions, livestock re-stocking; fishing fleet renewal and seeding/reseeding of degraded rangelands pastures with the establishment of tree nurseries. Finally, in the same framework, FAO in Somalia iii) enhances the producer organizations' capacity to sell their produce and obtain better prices in the local markets by facilitating the access of producer groups to credit facilities and iv) facilitates the communities' access to knowledge and support services for productive activities mainly through the establishment of pests and diseases surveillance and response systems including vaccination, treatment and vector control activities.

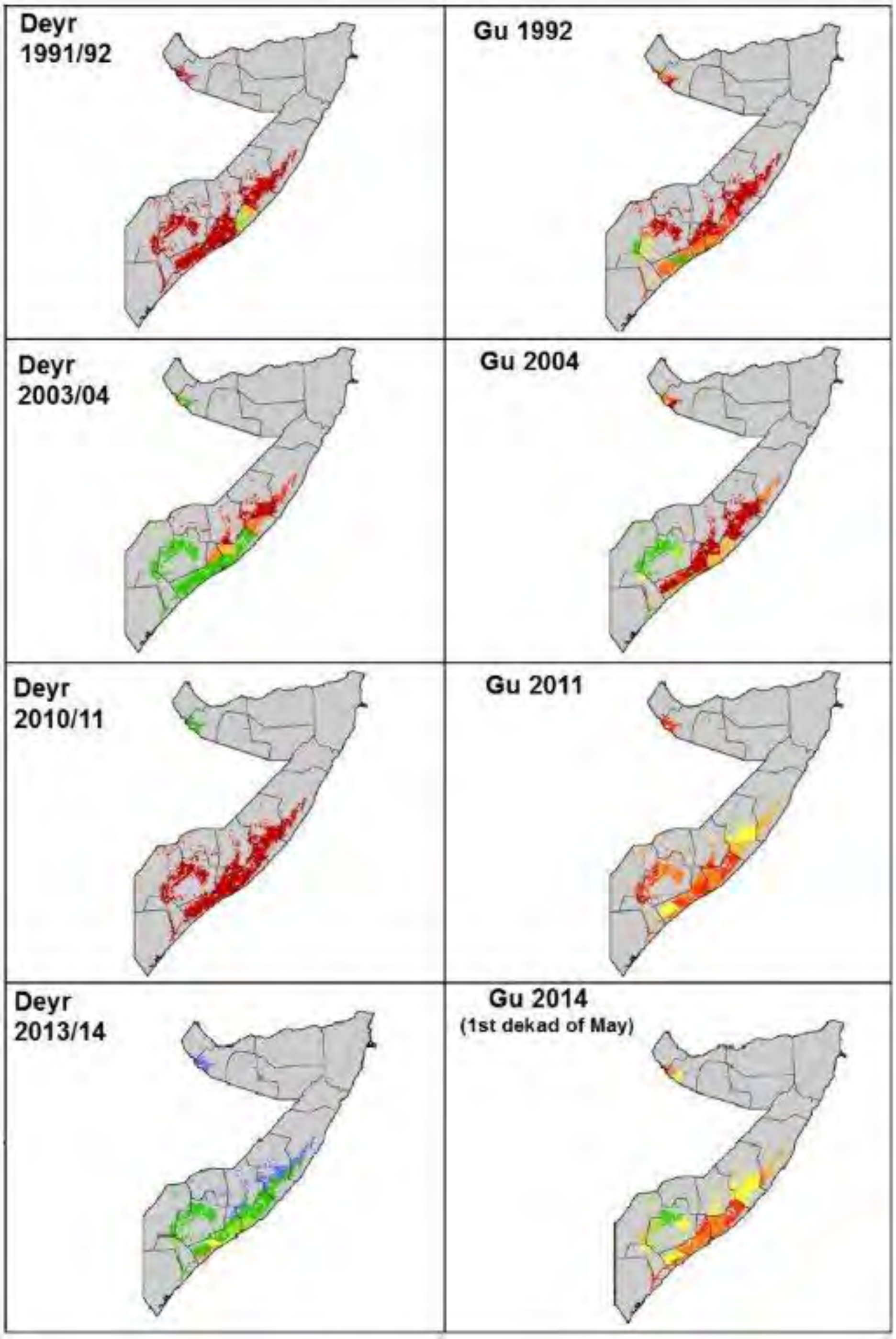
So far, the 2014 UN Appeal "Strategic Response Plan for Somalia", launched in December 2013, has received only 17 percent of the USD 933 million requested, with a shortfall of USD 790 million.

Past performances of cropping seasons in drought and food crisis years

In the last 25 years, several severe food crises were registered due to a combination of conflict and/or floods or drought. In 1992, 2004 and 2011 drought conditions exacerbated the conflict-related displacements and loss of livelihoods, not to mention the large number of deaths and destructions. In these years, a poor "gu" season was preceded by a poor "deyr" production, that combined to decimate crop and livestock production. Figure 4, based on the FAO Agriculture Stress Index (ASI), illustrates this sequence of events.

In 2014, although beneficial rains were received in May, the final outcome of the current 2014 "gu" season may have already been compromised by several factors including delayed and below average rains and the surge in conflict and displacements. The preceding 2013/14 "deyr" season cereal output, harvested last January, is estimated at about 85 000 tonnes of cereals, which is about 20 percent below the last five-year average, but still about four times more than the output gathered in 2010/11 "deyr" that preceded the 2011 famine.

Figure 4: Agricultural Stress Index (ASI) for selected "deyr" and "gu" seasons



Disclaimer

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Greater Horn of Africa: Late and erratic rains raise serious concern for crop and livestock production

Highlights:

- Late and irregular rains in March and April affect main cropping season in parts of East Africa.
- Beneficial rains in May have raised hope of recovery in parts.
- However, concern over drought risk is raised in several areas.

The Greater Horn of Africa (including Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, the Sudan, the United Republic of Tanzania and Uganda), includes semi-arid areas that are susceptible to devastating droughts and high risk of food insecurity. A combination of agro-climatic constraints including aridity, erratic rainfall, soil erosion and deforestation; challenging socio-economic factors, including high population growth rates, predominantly traditional agriculture characterized with low productivity in both crop and livestock production, high prevalence of poverty and low incomes; together with political instability and prevalence of conflict and civil insecurity render millions of people in the subregion to severe food insecurity and under-nutrition. Rural populations relying on rainfed agriculture and pasture are particularly exposed to large seasonal and inter-annual fluctuations in water availability.

On the other hand, seasonal rainfall patterns in the subregion are largely influenced by fluctuations of the Inter-Tropical Convergence Zone (ITCZ)[1/] that determine the large-scale spatial patterns of phenology. Except for the areas along the White Nile River, most of the northwestern part of the region experiences one single rainy/cropping season while most of the southeastern parts of the subregion enjoy two growing seasons each year, except for some inland areas in Kenya and parts of the coastal area of Kenya and Somalia. The relative agronomic importance of the two seasons, as well as their timing, may vary across regions.

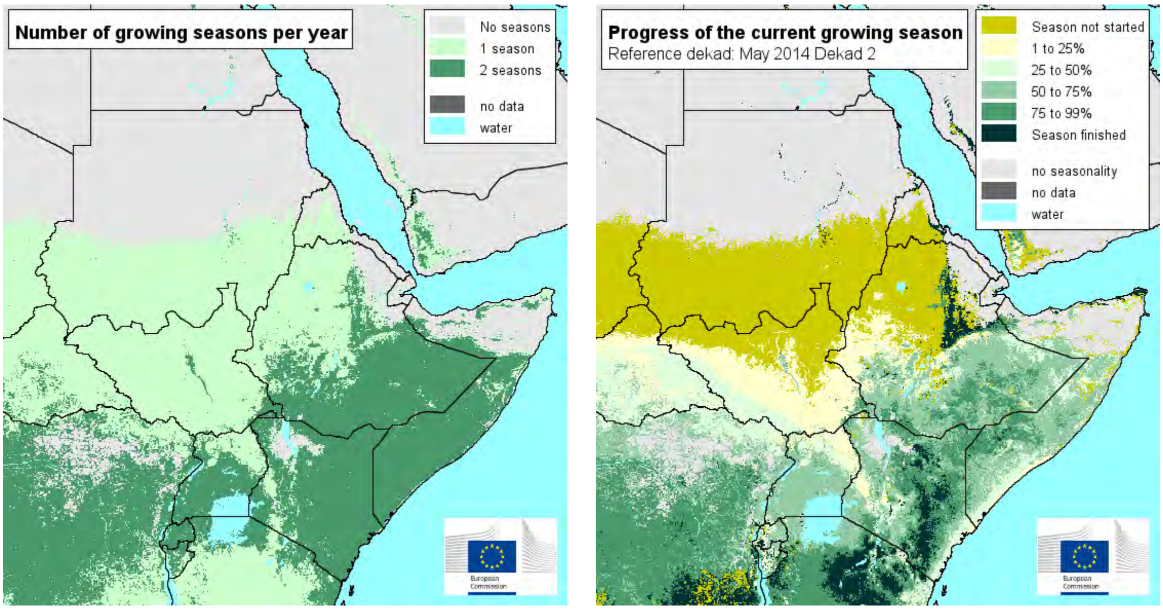
1/ The Inter-Tropical Convergence Zone (ITCZ) is a broad low-pressure area next to the equator where north-easterly and south-easterly trade winds converge. The seasonal north-south oscillations of this belt are an important driver for rainfall in many areas of the Sahel and in East Africa.

Report prepared in collaboration with the Joint Research Centre (JRC) of the European Commission (EC)

The timing of the onset, the duration and the intensity of the seasonal rainy periods are highly variable in space, and therefore different countries and areas are affected differently. Depending on their severity and spatial extent, drought events may eventually lead to poor crop and livestock production in turn leading to severe gaps in food supplies. Often these shortfalls are large and coupled with high food prices, political instability and other aggravating factors result in severe food and humanitarian crisis.

Over the last three years, from late 2011 to early 2014, the bi-modal rainfall areas of the subregion have experienced six consecutive good or relatively good rainy seasons with some local exceptions such as the northern and eastern Pastoral areas in Kenya that experienced a poor 2013/14 short rains season. However, the onset of the current 2014 main rainy season in the tropical parts of the subregion was characterized by late and erratic rainfall. Although some improvements were observed in May in the performance of rains, a significant moisture deficit is forecast, if the normal period of rainfall cessation in June holds.

Figure 1: Number of growing seasons per year and current progress

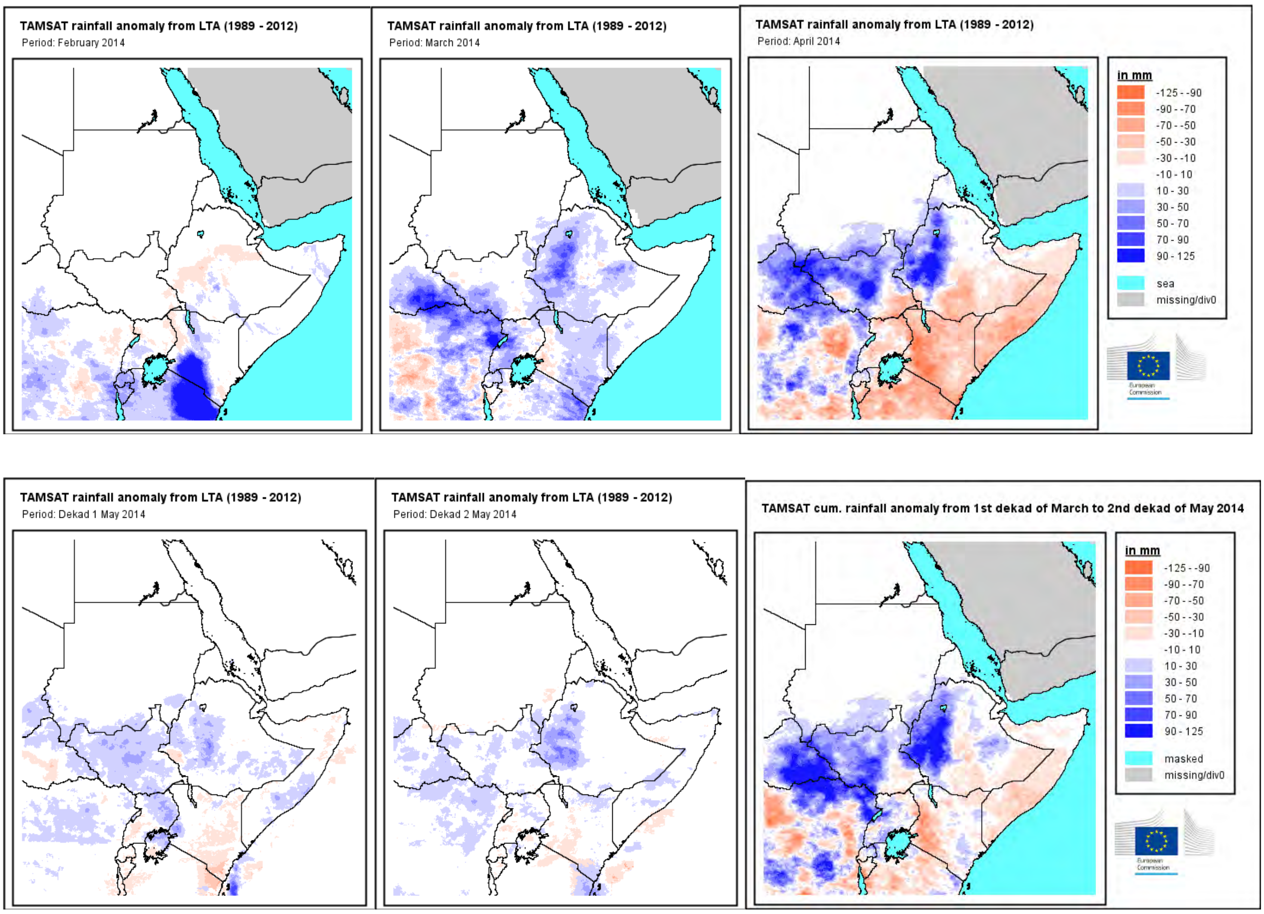


Note: The Figure on the left shows spatial distribution of seasonality in the region, as derived from an analysis of the long-term average (LTA) NDVI signals. The Figure on the right shows the progress of the current vegetative season across the region on 20 May, both for uni-modal and bi-modal areas.

Analysis of the 2014 rainy season, until mid-May 2014

The 2014 rainy season deviated from normal "average" patterns since the beginning of the year. In January and February, which normally constitute part of the dry season, an intensive tropical storm in the Indian Ocean pushed humid air masses northwards resulting in unusual rains in February over a large North South belt reaching from the United Republic of Tanzania up to Ethiopia through central Kenya. Rains in March, which marks the start of the rainy season in the western part of the Greater Horn of Africa and of the Belg season in Ethiopia, were above normal in Ethiopia and Uganda, but delayed in western Kenya. In the bimodal areas of the Eastern part of the Greater Horn of Africa the growing season normally begins in April. In 2014 this month was extremely dry in the whole Eastern sector of the Greater Horn of Africa, leading to a significant delay of the season. During the first two dekads of May, rainfall was slightly better than in April. However, if the current rainy season ends as usual in June, the total cumulated rainfall is expected to be much below normal with a high risk of drought in the main agricultural areas of Somalia, in large parts of Kenya and in southern agro-pastoral areas of Ethiopia. Pastoral areas in the northern United Republic of Tanzania, southern and northern Kenya as well as in Somalia are also likely to be affected by drought.

Figure 2: TAMSAT rainfall anomalies



Note: In Figure 2, the upper row shows the monthly rainfall anomalies from February to April 2014. The lower row includes rainfall for the first two dekads of May (left and centre) and the total seasonal cumulated rainfall (right). On this last map clear deficit areas are visible in most of Somalia, in western and central Kenya and in the northern United Republic of Tanzania.

Vegetation analysis in May 2014

The NDVI anomaly images for the Greater Horn of Africa show a good start of the vegetative season in April over large parts of the Western sector in the region, including South Sudan and parts of Ethiopia, which is due to exceptional rainfall in February and normal rainfall in March. This confirms an early start of the season in South Sudan, eastern Ethiopia and also in large parts of Kenya. But following the irregular and low rains in April, problems linked to late start of the season or to water stress in early vegetative stages become visible in early May in central Somalia, southern Ethiopia, south west and central Kenya, north eastern Uganda and the northern United Republic of Tanzania. The second dekad of May image confirms the effect of the poor rainfall performance in April mainly over large parts of Kenya and the northern United Republic of Tanzania and to a lower extent also in Uganda. Still based on NDVI, it is possible to compute the anomaly of the start of the vegetative season for the whole region (Figure 3, lower right map).

In many parts of the region it is still raining in May, therefore NDVI analysis of the third dekad and in early June will be crucial for understanding vegetation stress across the region. On the other side for the areas which are already in the last quarter of the vegetative season, even with good rainfall it will be difficult to reach a normal yield.

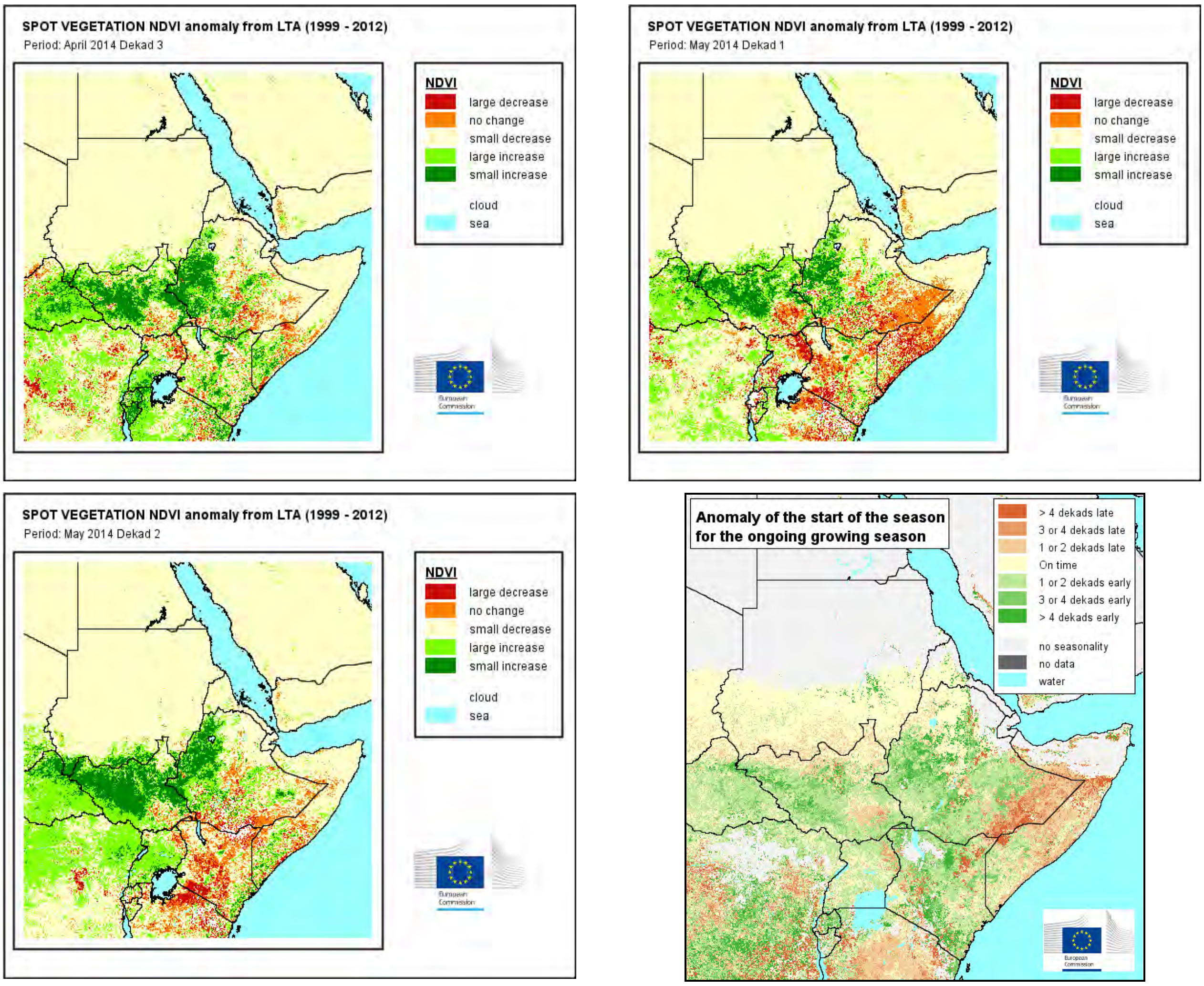
Seasonal NDVI and rainfall profiles for selected areas

By plotting NDVI and rainfall in the same graphs, it is possible to follow the seasonal pattern at the first sub-national administrative level across the Greater Horn of Africa. Both NDVI and rainfall of 2014 can also be compared to the long-term average, which allows detecting possible seasonal anomalies of the current year as compared to the long-term average. Some examples were selected for areas where below-average rainfall and negative NDVI anomalies have been detected using the anomaly images presented in the previous paragraph (Annex Figure 1).

Crops in the Bakool and Shabelle regions in Somalia received clearly below-average rainfall during April and NDVI in mid-May is far below normal. This situation is representative for most of the central regions in Somalia both for crops and grassland.

Very low NDVI values are shown in important agricultural and pastoral areas in Kenya, from the Southern Plains in Kaijado, to the Centre in Laikipia and Isiolo. In the central counties, the abnormal February rainfall lead to high greenness in March and April but even here there is a rapid drop in May due to irregular rainfalls in April (Kajiado, Narok, Laikipia and Kitui). East Equatoria in South Sudan had a dry period in April, but vegetation activity is back to normal in mid-May.

Figure 3: SPOT Vegetation NDVI anomalies



Note: Vegetation anomalies for the Greater Horn of Africa in April (upper left) and for the first two dekads of May (upper right and lower left). A clear deterioration is visible for large areas of Somalia, Kenya and in the northern United Republic of Tanzania from April to mid-May. Delay in the start of season (lower right). As visible, the growing season started early in most of the Greater Horn of Africa countries due to good rainfall in February-March, but the rainfall deficit in April had a negative impact on the early-planted areas, especially in Somalia and Kenya. In the Somali region of Ethiopia and in large parts of the Somalia, the whole “gu” season is delayed by one month.

ENSO anomalies and rainfall forecasts for the second half of 2014

ENSO-neutral conditions continued during April 2014, but with above-average Sea Surface Temperatures (SST) developing over much of the Eastern tropical Pacific.

The model predictions of ENSO for the coming months and beyond indicate an increased likelihood of El Niño compared with those from last month (April). Most of the models indicate that ENSO-neutral (El Niño-3.4 index between -0.5°C and 0.5°C) will persist throughout parts of the remainder of the Northern Hemisphere until spring 2014, most likely transitioning to El Niño during the summer. There remains uncertainty as to exactly when El Niño will develop and an even greater uncertainty as to how strong it may become. This uncertainty is related to the inherently lower forecast skill of the models for forecasts made in the spring. While ENSO-neutral is favored for northern Hemisphere spring, the chance of El Niño increases during the remainder of the year, exceeding 65 percent during the summer.

For the Greater Horn of Africa, El Niño conditions generally produce above-normal rains between October and March, which are generally favorable for the secondary crop seasons planted in October-November and harvested in February-March, such as the “deyr” season in Somalia and the “short-rains” season in coastal Kenya. However, these rains may hamper harvesting of the main season cereal crops from October-November. El Niño phenomenon could also result in exceptionally heavy rains and floods, negatively affecting food production and livestock conditions as in the strong event of 1997/98.

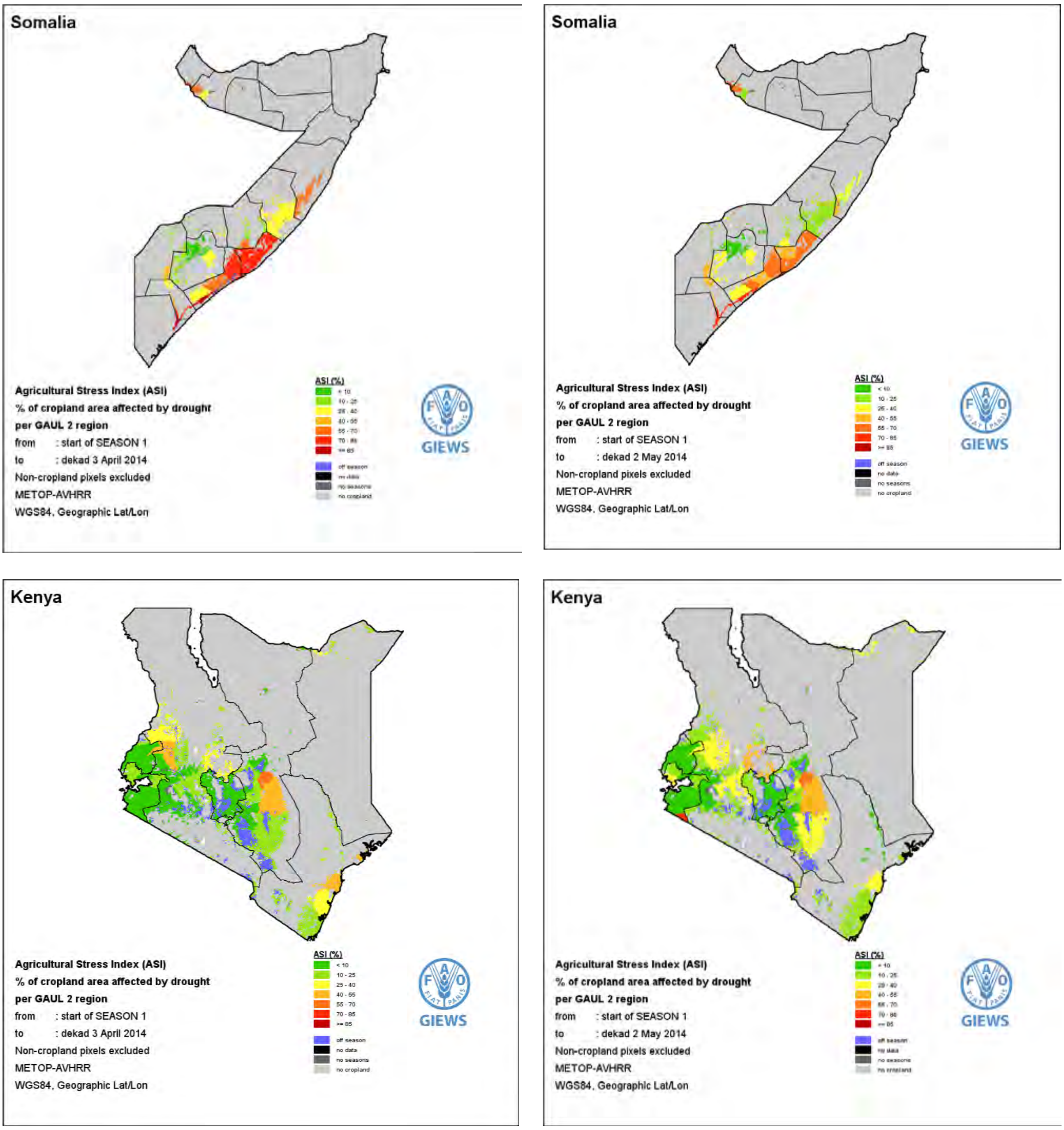
FAO Agricultural Stress Index (ASI) analysis

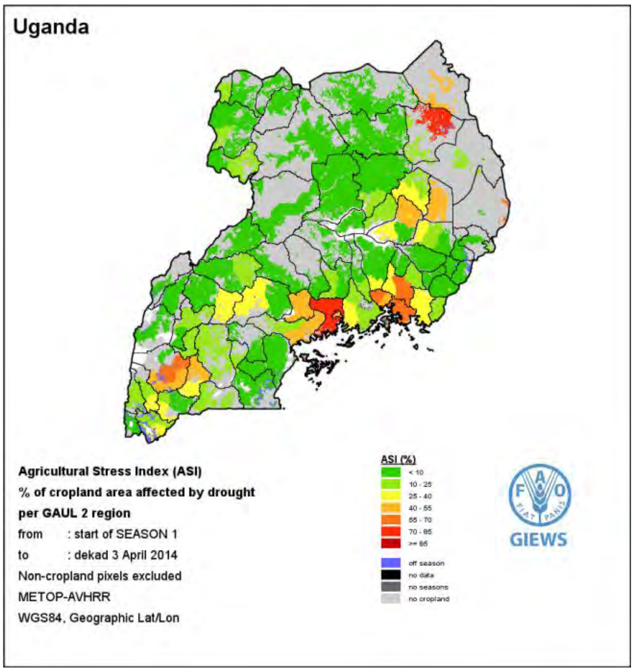
The Agricultural Stress Index (ASI) is an indicator developed by FAO that highlights anomalous vegetation growth and potential drought in arable land during a given cropping season. ASI provides integrated information for two important dimensions of agricultural drought: time and space. ASI assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought as pixels with a Vegetation Health Index (VHI) value below 35 percent (reference threshold taken from literature).

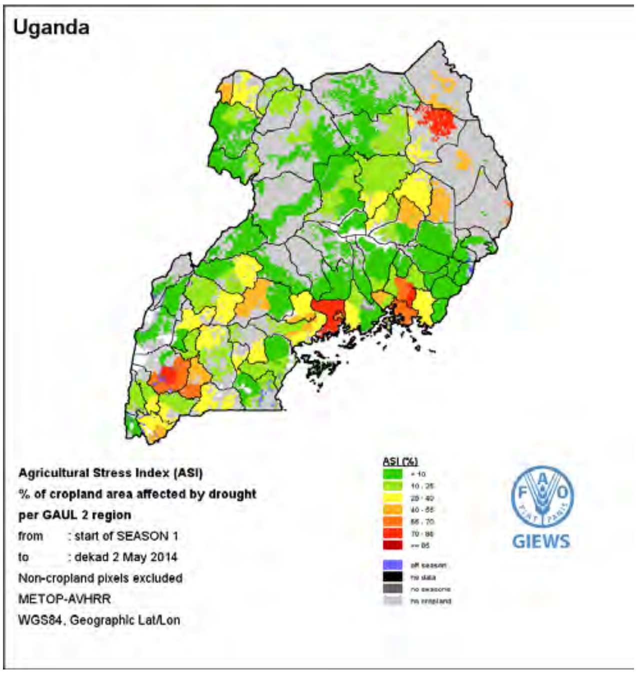
By mid-April 2014, ASI detected signals of water stress in central Somalia, central Kenya and parts of Uganda (see left column of the maps below regarding the third dekad of April) which confirm the results of the rainfall and NDVI analysis by adding more information on the percentage of agricultural areas affected. In Somalia, potential drought conditions were reported in the regions of Lower and Middle Shabelle, and in parts of southern Mudug and western Galbeed in Somaliland. In Kenya, moderate water stress was detected in the main cereal cropping areas of central Rift Valley province as well as in agro-pastoral areas of Kitui county in the Eastern province. In Uganda, ASI highlighted significant water stress in some uni-modal rainfall areas of Kotido and Kaabong districts in Karamoja region, with likely negative impact on germinating crops. Other districts with notable moisture deficits are Soroti and Katakwi in the east, Mbarara and Bushenyi in the west and some central districts bordering Lake Victoria such as Mayuge, Jinja, Iganga, Busia and Kampala.

Following light to moderate rains received by early May, the ASI for the second dekad of May (see right column of the maps in Figure 4 below) shows a generalized improvement in Somalia and Kenya. In particular, a slight improvement is reported in southern Middle Shabelle, northern Lower Shabelle and Galgadud in Somalia, and in some areas of central Rift Valley province in Kenya along the border with Uganda such as Trans-Nzoia, Uasin Gishu and Elgeyo-Marakwet counties. However the water stress conditions are slightly worsening in Kenya, in southern parts of Kitui county as well as in Nakuru and Baringo counties in central Rift Valley Province.

Figure 4: ASI maps Somalia, Kenya and Uganda, third dekad of April 2014 compared to the second dekad of May 2014







<u>Note</u>: Areas with a high percentage of agricultural area exposed to drought are shown in yellow to red colours

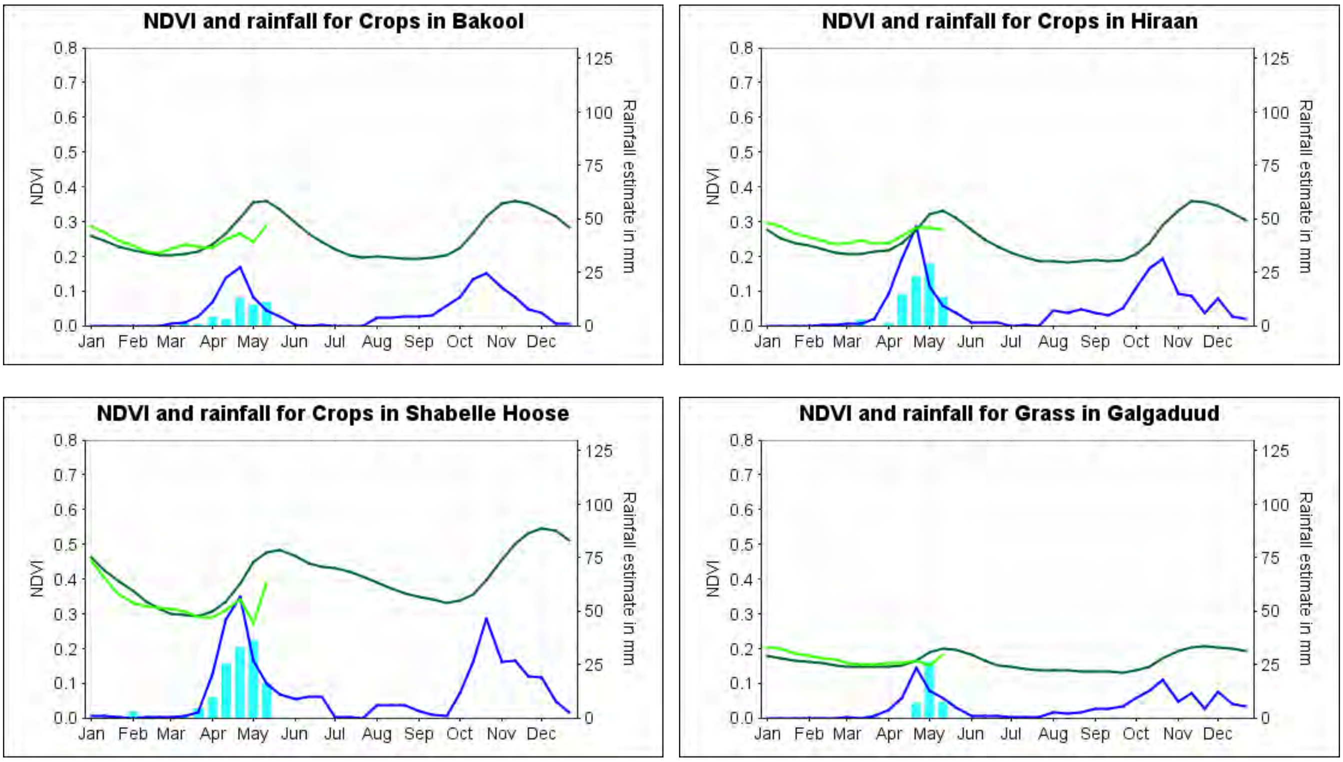
NB: The procedure does not weight the importance of the phonological phase when water stress is experienced. This implies that the risk of seasonal failure can in fact be higher as indicated in the map if water stress happens during the most sensitive development phases such as, for example, flowering for cereal crops.

ANNEX

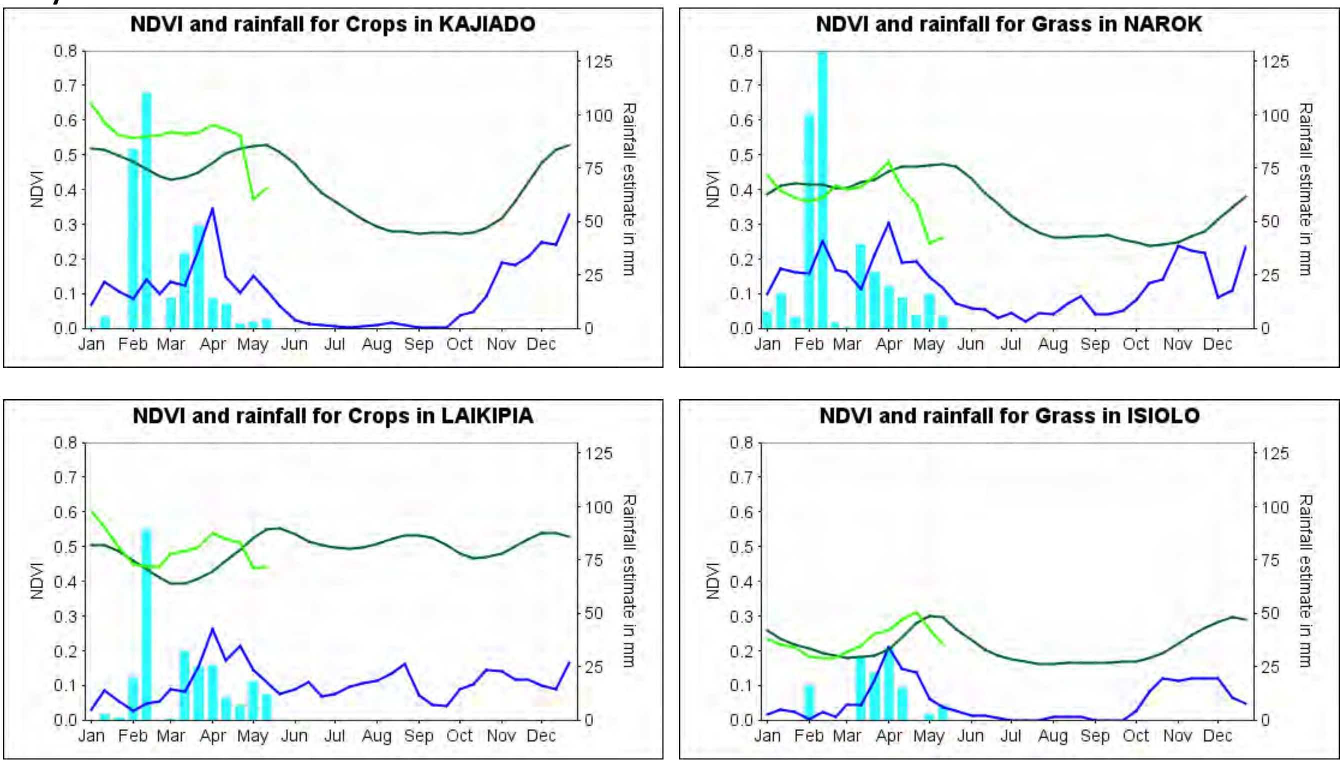
Figure 1: Seasonal NDVI and rainfall profiles for areas with below-average performance during the 2014 main rainy season

Cropland | **Grassland**

Somalia

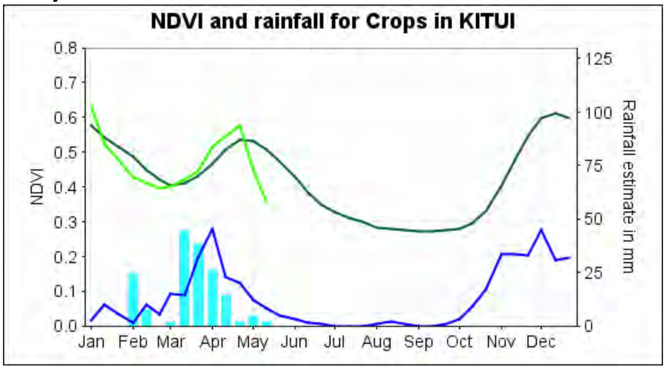


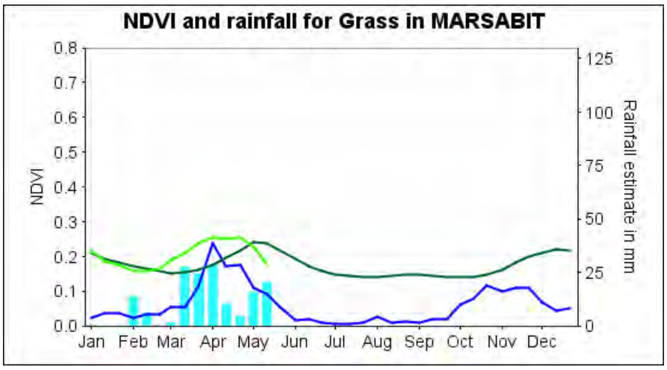
Kenya



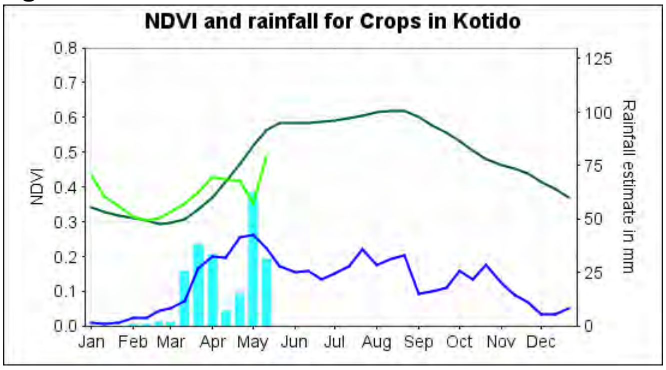
Cropland | **Grassland**

Kenya

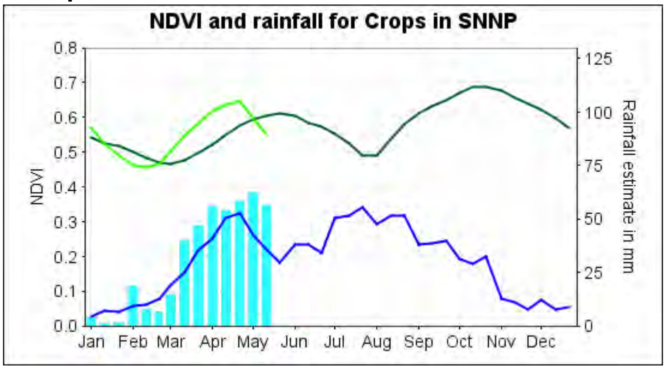


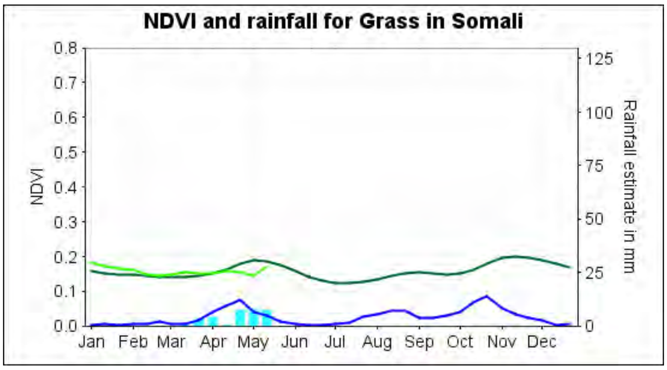


Uganda

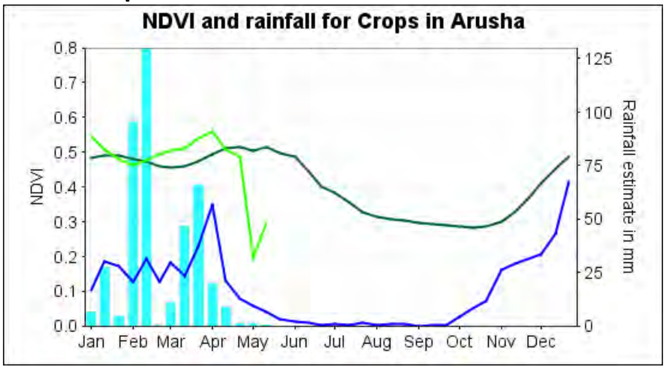


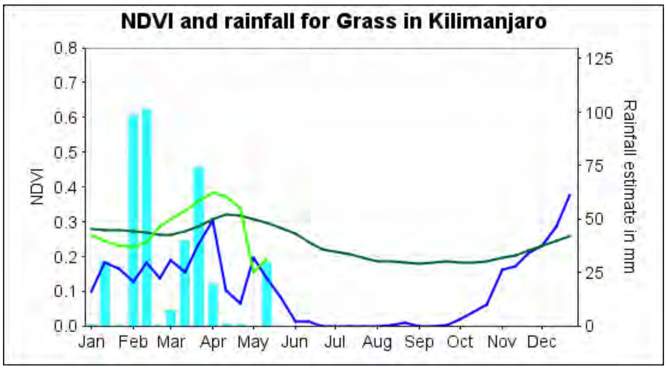
Ethiopia





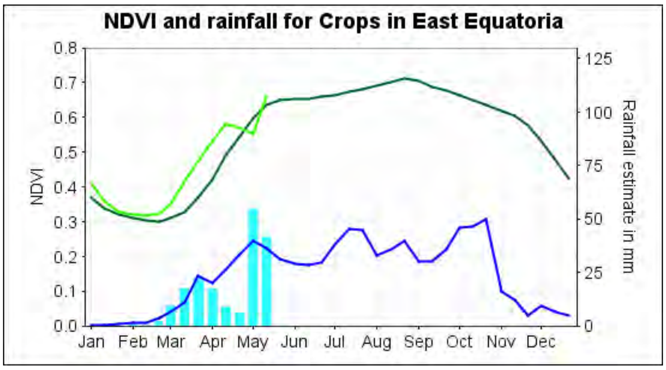
United Republic of Tanzania





Cropland

South Sudan



Note: Seasonal profiles of NDVI and rainfall estimates as compared to the long-term average for administrative areas with low seasonal performance for croplands (left column) and grasslands (right column).

El Niño-Southern Oscillation (ENSO):
Review of possible impact on agricultural production in 2014/15 following the increased probability of occurrence

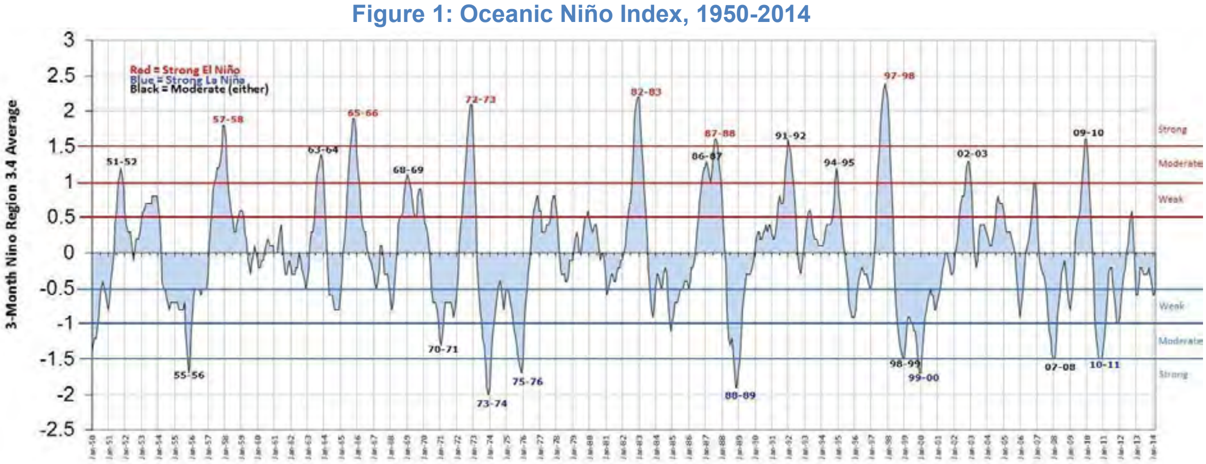
EL NIÑO – Definition and historical episodes

El Niño is a recurrent weather phenomenon that takes place approximately every two to seven years and usually lasts between 12 and 18 months. An El Niño event is defined by a high Oceanic Niño Index (ONI), which is based on Sea Surface Temperature (SST) departures from the average in a central equatorial Pacific region. An El Niño episode is associated with persistent warmer-than-average SSTs and consistent changes in wind and rainfall patterns. Despite their periodic and recurrent manifestations, El Niño episodes do not have a deterministic trend, with fixed occurrence periods and a constant intensity. As a result, stochastic models have been developed to predict the beginning and the intensity of El Niño episodes. However, while the accuracy of these models in predicting the onset of an El Niño episode is relatively high, forecasting the intensity is more uncertain due to random atmospheric disturbances which may dampen or amplify the intensity.

As a result, since El Niño episodes cause major global weather and climate fluctuations and have a significant impact on agriculture and food security, El Niño conditions are closely monitored by major meteorological institutes, and forecasts are updated accordingly.

Between 1950 and 2013 a total of twenty-two El Niño episodes had occurred. Figure 1 highlights the occurrences of moderate and strong El Niño and La Niña events (red lines on the upper half of the chart refer to El Niño, blue lines on the lower part to La Niña).

Figure 1: Oceanic Niño Index, 1950-2014



Source: National Oceanic and Atmospheric Organization

Out of the twenty-two El Niño episodes, eight were categorized as weak and another eight were moderate, while the remaining six occurrences of El Niño (1957-58, 1965-66, 1972-73, 1982-83, 1987-88 and 1997-98) were categorized as strong (see Table 1). The El Niño episode that occurred between May 1997 and April 1998 was the strongest and most prolonged on record.

Table 1: El Niño episodes and intensities, 1950-2013

El Niño intensity		
Weak	**Moderate**	**Strong**
1952-53	1951-52	1957-58
1953-54	1963-64	1965-66
1958-59	1968-69	1972-73
1969-70	1986-87	1982-83
1976-77	1991-92	1987-88
1977-78	1994-95	1997-98
2004-05	2002-03	
2006-07	2009-10	

EL NIÑO 2014/15 - Overview

Although El Niño conditions remained neutral as of early June 2014, current meteorological forecasts (from IRI[1] and NOAA[2]) indicate a 70 percent probability of El Niño occurring during the Northern Hemisphere's summer and 80 percent during the autumn or winter (see Table 2). This followed a rise in the equatorial SST in the preceding months. However, there still remains uncertainty as to exactly when El Niño will develop and an even greater uncertainty regarding its potential severity.

Table 2: El Niño current status and forecasts

Period	Probability of occurrence	
	Neutral (%)	**El Niño (%)**
May 2014 - Jul 2014	39	61
Jun 2014 - Aug 2014	30	69
Jul 2014 - Sep 2014	26	73
Aug 2014 - Oct 2014	22	77
Sep 2014 - Nov 2014	19	80
Oct 2014 - Dec 2014	17	82
Nov 2014 - Jan 2015	17	82
Dec 2014 - Feb 2015	18	80
Jan 2015 - Mar 2015	22	76

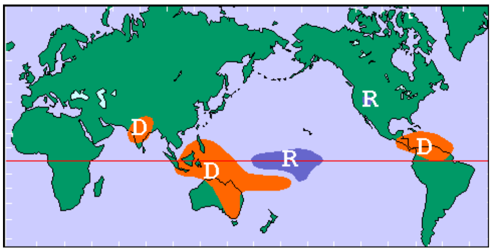
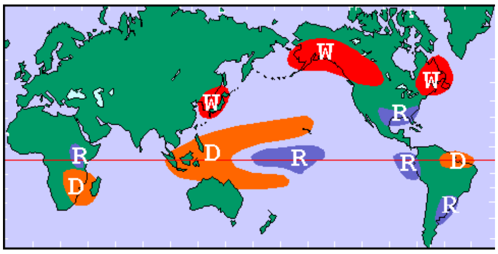
Source: National Oceanic and Atmospheric Organization

[1] IRI, 5 June 2014
http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-cpc_update

[2] NOAA, 5 June 2014
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

The Table 3 below provides an overview of the potential changes in weather patterns that may occur due to an El Niño episode (based on historical incidents). However, no precise quantitative correlation between the occurrence of El Niño and changes in agricultural production has been established and it is, therefore, difficult to accurately map the impact of El Niño. The effect on agriculture will depend on the timing and severity of the El Niño, as well as the crop calendar in a particular region. The descriptions below are, therefore, only indicative of potential impacts on crop production.

Table 3: Potential climatic variations

REGION	FULL STRENGTH: NORTHERN HEMISHPHERE SUMMER April-September	FULL STRENGTH: NORTHERN HEMISHPHERE WINTER October-March
	 *R = Above average rains* *D = Drier than average* *W = Warmer than average*	 *R = Above average rains* *D = Drier than average* *W = Warmer than average*
Southern Africa	Towards the end of the main cropping season's harvest and during the dry season. No significant variation from normal weather patterns has been observed during past events.	An increased probability of below-normal precipitation during the main rainy season between October and March; however, the intensity and area affected has varied during preceding El Niño events. In general, below average rains during this period coincide with the main cropping season (crops planted in October-November and harvested from March), and could, therefore, result in stressed vegetation conditions, limiting crop development and impacting potential yields.
Eastern Africa	During the main cropping period, March-November, previous El Niño events have not been associated with a significant divergence from normal weather patterns and consequently the impact on crop production has been marginal.	High probability of above-normal rainfall has the potential to benefit secondary season crop production (harvested in February-March), but it may also disrupt harvesting of the main season cereal crops between October and November. Exceptionally heavy rains are likely to increase the potential for flooding, negatively affecting food production and livestock conditions, as was the case during the strong event of 1997/98. However, good moisture levels in the first quarter of the calendar year may also create favourable cropping conditions for the main season, beginning in April.

REGION	FULL STRENGTH: NORTHERN HEMISPHERE SUMMER April-September	FULL STRENGTH: NORTHERN HEMISPHERE WINTER October-March
	Ethiopia: *Increased probability of above-average Belg rains (March-May), thus benefiting the secondary Belg harvest (which accounts for about 10 percent of the total cereal output), unless excessive rains disrupt harvesting and marketing* operations. *The impact on the Kiremt rains (June-September), which provide moisture for the main Meher harvest (which accounts for about 90 percent of the total cereal output), is uncertain: the 4 out of the 9 latest El Niño episodes coincided with unfavourable crop growing conditions, while the remaining 5 were associated with adequate rainfall and moisture levels.*	
Asia	Similar conditions to the October-March anomalies (see right column) tend to transpire during this period. In addition, northern India has tended to receive below-average monsoon rains (June-October). This is likely to have a limited affect on the secondary Rabi season crops (harvesting begins in April), but a more pronounced impact on the main Kharif season crops (predominantly rice), which are planted from May and harvested during the last quarter of the year. The crop is largely rainfed (monsoon rains) and low-cumulative seasonal rains increases the probability of growth retardation, negatively impacting on crop yields. In addition, a prolonged period of poor rains may also impact the irrigated crops.	Increased chance of below-average precipitation, historically concentrated in southeastern areas, Indonesia and the Philippines in particular. As rice production across the region is nearly continuous throughout the year, the occurrence of an El Niño event would be expected to have some impact on crop production. The increased probability of below-average precipitation will have implications on yields mainly for rainfed crops, the bulk of which are grown during the second half of 2014, while persistent dryness may result in lower reservoir levels and diminished water supply, impacting irrigation supplies. As the bulk of the rice crop is irrigated, short-term dryness would be expected to have a more limited negative impact on mainly secondary season crops, but long-term below-average precipitation could dampen irrigated crop production.

REGION	FULL STRENGTH: NORTHERN HEMISPHERE SUMMER April-September	FULL STRENGTH: NORTHERN HEMISPHERE WINTER October-March
Oceania	Tendency for reduced precipitation in eastern Australia between June and November (winter/spring), with significant negative variations in New South Wales and southern Queensland, both large wheat producing regions. The eastern regions contribute to about 50 percent of the total national wheat output. This period constitutes the main growing months for the winter wheat crop, harvested from November onwards. A period of below-average rains between June and November may result in growth retardation, limiting yields.	There is a tendency for below-normal rains in October, during the winter wheat harvest period, though the impact of El Niño generally weakens towards the end of the year. Previous events have caused wetter than normal conditions in Western Australia during the first quarter of the year, prior to the planting period in April and, therefore, the impact on cereal production is likely to be limited.
Latin America and the Caribbean	In Central America, an El Niño event is largely correlated with below-normal precipitation, and fewer or less intense hurricanes during the Atlantic hurricane season. This period corresponds to the main cereal cropping season and a period of below-normal rains could potentially dampen production. In South America, the El Niño phenomenon is associated with below-normal precipitation in northern parts of the subregion, but these areas do not represent the large producing regions. However, reduced crop production could impact local supplies.	Southern parts of Latin America have tended to receive heavier rains, which include the major cereal growing areas of Argentina, southern Brazil and Uruguay. The heavy rains late in the year may delay plantings of the cereal crops, to be harvested from March onwards.
North America	Sowing of the summer cereal crops begins in March, with harvesting activities normally commencing in October. Northern parts of the United States, including the Corn Belt in the Midwest, have tended to receive below-average rains during the first six months of the year during an El Niño episode. However, the impact on rainfall variations weaken in the second half of the calendar year. Below-average rains early in the cropping season may negatively impact crop growth, but a more limited impact would be expected as the season progresses.	Strong El Niño conditions are generally correlated with above-normal precipitation in southern and western states, but drier conditions in northern and eastern parts. This period corresponds to the winter wheat cropping season (crops planted in September-October and harvested from May). However, drier conditions at the end of a calendar year could also negatively impact on late-planted maize crops, harvested in November, in the north central states. In central and southern areas, short-term periods of excessive rains would be expected to have a limited negative impact or possibly be beneficial for winter crop production, but could delay plantings.

GIEWS Update
30 June 2014

Ethiopia: El Niño-Southern Oscillation (ENSO) and the main *Kiremt* rainy season

An assessment using FAO's Agricultural Stress Index System (ASIS)

1. DEFINITION

An El Niño is a recurrent weather phenomenon that takes place approximately every two to seven years and usually lasts between 12 and 18 months. An El Niño event is defined by a high Oceanic Niño Index (ONI), which is based on Sea Surface Temperature (SST) departures from the average in the region in the central equatorial Pacific. An El Niño episode is associated with persistent warmer-than-average sea surface temperatures and consistent changes in wind and rainfall patterns. Despite their periodic and recurrent manifestations, the El Niño episodes do not have a deterministic trend[1] with fixed occurrence periods and a constant intensity. As a result, stochastic models have been developed to predict the beginning and the intensity of the El Niño episodes. However, while the accuracy of these models in predicting the onset of an El Niño episode is relatively high, forecasting the intensity is more uncertain due to random atmospheric disturbances which may dampen or amplify the intensity of its occurrence and thus its impact on weather patterns.

As a result, since the El Niño episodes cause major global weather and climate fluctuations and have a significant impact on agriculture and food security, El Niño conditions are closely monitored by major meteorological institutes and forecasts are updated accordingly.

2. THE 2014 EL NIÑO CURRENT STATUS AND FORECASTS

El Niño conditions were neutral as of early June 2014. However, according to meteorological forecasts from the International Research Institute for Climate and Society (IRI)[2] and the National Oceanic and Atmospheric Administration (NOAA)[3], atmospheric and oceanic conditions collectively indicated a continued evolution towards an El Niño during May 2014, following a rise in the equatorial SST. The El Niño-Southern Oscillation (ENSO) by the NOAA Alert System is, as of early June, at "El Niño Watch" status, and model predictions of ENSO for this summer and beyond are indicating an increased likelihood of an El Niño compared with those from April.

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[1] Processes or projects having only one outcome are said to be deterministic; their outcome is 'pre-determined.' A deterministic algorithm, for example, if given the same input information will always produce the same output information.

[2] IRI, 5 June 2014
http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-cpc_update

[3] NOAA, 5 June 2014
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

Most of the prediction models indicate that ENSO-neutral conditions, which persisted through spring 2014, will most likely transition to an El Niño during the summer, with probability of occurrence of 70 percent during the summer and 80 percent during the autumn and winter (see Table 1). The latest forecasts (26 June 2014) indicate a large potential for an El Niño reaching peak strength during the fourth quarter of 2014 and continuing into the first few months of 2015 before dissipating. Models and experts' opinion currently favour a moderate strength event rather than either weak or strong occurrence[4]. However, there remains a range of scenarios as to the strength of the El Niño event, indicating the inherently lower forecasting ability (skill) of the models for forecasts made in the spring[5].

Table 1: El Niño current status and forecasts

Period	Probability of occurrence	
	Neutral (%)	El Niño (%)
May 2014 - Jul 2014	39	61
Jun 2014 - Aug 2014	30	69
Jul 2014 - Sep 2014	26	73
Aug 2014 - Oct 2014	22	77
Sep 2014 - Nov 2014	19	80
Oct 2014 - Dec 2014	17	82
Nov 2014 - Jan 2015	17	82
Dec 2014 - Feb 2015	18	80
Jan 2015 - Mar 2015	22	76

Source: National Oceanic and Atmospheric Organization (NOAA)

3. EL NIÑO IN EASTERN AFRICA AND ETHIOPIA

While the intensity of an El Niño is difficult to predict, the type of effects on the weather (above or below-average rains and temperatures), their geographical distribution and temporal sequence have followed a general pattern over the years. In Eastern Africa, there is a broad consensus among climatologic agencies that an El Niño event has a high probability to cause above-normal rainfall in the October to March period coinciding with, and usually benefiting, secondary season crop production (February-March) in equatorial eastern Africa (Kenya, Uganda, the United Republic of Tanzania, southern Somalia and southern Ethiopia) albeit with severe flood damages. At the same time, harvesting of the main season cereal crops between October and November in major crop-producing areas of Ethiopia may be disrupted due to off-season rains. As a result, El Niño events are largely beneficial to crops in several countries, but there are associated challenges owing to episodic widespread flooding and the associated escalation of diseases (such as malaria, Rift Valley fever, cholera), pests and crop losses, human and livestock deaths and displacements, property and infrastructure destruction. By contrast, in equatorial eastern Africa, during the March to November period, previous El Niño events have not been associated with a significant divergence from normal weather patterns and consequently the impact on crop production has been minimal.

[4] World Meteorological Organization, El Niño /La Niña Update, 26 June 2014.

[5] El Niño-Southern Oscillation (ENSO) diagnostic discussion issued by the Climate Prediction Centre/NCEP/NWS and the International Research Institute for Climate and Society, 8 May 2014.

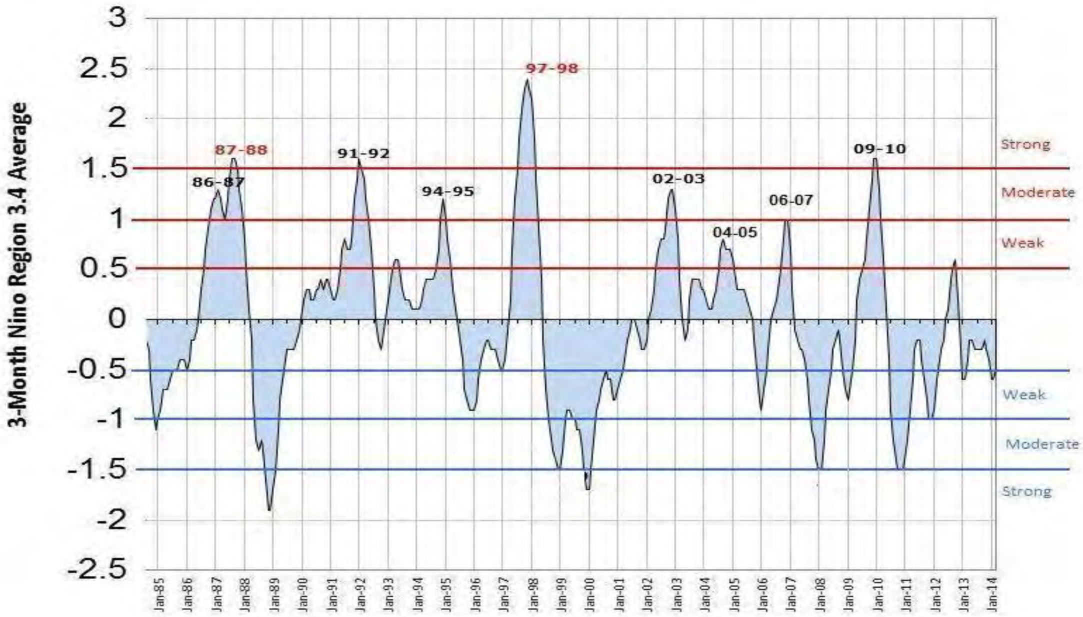
In Ethiopia, while an El Niño event is likely to cause above-average *Belg* rains (March-May), the impact on the main *Kiremt* season rains (June-September), which account for 50-80 percent of annual rainfall totals over the main agricultural production areas is not straightforward. A number of climatologists[6] have indicated that an El Niño event would cause suppressed rainfall in Ethiopia during the *Kiremt* season rains (June-September) causing serious reduction in cereal yields and output, and that the El Niño forecast models could and should be used to forecast droughts over Ethiopia's key cereal-producing areas.

4. ASSESSING THE IMPACT OF AN EL NIÑO ON THE ETHIOPIAN MAIN *KIREMT* RAINY SEASON USING ASIS

This brief study aims to contribute to the debate regarding the influence of an El Niño event on the Ethiopian *Kiremt* rains taking advantage of the new FAO-developed Agricultural Stress Index System (ASIS) in the assessment of the overall crop growing conditions in recent years characterized by the El Niño events. The ASIS has been developed by the Global Information and Early Warning System (GIEWS) and the Climate, Energy and Tenure Division (NRC) of FAO to detect agricultural areas with a high likelihood of water stress (drought) on a global scale. The ASIS is based on the Vegetation Health Index (VHI), derived from the widely-used Normalized Difference Vegetation Index (NDVI) and provides integrated information for two important dimensions of agricultural drought: time and space. The Agricultural Stress Index (ASI) assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought as pixels with a VHI value below 35 percent[7]. It has been successfully applied in many different environmental conditions around the globe, including Asia, Africa, Europe, North America and South America.

From 1986 until 2013 (for which ASIS data is available), a total of nine El Niño events had occurred (see highlighted years in Figure 1).

Figure 1: Oceanic Niño Index (ONI), 1985-2013



Source: National Oceanic and Atmospheric Organization (NOAA)

[6] D. Korecha, A.G. Barnston, 2006: Predictability of June-September Rainfall in Ethiopia, *Monthly Weather Review*, Volume 135, 628-650; Wolde Georgis, T, 1997: El Niño and Drought Early Warning in Ethiopia, *Internet Journal of African Studies,* Volume 2.

[7] It is a value identified as critical in previous studies.

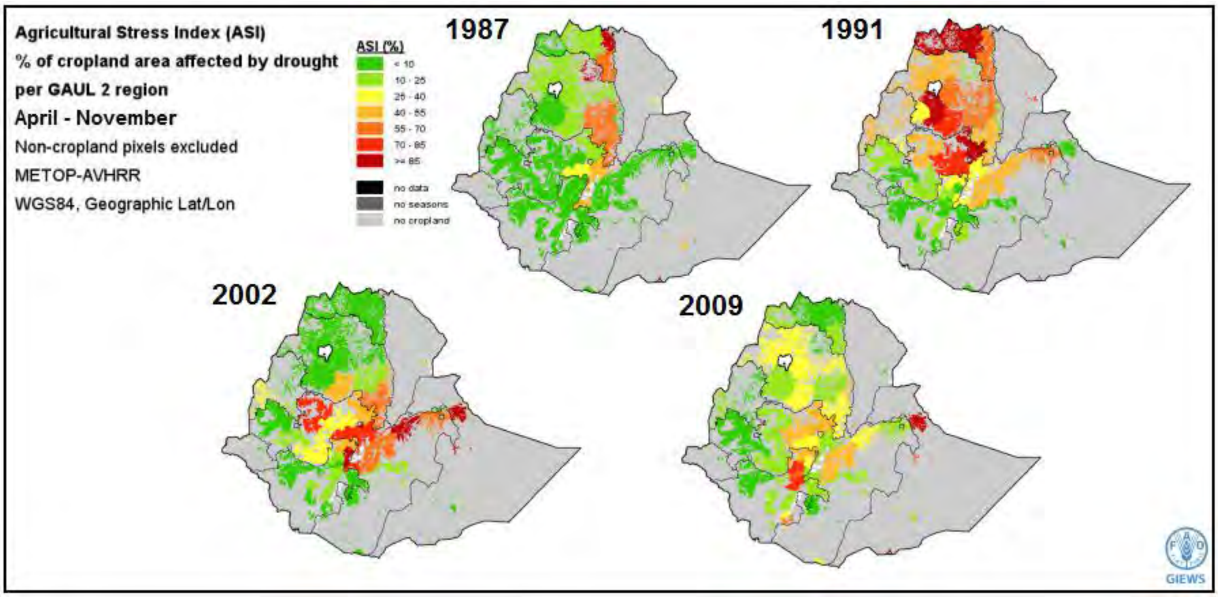
The intensity of seven of the El Niño years (1986/87, 1991/92, 1994/95, 2002/03, 2004/05, 2006/07, 2009/10) were either moderate or weak, while the intensity of two of them (1987/88 and 1997/98) were strong. In particular, the El Niño event that occurred between May 1997 and April 1998 is one of the strongest ever recorded and the most severe and prolonged of the latest 25 years (see Table 2).

Table 2: El Niño episodes and intensities, 1985-2013

El Niño intensity		
Weak	**Moderate**	**Strong**
2004 - 2005 2006 - 2007	1986 - 1987 1991 - 1992 1994 - 1995 2002 - 2003 2009 - 2010	1987 - 1988 1997 - 1998

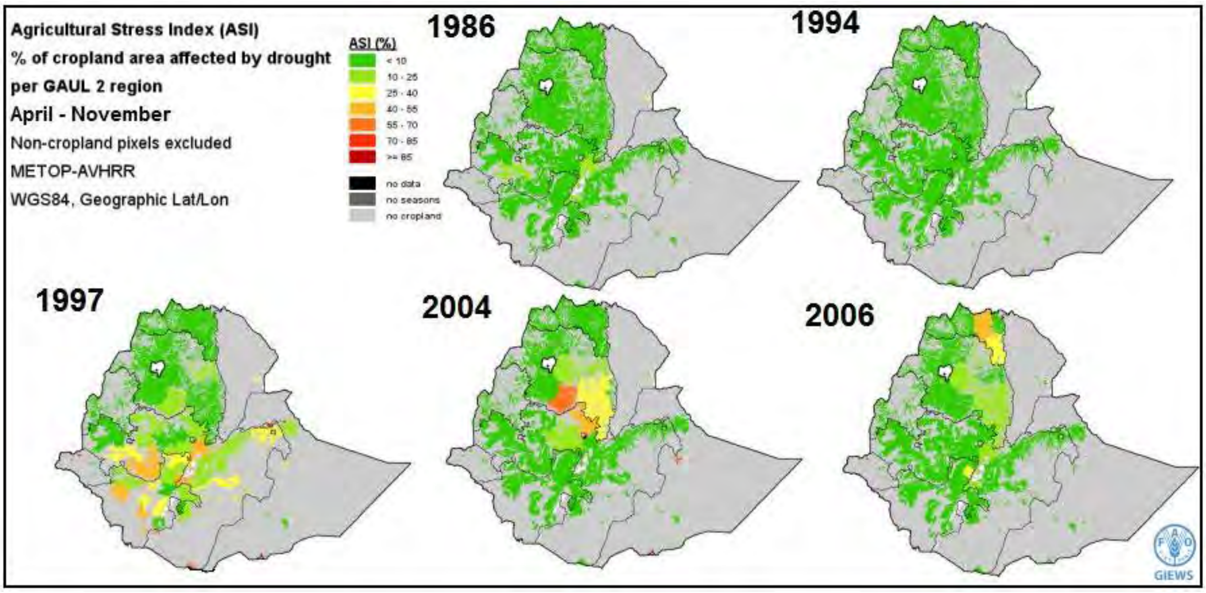
In Ethiopia, four out of the nine El Niño events that occurred between the years 1985-2013 (1987, 1991, 2002 and 2009) coincided with intense and/or extended drought conditions during the April-November period, which encompasses the main *Meher* cropping season (see Figure 2). However, it is worth noting that in 1991, when the El Niño was moderate, crop-growing conditions were very poor compared to 1987, when the El Niño was strong.

Figure 2: El Niño episodes associated with unfavourable crop growing conditions



By contrast, five out of the nine El Niño events that occurred between 1985-2013 (1986, 1994, 1997, 2004 and 2006) coincided with overall satisfactory crop growing conditions (see Figure 3).

Figure 3: El Niño episodes associated with overall favourable crop growing conditions



The case of the 1997 *Meher* season is particularly interesting. The El Niño which occurred in 1997 was the strongest since 1970 (see above) and disturbed weather patterns around the world for more than a year, causing the death of an estimated 2 100 people, and at least USD 33 billion in property damage. In Latin and Central America, where typically the El Niño has the largest impact, heavy rains along the coast of Peru and Ecuador destroyed infrastructures and crops and devastated the fishing industry. The change in weather patterns also caused drought in parts of Central America (Honduras and Guatemala) and Brazil. In Eastern Africa, exceptionally heavy rains from October to December seriously affected food production and distribution networks throughout the subregion. In southeast Asia, the El Niño-related drought in Indonesia caused rice production to decline and prices to skyrocket, while in Papua New Guinea, the El Niño contributed to drought and frost conditions which pushed over 300 000 people into severe food insecurity. However, the ASI map for Ethiopia shows satisfactory crop-growing conditions with only localized mild agricultural stress, and in 1997 total cereal production was similar to the output gathered in the previous year, which was ENSO-neutral, and 42 percent higher than the average of the previous five years.

5. PROGRESS AND OUTLOOK FOR THE CURRENT 2014 *MEHER* CROPPING SEASON

Planting of the 2014 main *Meher* season cereal crops is well underway in key-producing areas of western Oromia, Amhara and Benishangul Gumuz regions in the west of the country. Plantings will proceed eastwards in the next several weeks with the onset of the *Kiremt* rains in the Eastern Highlands (see Figure 4).

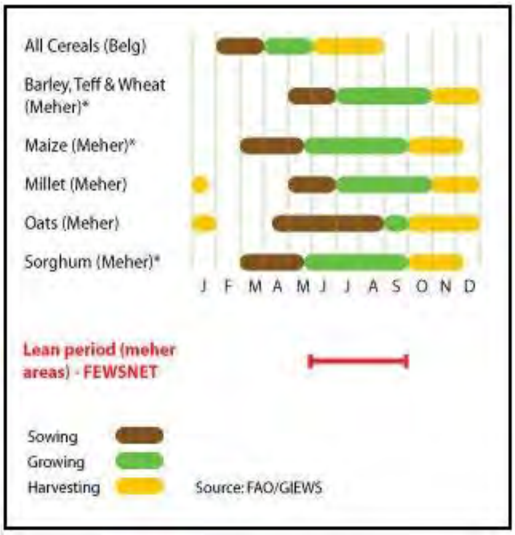
Adequate amounts of rainfall were received so far, leading to favourable growing conditions in most of the areas already sown. However, in localized western areas, below-average rainfall was received in the first dekad of June with the largest seasonal deficits observed over northwestern areas bordering eastern Sudan. Subsequently, these areas received moderate to heavy rains during the second dekad of June, partially compensating for the early season dryness (see Figure 5). Seasonal rainfall is expected to continue over western Ethiopia[8], and, overall, forecasts for the remainder of the June-September *Kiremt* rainy season point to average to above-average rainfall levels[9]. As a result, so far, production prospects for the main *Meher* harvest, which is scheduled to start from October, are generally favourable.

Earlier in the year, the March-May *Belg* rains were generally adequate except in the Bale and Guji lowlands in Oromia region as well as southern SNNP region, which received below-average cumulative rainfall. As a result, estimates for the secondary *Belg* crop, currently being harvested, point to average production levels.

Dry weather conditions prevailed in April and May in most pastoral and agro-pastoral areas of the country, mainly in southern Somali and northern Afar regions as well as lowlands of Guji and Borena zones in southern Oromia region.

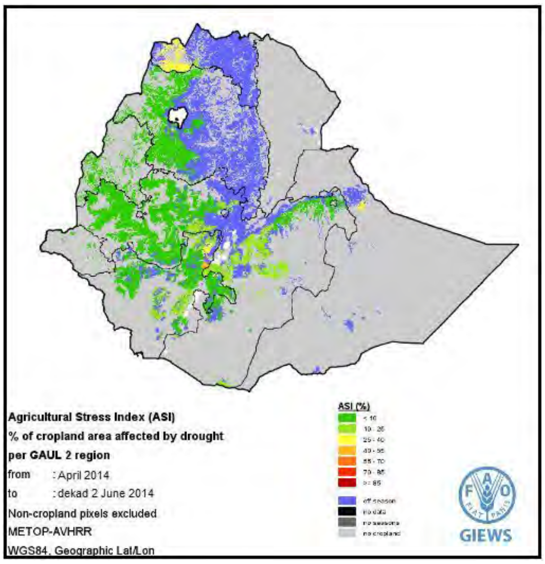
In these areas, rainfall deficits had a negative impact on pasture, thus affecting livestock body condition and milk production.

Figure 4: Crop calendar



*major food crop

Figure 5: Crop growing conditions as of the second dekad of June 2014



[8] National Oceanic and Atmospheric Organization, Climate Prediction Centre's Africa Hazards Outlook 26 June–2 July 2014.

[9] Statement from the 37th Greater Horn of Africa Climate Outlook Forum (GHACOF 37), 25-26 May 2014.

6. CONCLUSIONS

This analysis, conducted taking advantage of FAO's Agricultural Stress Index System, indicates that in the 1985 to 2003 timeframe, in four out of the nine El Niño years (1987, 1991, 2002 and 2009), unfavourable crop-growing conditions prevailed, while in the remaining five years (1986, 1994, 1997, 2004 and 2006), crop-growing conditions were favourable. Therefore, the impact of the El Niño conditions over the Ethiopian *Kiremt* rains and the associated *Meher* main harvest in the 1985-2013 timeframe was mixed. Several other climatological factors also have a sway on the June to September rainfall in Ethiopia, including:

1) The seasonal northward advance of the Inter-Tropical Convergence Zone (ITCZ), persisting over Ethiopia;
2) formation of heat lows (low pressure areas) over the Saharan and Arabian landmasses;
3) establishment of sub-tropical high pressure over the Azores, St. Helena and Mascarene;
4) southerly/southwesterly cross-equatorial moisture flows from the southern Indian Ocean, central tropical Africa and the equatorial Atlantic;
5) upper-level Tropical Easterly Jet (TEJ) flowing over Ethiopia; and
6) low-level jet (Somali jet)[10].

Accordingly, the outcome of the El Niño conditions on the *Kiremt* rainy season in Ethiopia in a given year depends on the behaviour of the other factors at play, including those mentioned above. In addition, ENSO forecasts whose lead time include the April-June period are known to have a lower forecasting ability (skill) than forecasts whose lead time does not include the April-June period[11]. As a result, the *Kiremt* rainy season that starts in June suffers from this lower forecasting ability (skill) until the season is well through.

[10] D. Korecha, A.G. Barnston, 2006: Predictability of June-September Rainfall in Ethiopia, *Monthly Weather Review*, Volume 135, 628-650.

[11] Ibid; El Niño/Southern Oscillation (ENSO) diagnostic discussion issued by the Climate Prediction Centre/NCEP/NWS and the International Research Institute for Climate and Society, 8 May 2014.

GIEWS Update

9 July 2014

Greater Horn of Africa: Moisture deficits persist in pastoral and agro-pastoral areas of Kenya, Ethiopia, Somalia and the United Republic of Tanzania

Highlights:

- Late and irregular rains in March and April affected the 2014 main cropping season in most countries
- Beneficial rains in May improved production prospects in Ethiopia and South Sudan
- Early depletion of grazing resources in most pastoral and agro-pastoral areas following moisture deficits

The Greater Horn of Africa (Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, the Sudan, the United Republic of Tanzania and Uganda) includes semi-arid areas that are susceptible to devastating droughts and high risk of food insecurity. A combination of agro-climatic constraints including aridity, erratic rainfall, soil erosion and deforestation; challenging socio-economic factors, including high population growth rates, predominantly traditional agriculture characterized with low productivity in both crop and livestock production, high prevalence of poverty and low incomes; together with political instability and prevalence of conflict and civil insecurity render millions of people in the subregion to severe food insecurity and under-nutrition. Rural populations relying on rainfed agriculture and pasture are particularly exposed to large seasonal and inter-annual fluctuations in water availability.

On the other hand, seasonal rainfall patterns in the subregion are largely influenced by fluctuations of the Inter-Tropical Convergence Zone (ITCZ)[1/] that determine the large-scale spatial patterns of phenology. Except for the areas along the White Nile River, most of the northwestern part of the region experiences one single rainy/cropping season. Conversely, most of the southeastern parts of the subregion enjoy two growing seasons each year, except for some inland areas in Kenya and parts of the coastal area of Kenya and Somalia. The relative agronomic importance of the two seasons, as well as their timing, may vary across regions.

[1/] The Inter-Tropical Convergence Zone (ITCZ) is a broad low-pressure area next to the equator where northeasterly and southeasterly trade winds converge. The seasonal northsouth oscillations of this belt are an important driver for rainfall in many areas of the Sahel and in East Africa.

Report prepared in collaboration with the Joint Research Centre (JRC) of the European Commission (EC)

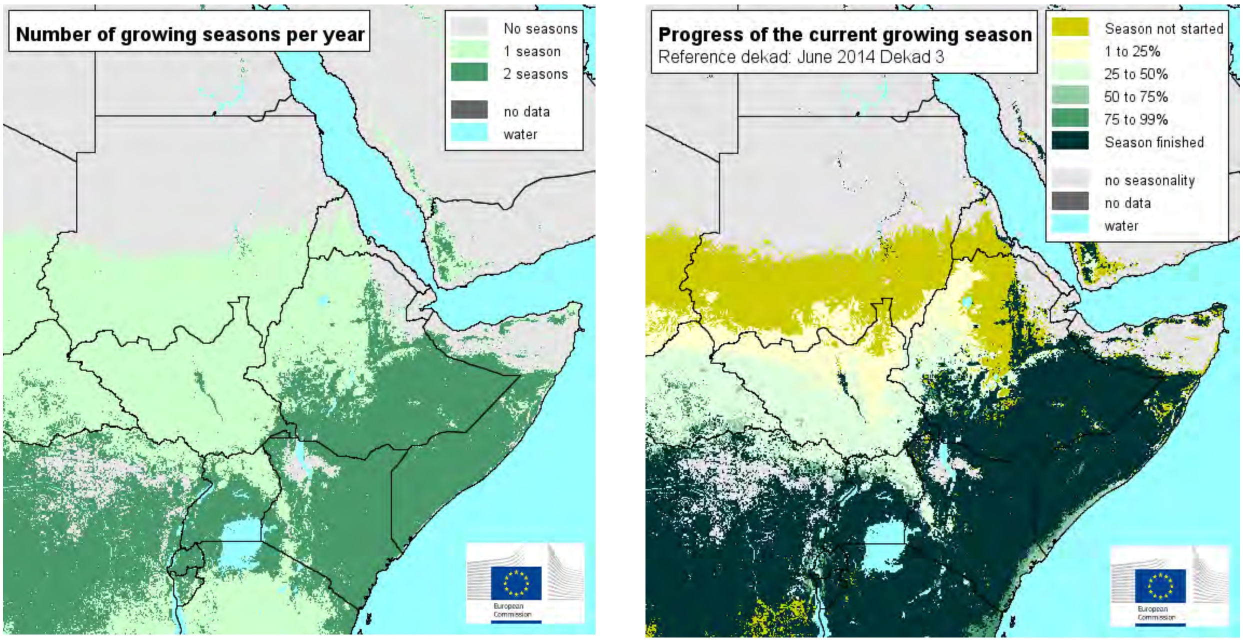
European Commission

MARS Monitoring Agricultural ResourceS

The timing of the onset, the duration and the intensity of the seasonal rainy periods are highly variable in space, and therefore different countries and areas are affected differently. Depending on their severity and spatial extent, drought events may eventually lead to poor crop and livestock production in turn leading to severe gaps in food supplies. Often these shortfalls are large and coupled with high food prices, political instability and other aggravating factors result in severe food and humanitarian crisis.

Over the last three years, from late 2011 to early 2014, the bi-modal rainfall areas of the subregion have experienced six consecutive good or relatively good rainy seasons with some local exceptions such as the northern and eastern pastoral areas in Kenya that experienced a poor 2013/14 "short-rains" season. However, the onset of the current 2014 main rainy season in the tropical parts of the subregion was characterized by late and erratic rainfall. Although rainfall has improved in May with visible benefits especially in western Ethiopia, it has subsided as expected in late June and large parts of Kenya, Somalia and the northern United Republic of Tanzania remain affected by significant moisture deficit with negative consequences on crop production and pasture availability.

Figure 1: Number of growing seasons per year and current progress

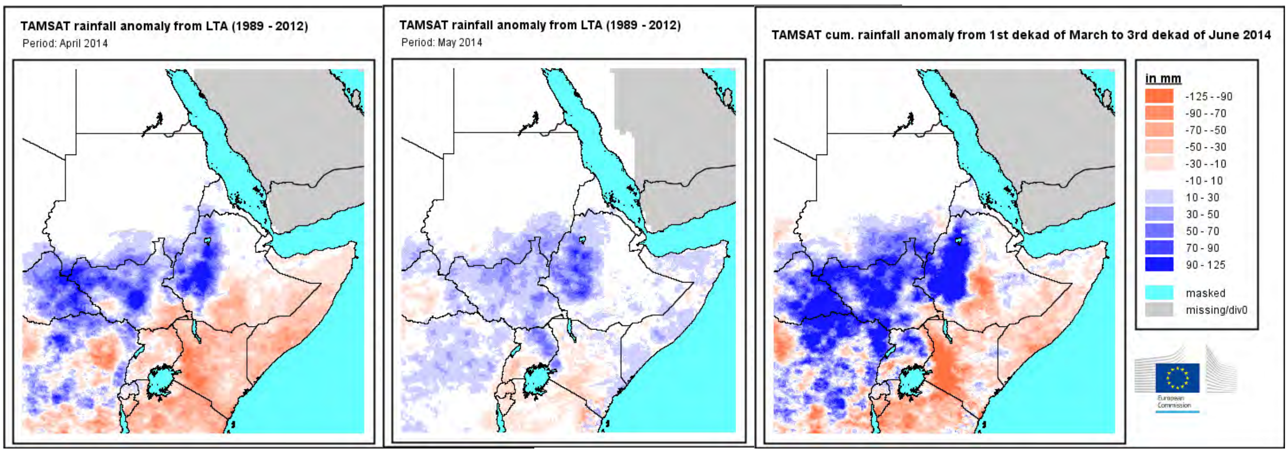


Note: Figure 1 shows on the left spatial distribution of seasonality in the region, as derived from an analysis of the long-term average (LTA) NDVI signals and on the right the average progress of the current vegetative season across the region on 30th June, both for uni-modal and bi-modal areas. For the majority of the bi-modal areas in the Horn of Africa this vegetation season usually ends by late June.

Analysis of the 2014 rainy season, until mid-June 2014

The 2014 rainy season deviated from normal "average" patterns since the beginning of the year. In January and February, which normally constitute part of the dry season, an intensive tropical storm in the Indian Ocean pushed humid air masses northwards resulting in unusual rains in February over a large North South belt reaching from the United Republic of Tanzania up to Ethiopia through central Kenya. Rains in March, which marks the start of the rainy season in the western part of the Greater Horn of Africa and of the "belg" season in Ethiopia, were above normal in Ethiopia and Uganda, but delayed in western Kenya. These early rains were beneficial for the main maize producing regions in the United Republic of Tanzania which is expecting a good maize harvest this year. In the other bi-modal areas of the eastern part of the Greater Horn of Africa the growing season normally begins in April. In 2014, this month was extremely dry in the whole eastern sector of the Greater Horn of Africa, leading to a significant delay of the season. During the whole month of May, rainfalls were slightly better than in April and also than the historical average. However, as the current rainy season subsided as usual by late June, the total cumulated seasonal rainfall has been much below normal, affecting agricultural and pastoral areas of southern and central Somalia, large parts of Kenya, southern Ethiopia, northern United Republic of Tanzania, the Karamoja region in Uganda and southeastern South Sudan.

Figure 2: TAMSAT rainfall anomalies for the 2014 "long-rains" season

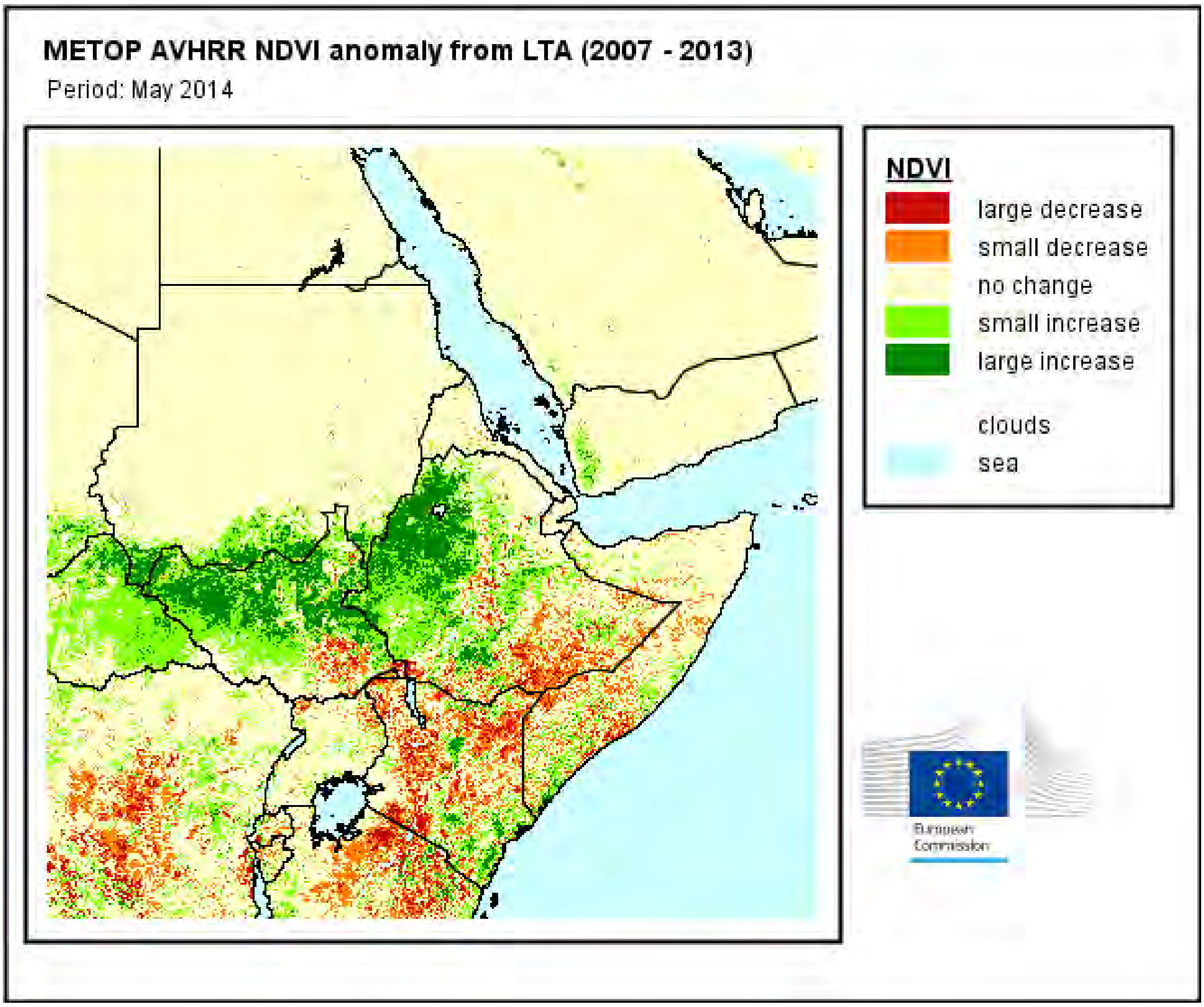


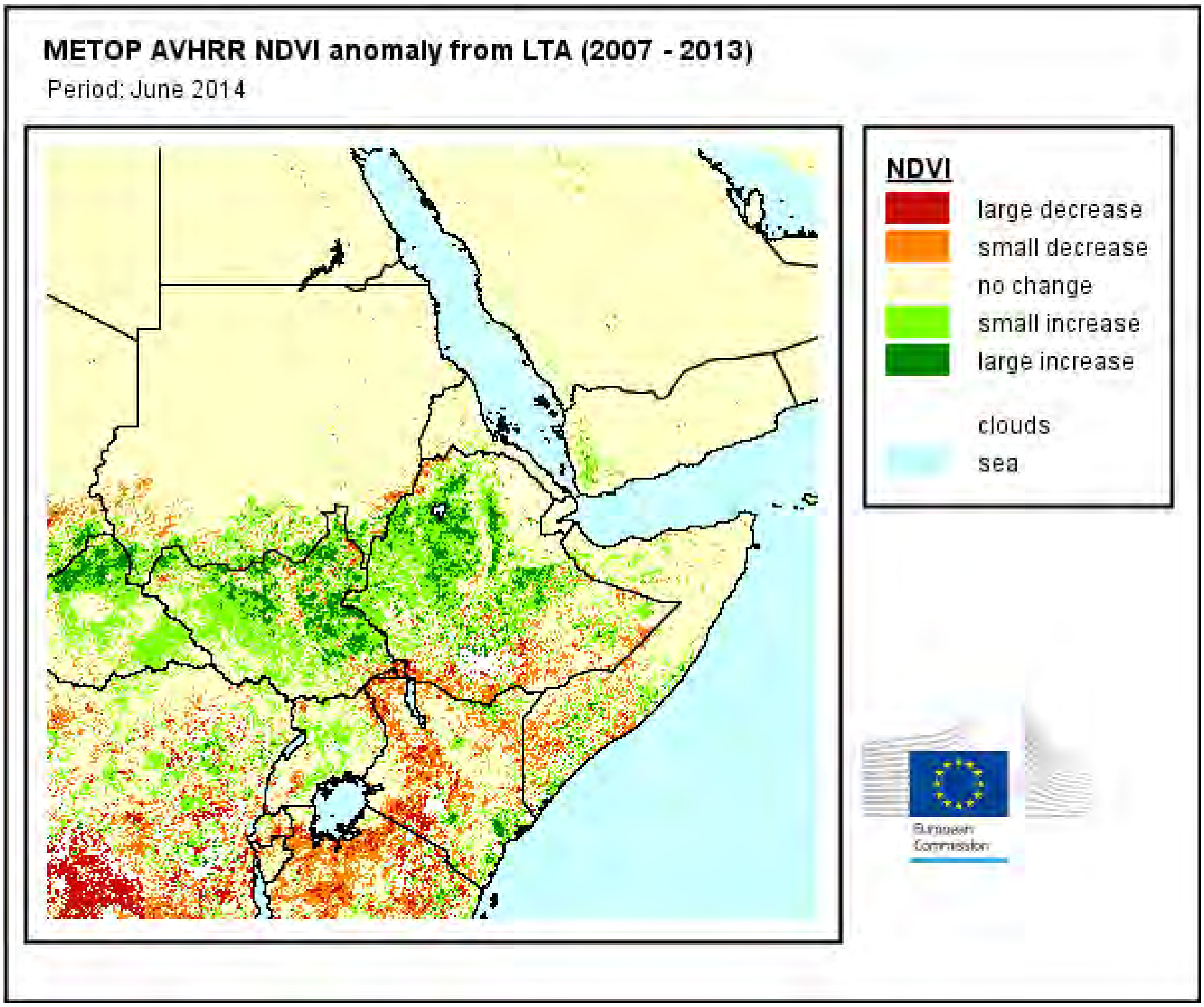
Note: Figure 2 shows the cumulated monthly rainfall anomaly for the month of April (left), for the month of May (centre) and for the whole season (right). On this last map, clear deficit areas are visible in parts of central and southern Somalia, in western and central Kenya, in southern Ethiopia and in northern United Republic of Tanzania.

Vegetation analysis in May 2014

The NDVI anomaly images for the Greater Horn of Africa show a good start of the vegetative season in April over large parts of the Western sector in the region, including South Sudan and parts of Ethiopia, which is due to exceptional rainfall in February and normal rainfall in March. This confirms an early start of the season in South Sudan, eastern Ethiopia and also in large parts of Kenya. But following the irregular and low rains in April, problems linked to the late start of the season or to water stress in early vegetative stages become visible in early May in central Somalia, southern Ethiopia, south, west and central Kenya, northeastern Uganda and northern United Republic of Tanzania. According to the June NDVI anomaly image, poor vegetation conditions are confirmed for large parts of Kenya, northern United Republic of Tanzania and parts of southern Somalia agricultural areas, while some improvements are visible in Ethiopia, where favourable 2014 “belg” rains (March-May) were followed by a timely onset of the “kiremt” rains (June-September). In the bi-modal areas of the United Republic of Tanzania, where the season begins earlier, maize crops developed well and the dry period at harvesting time has positive effects on yields and quality, while pastoral areas are affected by rapid deterioration. In Kenya, the water deficit is particularly evident for the northern pastoral areas which had been already affected by drought in late 2013 and early 2014, like the Turkana and Marsabit counties. Agro-pastoral areas in Baringo, Narok, West Pokot, Laikipia and Kajiado counties are also affected by the prospect of low yields in this season (see Annex).

Figure 3: METOP Vegetation NDVI anomalies





Note: Figure 3 shows vegetation anomalies for the Greater Horn of Africa in May (above) and for the first dekad of June (below). Following low rainfall in April, a clear deterioration is visible for large areas of Somalia, Kenya and in northern United Republic of Tanzania in May. Vegetation conditions in early June have improved in central and southern Ethiopia, but remain clearly below average in the agricultural areas of southern Somalia and in large areas of Kenya, going from Mara and Narok plains in the south to Laikipia areas in the centre and up to pastoral areas in Turkana in the north.

Seasonal NDVI and rainfall profiles for selected areas

By plotting NDVI and rainfall in the same graphs, it is possible to follow the seasonal pattern at the first sub-national administrative level across the Greater Horn of Africa. Both NDVI and rainfall of 2014 can also be compared to the long-term average, which allows detecting possible seasonal anomalies of the current year as compared to the long-term average. Some examples were selected for areas where below-average rainfall and negative NDVI anomalies have been detected (see Annex).

Crops in Bakool and Shabelle regions in Somalia received clearly below-average rainfall during April and crop growth started late. NDVI values in May and June were below normal and the length of the growing period has been shorter than normal. This situation is representative for most of southern Somalia and both for crops and grasslands, while the most critical situation can be observed in the northern part of Gedo region.

In Kenya, very low NDVI values persist in June across important agricultural and pastoral areas, from the southern plains in Kaijado, to the agricultural areas in Narok, the highlands in Laikipia and the northern pastoral areas from Isiolo to Turkana and Samburu.

In central counties, the abnormal February rainfall led to high greenness in March and April, but even here there is a rapid drop in May due to irregular rainfalls in April (Kajiado, Narok, Laikipia and Kitui). The situation is particularly severe for the northern pastoral counties which had already experienced drought in late 2013 and early 2014 like Turkana and Marsabit.

In South Sudan, a dry period in April affected crop and pasture conditions in Eastern Equatoria State (especially in Greater Kapoeta) and in parts of southern Jonglei State (Bor and Pibor counties), but vegetation activity is back to normal since mid-May.

ENSO anomalies and rainfall forecasts for the second half of 2014

ENSO-neutral conditions continued during May 2014, but with above-average Sea Surface Temperatures (SST) developing over much of the Eastern Tropical Pacific.

Model predictions of ENSO for the coming months and beyond are indicating a probability of occurrence of 70 percent during the Northern Hemisphere summer and 80 percent during the autumn and winter. Most dynamical models slightly favour a moderate strength event. However, significant uncertainty about the beginning, duration and strength of El Niño still accompanies official forecast, due to the spread of the models and their skill for forecasts made in the spring.

For the Greater Horn of Africa, El Niño conditions generally produce above-normal rains between October and March, which are generally favourable for the secondary crop seasons planted in October-November and harvested in February-March, such as the "deyr" season in Somalia and the "short-rains" season in coastal Kenya. However, these rains may hamper harvesting of the main season cereal crops from October to November. The El Niño phenomenon could also result in exceptionally heavy rains and floods, negatively affecting food production and livestock conditions as in the strong event of 1997/98.

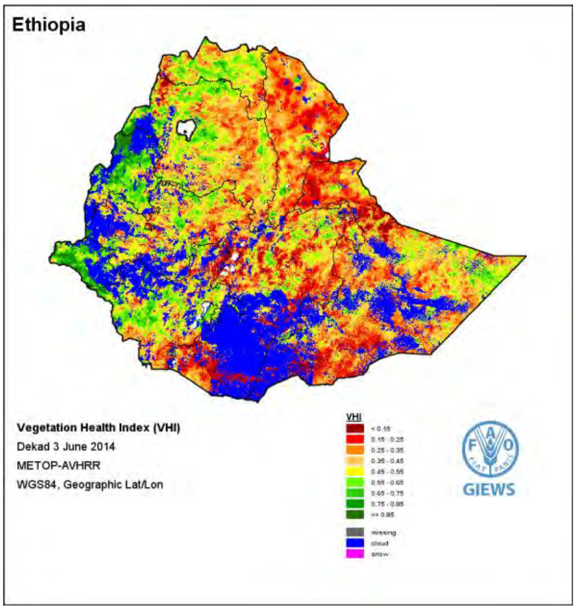
Vegetation Health Index (VHI) analysis

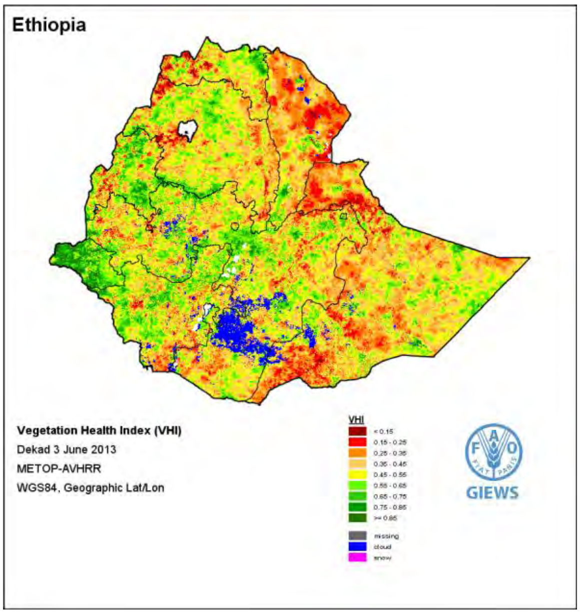
The Vegetation Health Index (VHI) is a composite index which combines, by adding with equal weights, the Vegetation Condition Index (VCI) and the Temperature Condition Index (TCI). The VCI relates the NDVI of the period of interest (which can be a week, dekad, month or a year) to the long-term minimum NDVI, normalized by the range of NDVI values calculated from the long-term record of the same period ($VCI = NDVI - NDVI_{min}/NDVI_{max} - NDVI_{min}$). The VCI values range from 0 to 1, the low values representing stressed vegetation conditions and high values representing optimal or above-normal conditions. The TCI is similar to the VCI, but formulated in reverse ratio, based on the hypothesis that high temperatures tend to cause a deterioration in vegetation conditions ($TCI = T - T_{max}/T_{max} - T_{min}$). Consequently, low TCI values (close to 0) indicate harsh weather conditions (due to high temperatures), while high values (close to 1) reflect mostly favourable conditions. In conclusion, a decrease in the VHI following, for example, a decline in both the VCI (relatively poor green vegetation) and the TCI (warmer temperatures) indicates stressed vegetation conditions and, over a longer period, it would be indicative of drought conditions.

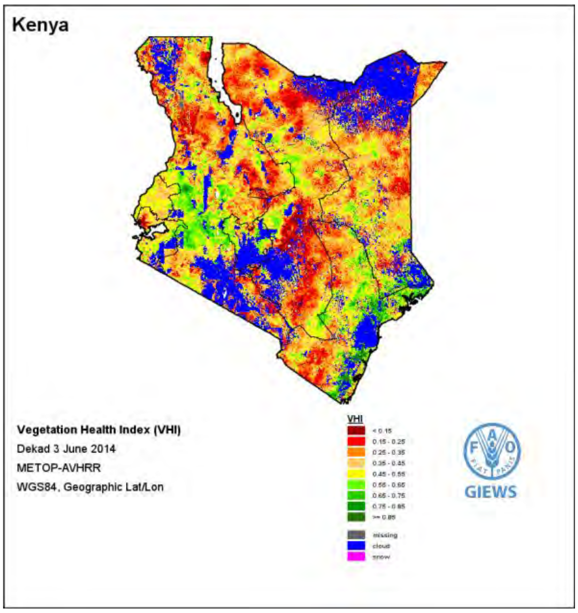
Comparing the VHI maps for the third dekad of June 2014 with one year before (see Figure 4), it is evident that the current situation is significantly less favourable in most pastoral and agro-pastoral areas of the region. In Ethiopia, the VHI is at very low levels in most southeastern and northern pastoral areas, mainly in Somali, eastern Amhara and northern Afar regions as well as lowlands of Guji and Borena zones in southern Oromia region. In Kenya, a similar situation is noted in most pastoral and agro-pastoral areas of Eastern and Northeastern provinces (in particular, central Marsabit, western Wajir and Isiolo counties) as well as in parts of the Rift Valley province (Turkana, Baringo and West Pokot counties). In Somalia, dry weather conditions have affected grazing resources in most southern regions as well as in western Galbeed and Awdal in Somaliland. In the United Republic of Tanzania, most northern bi-modal areas around lake Victoria (Kagera, Mwanza, Mara and Shinyanga regions) show very low VHI levels, while better conditions are observed in eastern coastal areas that received abundant rainfall in late May. In Uganda and South Sudan, current VHI levels are generally higher than one year ago, with only localized areas showing moisture stress such as the western districts of Mbarara and Bushenyi and the eastern parts of Karamoja region in Uganda.

So far, the main season is progressing very well in key cropping areas of western Ethiopia, such as Benishangul Gumuz and western Amhara, where the outlook of germinating crops is good and production prospects are generally favourable as the “kiremt” rains (June-September) are forecast at average to above-average levels. VHI shows favourable conditions in bi-modal and uni-modal areas of South Sudan, although the overall performance of the season will depend on the extent of reduction in planted area due to insecurity and displacements in conflict-affected states.

Figure 4: Vegetation Health Index maps for Ethiopia, Kenya, Somalia, United Republic of Tanzania, Uganda and South Sudan, comparing third dekad of June 2014 (left) with the third dekad of June 2013 (right)






Kenya
Vegetation Health Index (VHI)
Dekad 3 June 2014
METOP-AVHRR
WGS84, Geographic Lat/Lon
VHI
< 0.15
0.15 - 0.25
0.25 - 0.35
0.35 - 0.45
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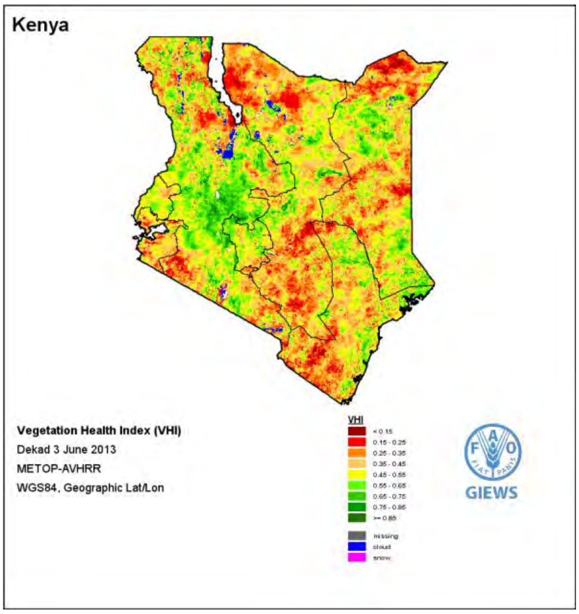
GIEWS


Kenya
Vegetation Health Index (VHI)
Dekad 3 June 2013
METOP-AVHRR
WGS84, Geographic Lat/Lon
VHI
< 0.15
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0.25 - 0.35
0.35 - 0.45
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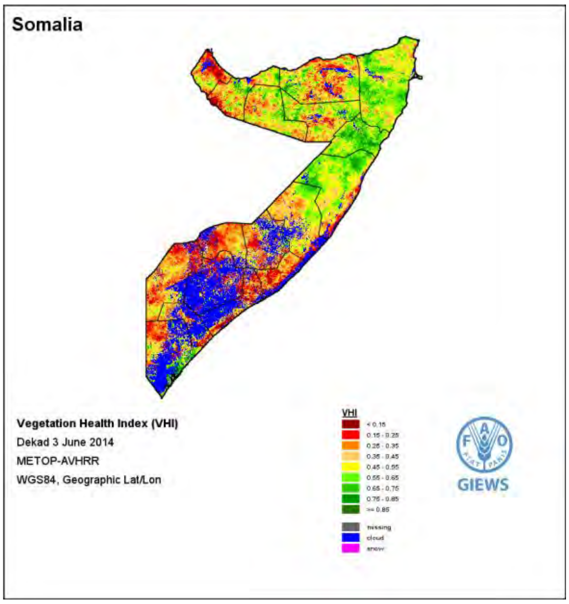
Somalia
Vegetation Health Index (VHI)
Dekad 3 June 2014
METOP-AVHRR
WGS84, Geographic Lat/Lon
VHI
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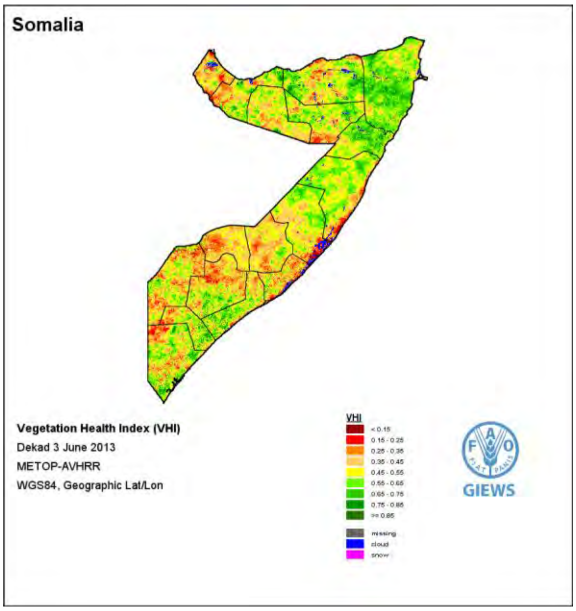
Somalia
Vegetation Health Index (VHI)
Dekad 3 June 2013
METOP-AVHRR
WGS84, Geographic Lat/Lon
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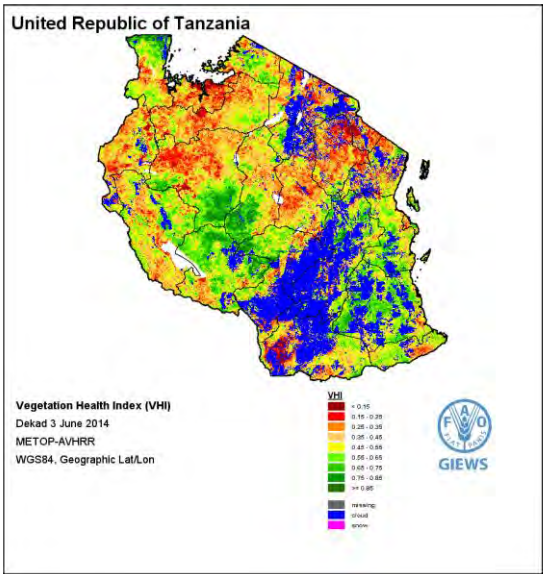
GIEWS


United Republic of Tanzania
Vegetation Health Index (VHI)
Dekad 3 June 2014
METOP-AVHRR
WGS84, Geographic Lat/Lon
VHI
< 0.15
0.15 - 0.25
0.25 - 0.35
0.35 - 0.45
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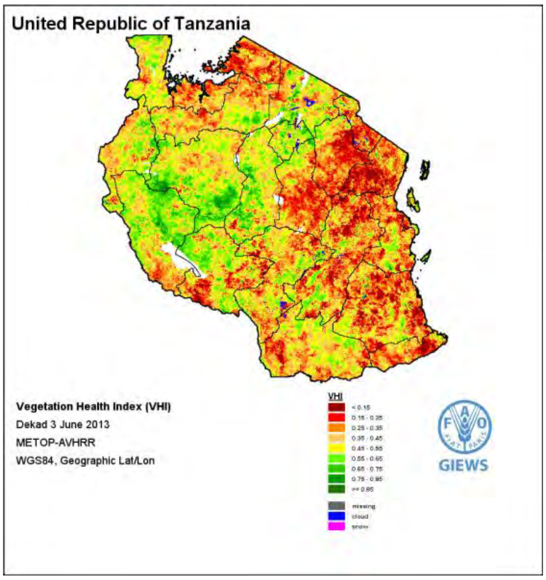
GIEWS


United Republic of Tanzania
Vegetation Health Index (VHI)
Dekad 3 June 2013
METOP-AVHRR
WGS84, Geographic Lat/Lon
VHI
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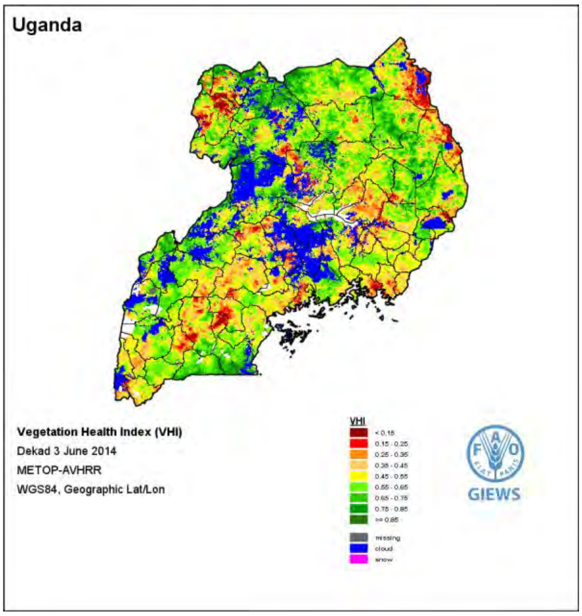
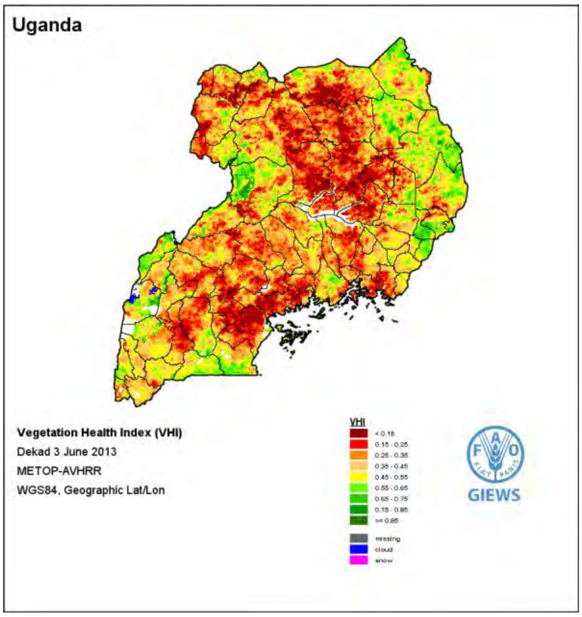
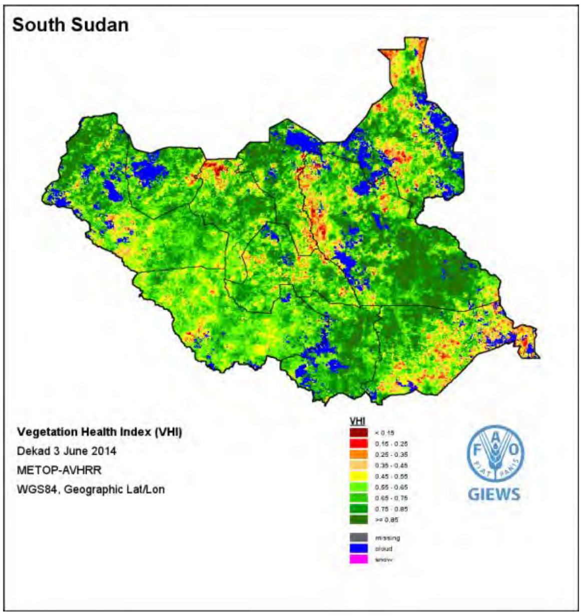
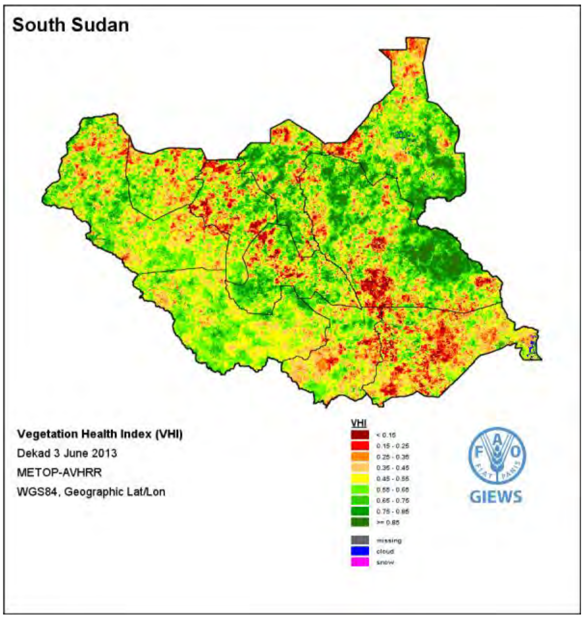








<u>Note</u>: Areas with a high percentage of agricultural area exposed to drought are shown in yellow to red colours.

<u>NB</u>: The procedure does not weight the importance of the phenological phase when water stress is experienced. This implies that the risk of seasonal failure can in fact be higher as indicated in the map if water stress happens during the most sensitive development phases such as, for example, flowering for cereal crops.

ANNEX

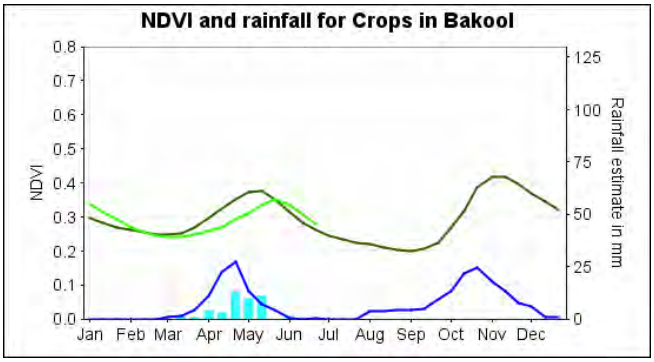
Seasonal NDVI (METOP) and rainfall estimates (TAMSAT) profiles for areas with below-average performance during the 2014 main rainy season

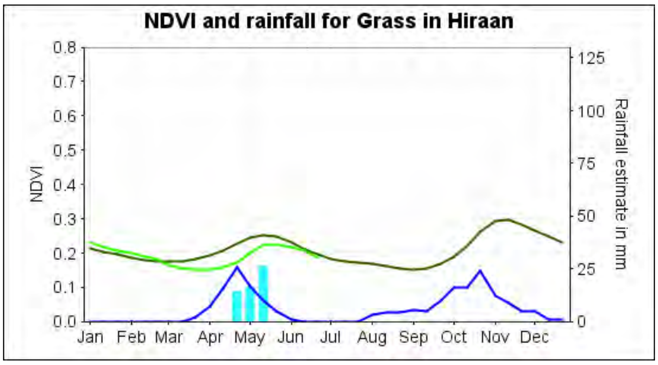
Legend:

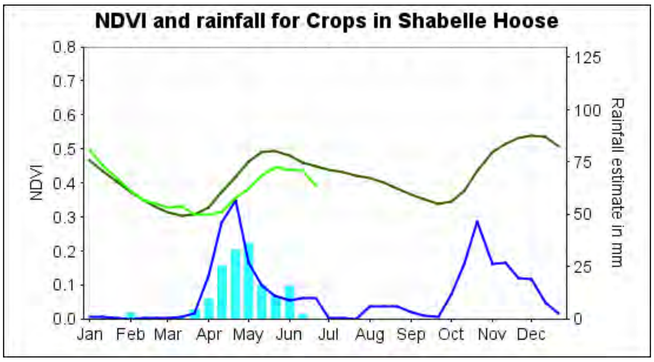
NDVIc 2014 — NDVIc Hist. avg — Rainfall Hist. avg — Rainfall 2014

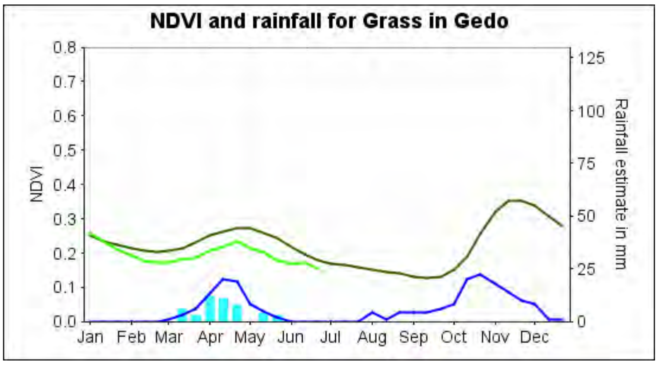
Cropland	Grassland

Somalia

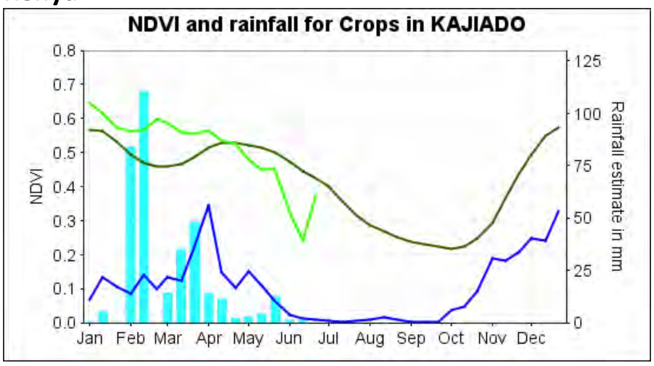


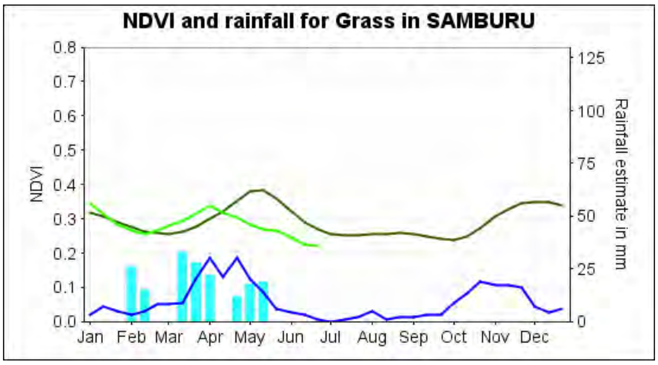






Kenya

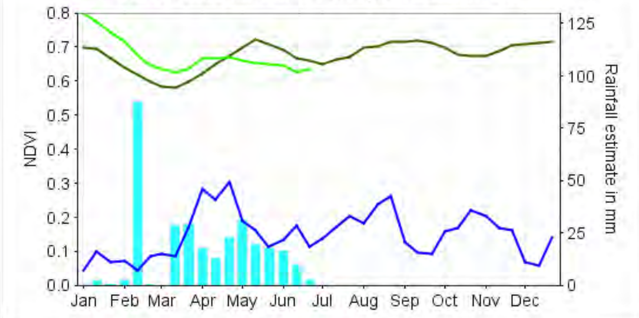




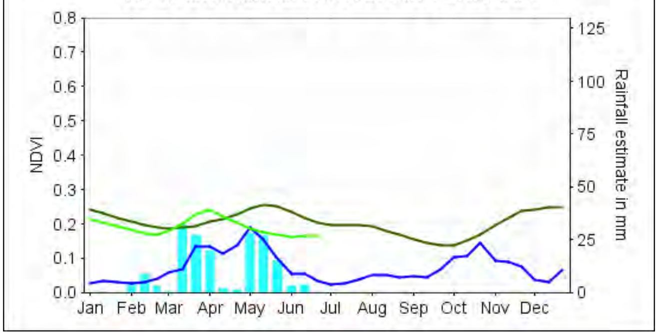
Cropland **Grassland**

Kenya

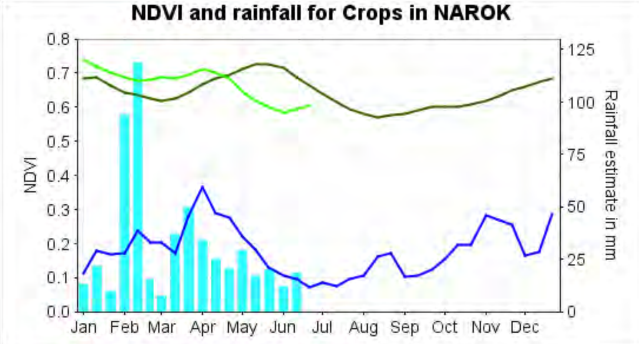
NDVI and rainfall for Crops in BARINGO



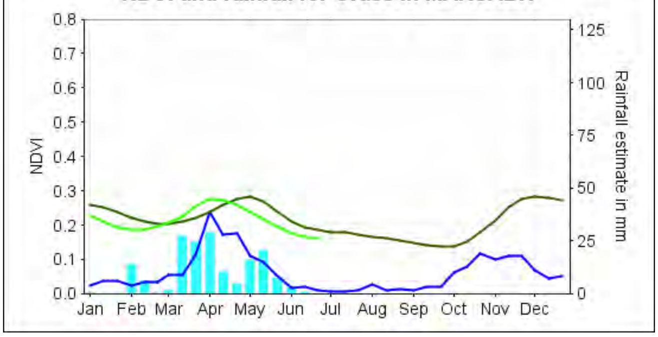
NDVI and rainfall for Grass in TURKANA



NDVI and rainfall for Crops in NAROK

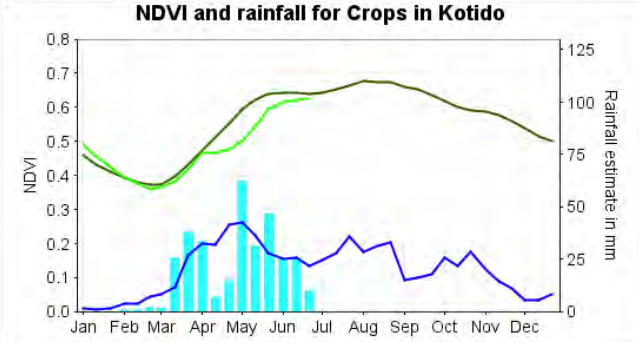


NDVI and rainfall for Grass in MARSABIT



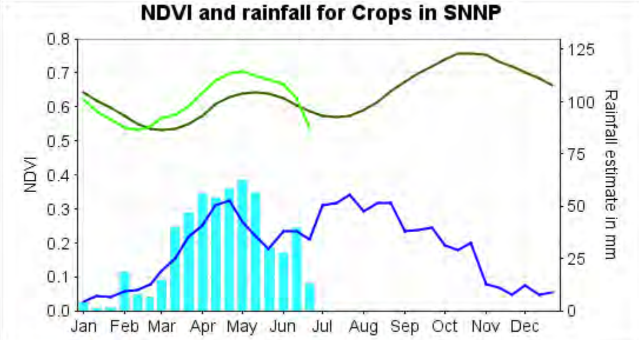
Uganda

NDVI and rainfall for Crops in Kotido

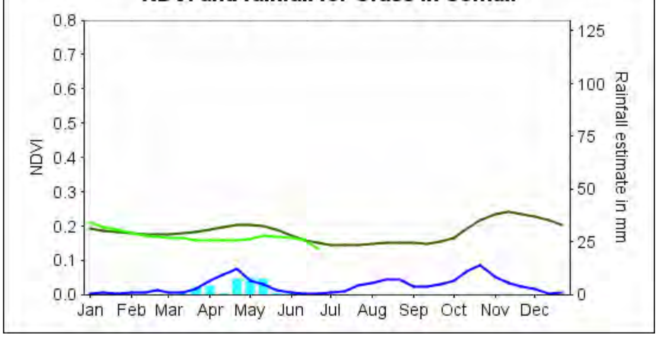


Ethiopia

NDVI and rainfall for Crops in SNNP

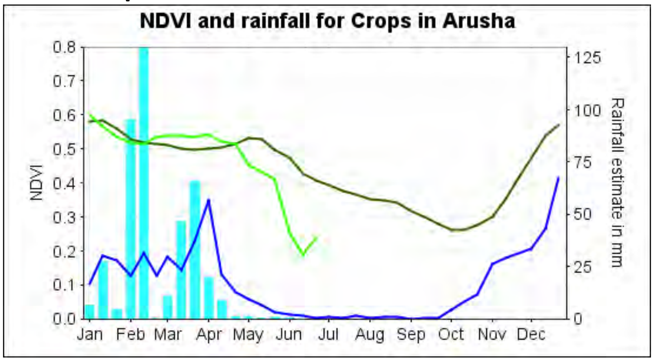


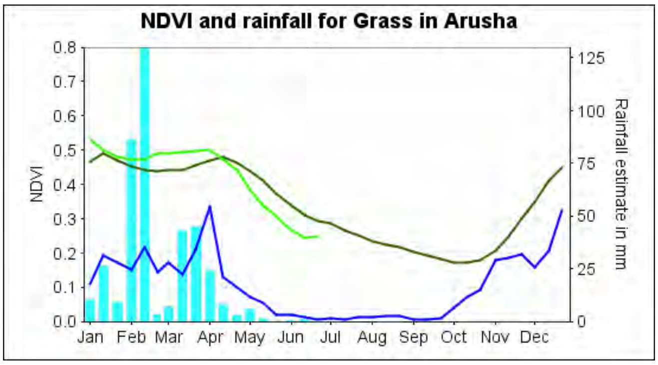
NDVI and rainfall for Grass in Somali



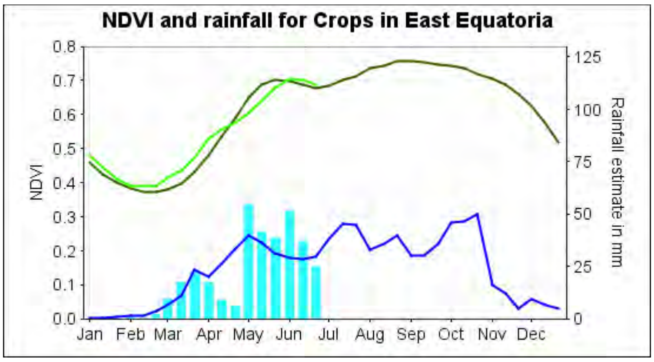
Cropland | **Grassland**

United Republic of Tanzania





South Sudan



Note: Seasonal profiles of NDVI and rainfall estimates as compared to the long-term average for administrative areas with low seasonal performance for croplands (left column) and grasslands (right column).

Disclaimer

This report is prepared by FAO's Global Information and Early Warning System in collaboration with the Joint Research Centre (JRC) of the European Commission (EC), with information from official and unofficial sources. None of the information in this report should be regarded as statements of governmental views. Furthermore, the designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the FAO concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This report is based exclusively on interpretation of satellite-derived observations and aims at providing a rapid early warning of possible drought in the Greater Horn of Africa, following a long rainy season with irregular distribution in time and space. The analysis included here will need to be complemented by ground data and monitoring until the end of the season, is highly recommended. A more complete analysis including ground reports and socio-economic data will be prepared after the end of the season.

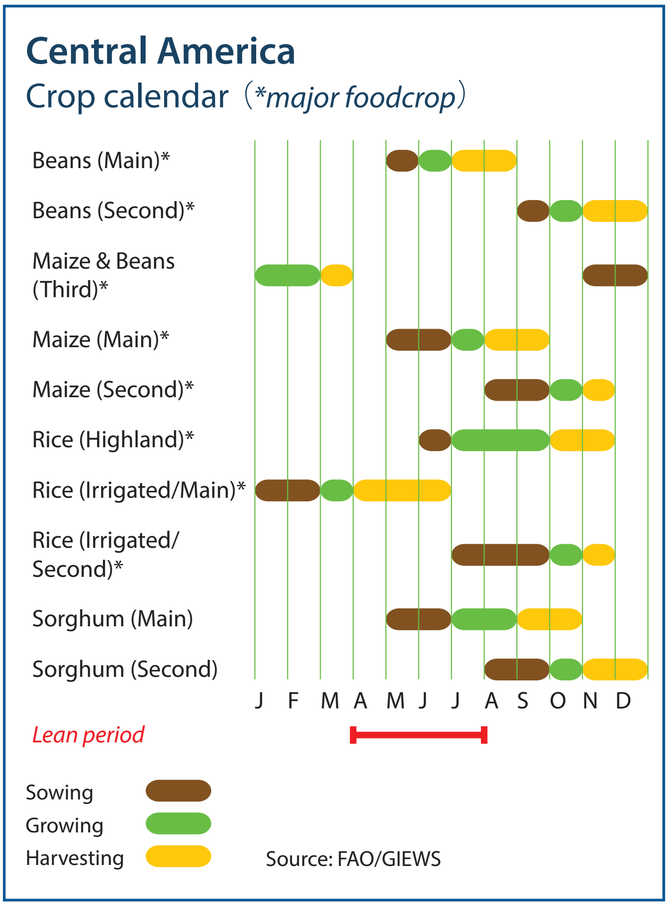
GIEWS Update

22 July 2014

Central America: Prospects for the 2014 main season cereal production mixed, with dry weather affecting crops in parts of Nicaragua and Honduras

Sowing of the main season 2014 cereal harvest, from May to June, has concluded. Weather during planting was generally favourable in most of the main growing areas of the subregion, with above-average rains in mid-June. However, in large areas of Nicaragua and southern parts of Honduras, below average precipitation until the first dekad of July, resulted in area declines and localized crop losses. More rains are urgently needed in these areas to avoid a reduction in yield potential. Forecasts at the beginning of the season, that assume normal secondary crop seasons to be planted from August, point to a 2014 subregional aggregate cereal production of 4.6 million tonnes, marginally higher than last year's good level and significantly above the five-year average following continuous agriculture input support by governments of the subregion, mainly in the form of seeds and fertilizers. Nonetheless, if dry weather persists in parts of Nicaragua and Honduras, this forecast may not materialize.

The high probability (65 percent) of an El Niño event in the last quarter of this year gives further cause for concern about this year's cereal production in Central America as the phenomenon is often associated with dry weather. As of the first dekad of July, latest reports from the main meteorological and oceanic institutions concur that an El Niño event has not yet started. Depending on the timing and intensity of El Niño – which is highly variable – the dry weather could negatively affect yields of the main cereal cropping season (May-August) in the final crop development stage and/or planting of the second season (August-December), potentially dampening production.



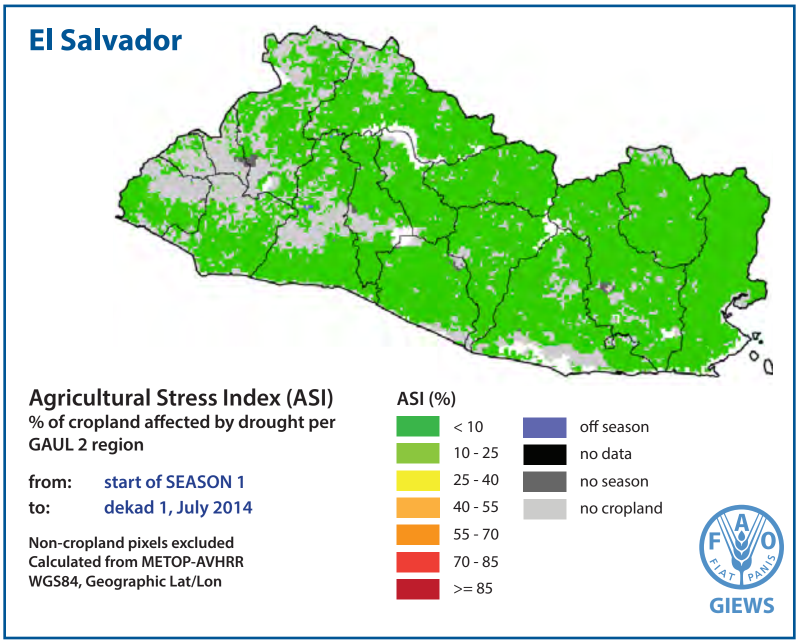
Central American countries cereal production

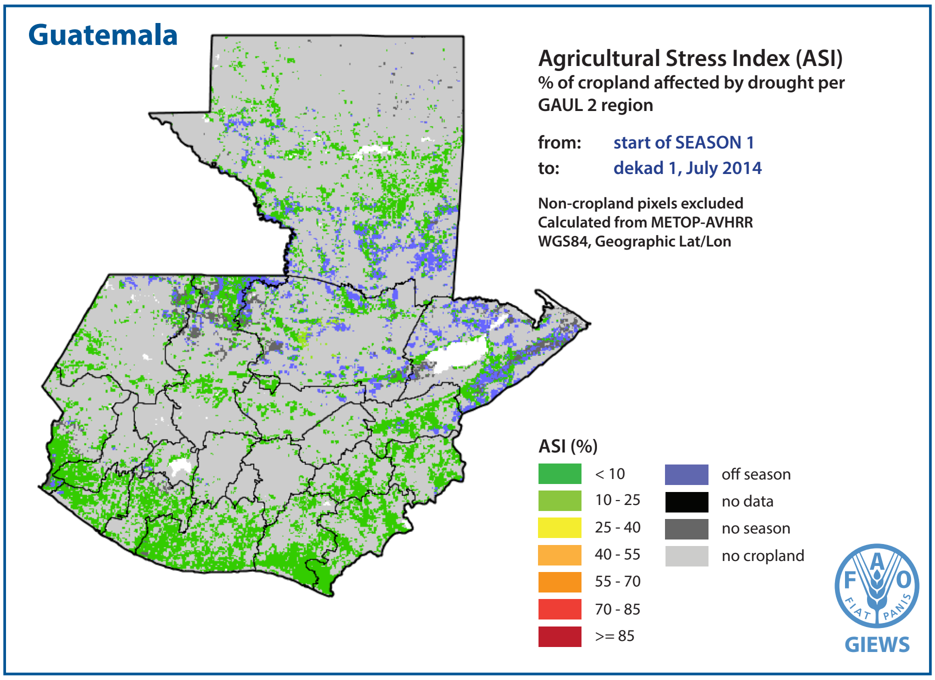
000 tonnes

	Coarse grains			Rice (paddy)			Total cereals			
	2012	2013 estim.	2014 f'cast.	2012	2013 estim.	2014 f'cast.	2012	2013 estim.	2014 f'cast.	Change: 2014/2013 (%)
El Salvador	1 065.7	1 096.5	1 091.0	28.3	31.0	31.0	1 094.0	1 127.5	1 122.0	-0.5
Guatemala	1 733.0	1 778.2	1 792.0	31.6	32.5	33.0	1 772.6	1 818.7	1 833.0	0.8
Honduras	592.0	577.0	583.0	69.0	80.0	80.0	662.0	658.0	664.0	0.9
Nicaragua	528.5	557.5	571.0	418.5	428.1	430.0	947.0	985.6	1 001.0	1.6
TOTAL	**3 919.2**	**4 009.2**	**4 037.0**	**547.4**	**571.6**	**574.0**	**4 475.6**	**4 589.8**	**4 620.0**	**0.7**

Note: Totals and percentage changes computed from unrounded data.

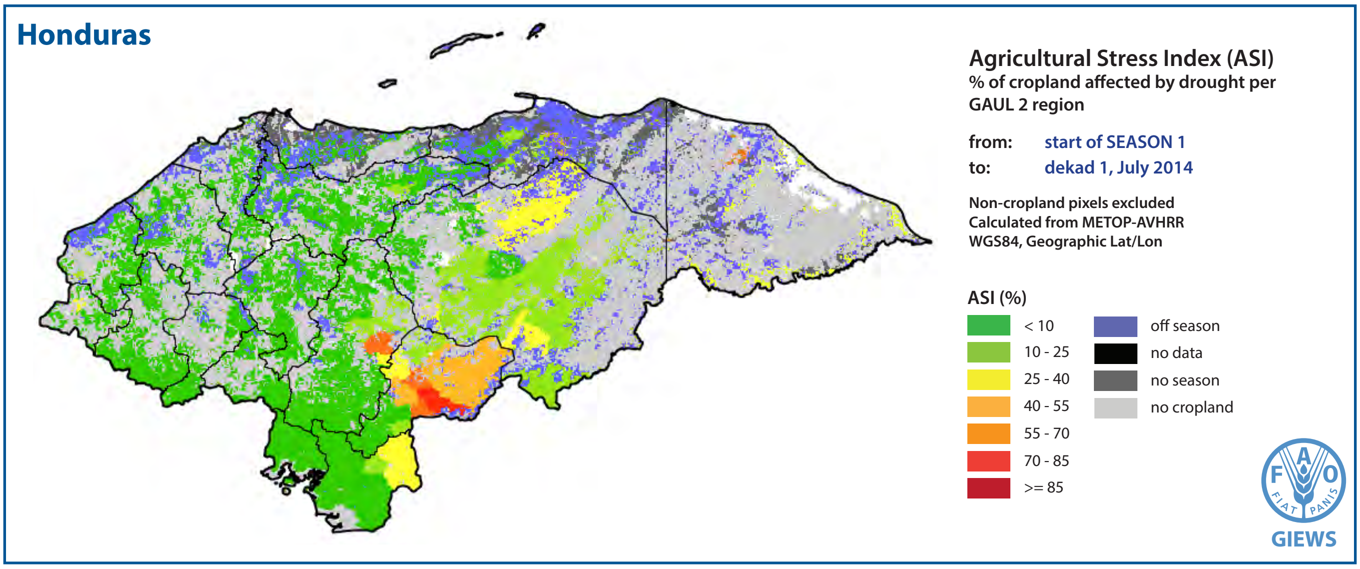
El Salvador: Sowing of the main season maize crop normally takes place from late May to June. Rain levels until the last dekade of June were either average or above average in most growing areas and early-planted crops are reported in good conditions. Official forecasts point to a marginal decline in the 2014/15 aggregate maize production from the record levels of the previous two years, as a result of planting reductions in parts due to delays in the distribution of the Government's agricultural inputs packages. However, assuming favourable weather conditions during all the three cropping seasons, the aggregate maize production is expected at an above-average level of 950 000 tonnes.





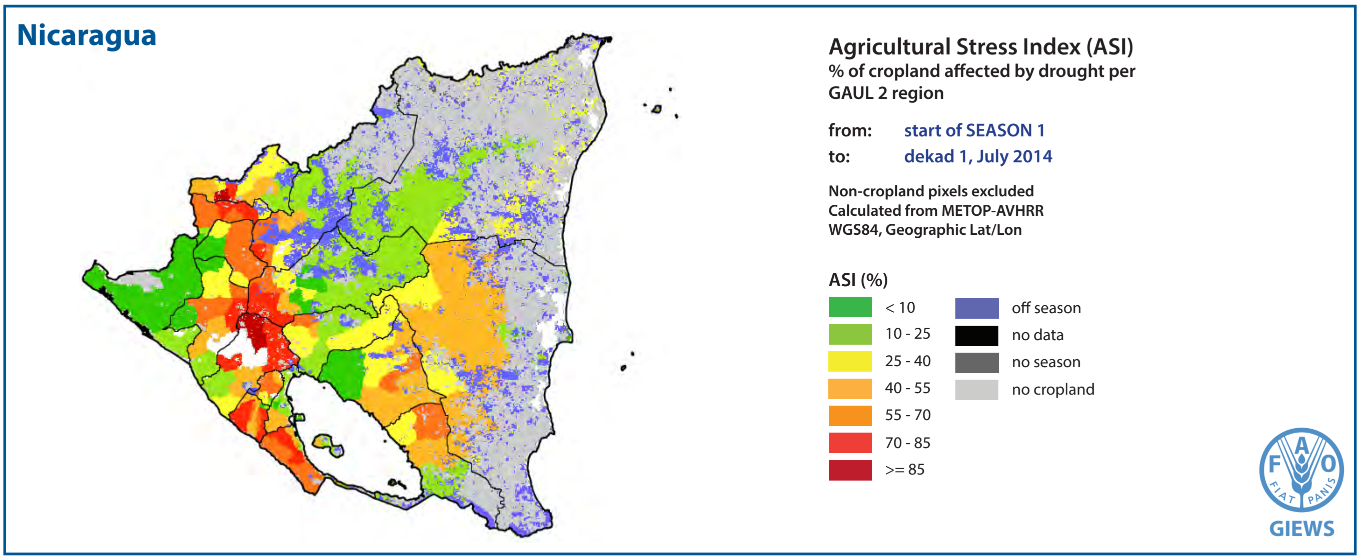
Guatemala: Planting of the 2014 main season maize crop took place under favourable weather and a good establishment of crops is reported from most areas, with minor losses due to high winds in the municipalities El Estor and Izabal (1 400 households affected). Assuming normal weather continues in the coming months, early official forecasts point to a 2014/15 aggregate maize production of almost 1.75 million tonnes, slightly above last year's high level.

Honduras: Weather conditions were generally favourable in most growing areas during the sowing of the 2014 main season maize crop, including the department of Olancho (Northeastern Region). However, in parts of El Paraiso and Choluteca departments (mainly in the Southern Region, accounting for an average of 13 percent of the annual maize production), rains were late and below average. Precipitation recovered in mid-June but dry weather resumed from the last part of the month. Partial or total crop losses have been reported, particularly in 8 of the 19 municipalities of the department of El Paraiso (Yauyupe, Vado Ancho, Texiguat, San Lucas, Alauca, San Antonio de Flores, Soledad and Liure), where at least 70 000 families have been affected and the Government has declared a state of emergency due to drought. The affected populations are currently receiving food assistance by the Goverment. Forecasts of the 2014/15 aggregate production (first, second and third seasons) at the time of planting pointed to a maize output of 545 000 tonnes, up from last year's below–average production. Although a detailed assessment of the crop damage is not yet available this forecast is likely to be revised downwards.



Nicaragua: The outlook for the 2014 main season cereal crops is uncertain. Below average rains in the last dekad of May and first of June in large parts of the country delayed sowing of the 2014 main season maize crop, particularly in the "dry corridor" of the northern departments of Nueva Segovia, Madriz and Estelí, bordering Honduras, where the dry weather was most severe. While official assessments of the crop damage are not yet available, above–average precipitation in the second dekad of June may have arrived too late to prevent reductions in area planted and yields of early planted crops. These three departments together represent on average 12 percent of national maize production. By contrast, in major central growing areas (Matagalpa and Jinotega) no significant rainfall deficits have been reported.

Nueva Segovia, Madriz, and Estelí, are important livestock rearing areas and the dry weather has resulted in poor pasture condition and shortages of water which have reportedly caused serious losses of bovine. Emergency distributions of sugar molasses and peanuts for feed are currently being distributed to prevent further losses of the herd.



About ASIS

The Agriculture Stress Index (ASI) is a recently developed FAO indicator that highlights anomalous vegetation growth and potential drought in arable land during the crop growing season. ASI integrates the Vegetation Health Index (VHI) in two dimensions that are critical to assess a drought event in agriculture: temporal and spatial. ASI assesses the temporal intensity and duration of dry periods and calculates the percentage of arable land affected by drought (pixels with a VHI value below 35 percent – identified as critical level in previous studies to assess the extent of the drought). The whole administrative area is classified according to the percentage of arable area affected by drought conditions. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

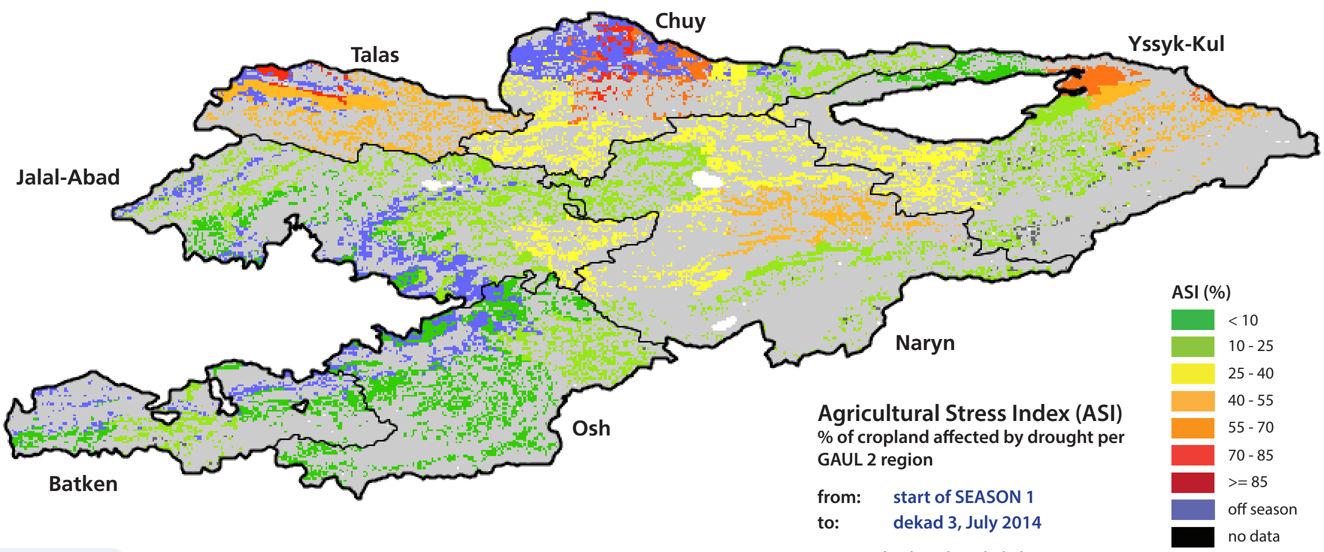
8 August 2014

GIEWS Update

Kyrgyzstan: Severe drought in northern parts affects 2014 wheat production

- Extended dry weather conditions over the northern parts of the country since mid-February have damaged crop prospects and raised serious concerns over the food supply outlook of Kyrgyzstan.
- Analysis based on satellite imagery together with field reports indicate that vast areas in the northwest (the most important wheat producing region of the country) received below-average rainfall from February through July, which coincides with crucial periods of crop establishment (spring wheat) and growth stages (winter crop).
- GIEWS analysis based on the Agricultural Stress Index (ASI), indicates that wheat yields in 2014 will be close to the low yields obtained in 2008 and 2012 when Kyrgyzstan was affected by serious droughts. Wheat yield in 2008 and 2012 were estimated at 1.94 and 1.68 tonnes per hectare, respectively, compared with an average of 2.37 tonnes per hectare for 2009, 2010, 2011 and 2013.
- Provisional estimates by the National Statistical Committee (NSC) indicate that wheat yields in Chuy Oblast (Province) which represents over 40 percent of national output, will decline from 2.08 tonnes per hectare in 2013 to 1.35 tonnes per hectare in 2014. These estimates are consistent with yield measurements carried out in late July by an FAO team as part of a rapid assessment conducted in Moskow and Sokuluk Rayons (Chuy Oblast).
- The NSC estimates the aggregate area planted to wheat (winter and spring seasons) during the 2013/14 cropping season at 340 167 hectares, a slight decline compared to 2013.
- A significant drop in wheat production is anticipated this year, mostly as a result of the impact of drought conditions on yield. Consequently, cereal imports are forecast to increase significantly in the 2014/15 marketing year (July/June).
- A more rigorous field assessment, lasting until mid-September, is underway by the NSC and the Ministry of Agriculture and Amelioration of Kyrgyzstan together with FAO Representation to quantify the extent of damage and estimate this year's harvest.

Kyrgyzstan - Agricultural Stress Index for the current season (until the third decade of July 2014)



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14 August 2014

GIEWS Update

Central America: Prospects for the 2014 main season cereal production deteriorated with dry weather in July. Large numbers of small farmers affected

Harvesting of the 2014 main *de primera* basic grains season, mainly maize, but also rice and beans, has just started in the subregion. Despite generally favourable rains from May to June, an unusually early and extended *canicula* - a recurrent dry period of about 10 days that occurs around July/August - has negatively affected crops in the final stages of development. Most affected is the area known as the Dry Corridor, where severe localized losses are reported. Reductions in the 2014 maize outputs are anticipated in El Salvador, Guatemala, Honduras and Nicaragua.

A large number of subsistence farmers have suffered the partial or total loss of their crops and livestock and are in need of assistance. The governments of the subregion have started to distribute food to the affected populations, as well as seeds and fertilizers to increase the area planted of the second *de postrera* crop season, about to start.

Early prospects for the second seasons are uncertain. Rains were received in the first dekad of August in parts, mainly in El Salvador and Honduras, but the probability of an El Niño event in the last quarter of this year, which is often associated with dry weather, gives cause for concern. As of the first dekad of August, an El Niño event has not yet started. However, latest reports from the main meteorological and oceanic institutions concur that the probability of an El Niño, although lower than earlier, remains high (50 to 65 percent).

Maize production

000 tonnes

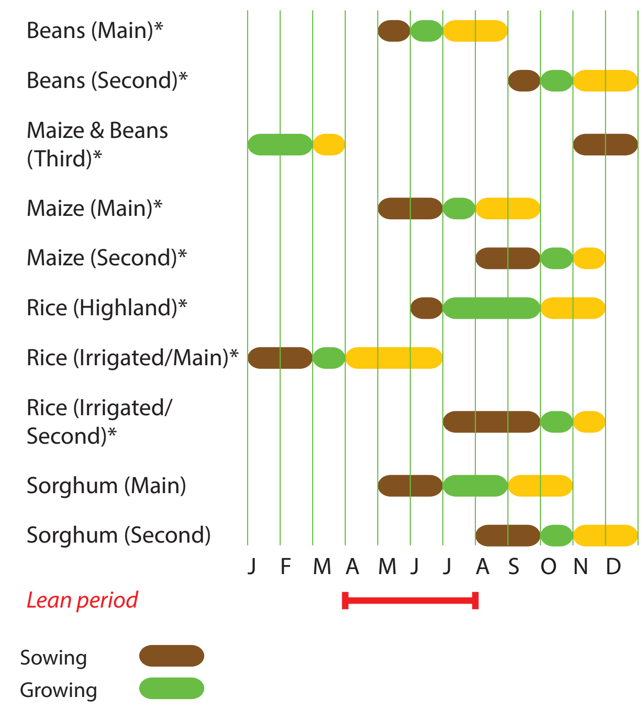
	2009-2013 average	2013 estimate	2014 forecast	Change: 2014/2013 (%)
El Salvador	841	953	857	-10
Guatemala	1 684	1 735	1 650	-5
Honduras	555	537	492	-8
Nicaragua	514	498	448	-10

"Dry Corridor"

The "Dry Corridor" (Corredor Seco) of Central America is a strip of land stretching from the low areas of the Pacific watershed through the foothills (0-800 metres) of Guatemala, El Salvador, Honduras, Nicaragua and parts of Costa Rica. It is a semi-arid region characterized by recurrent droughts, which covers nearly one-third of the Central American territory.

Central America crop calendar

**major foodcrop*



Source: FAO/GIEWS

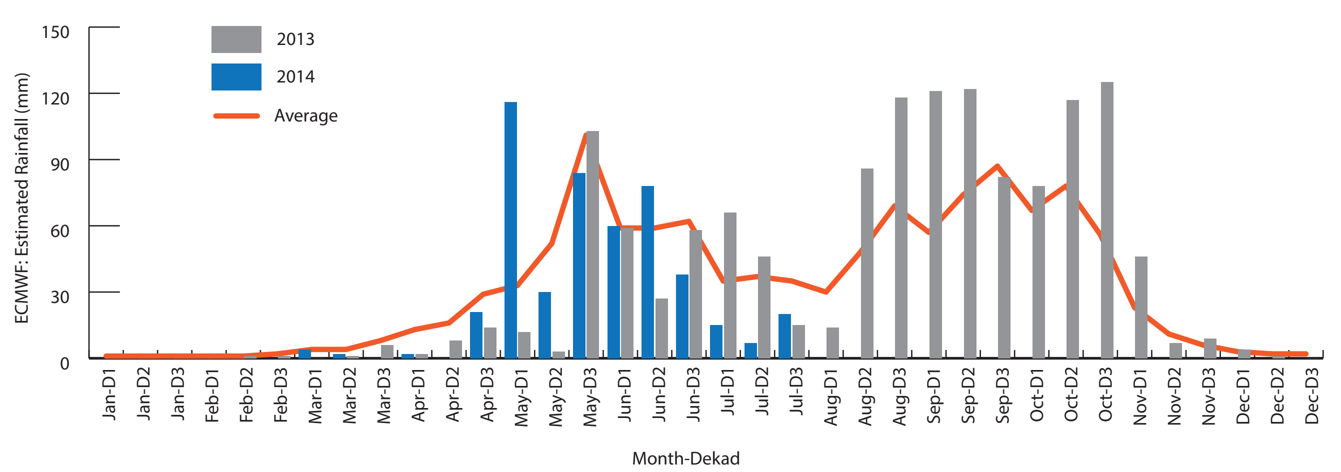
El Salvador: Following adequate rains until the last dekad of June in most growing areas, widespread dry weather in July, with the lowest precipitation recorded in 44 years, negatively impacted the developing main season maize crops. All the surface of the country falls in the Dry Corridor and it is estimated that 65 percent of the agricultural area has been affected by the drought. The most severe agriculture damage is reported in the Eastern Region, including the departments of Usulután, Morazán, La Union and San Miguel, which together account for 30 percent of the national maize production. In several locations of the Eastern Region, the dry weather lasted up to 35 days and crops have been completely lost. In addition, feed shortages are adversely affecting livestock conditions. At national level, official estimates indicate the loss of some 92 000 tonnes of maize and the 2014 aggregate maize production forecast has been revised downward to 857 000 tonnes, 10 percent lower than the record harvest of 2013. Similarly, an estimated 91 000 tonnes of beans have been lost to the drought.

Preliminary assessments indicate that 56 000 small farm families in the Eastern Region, who rely on agriculture as their main source of livelihood are in need of assistance. The Government has prepared a USD 15 million "Drought Contingency Plan"', aimed at increasing plantings of the forthcoming second crop season, mainly beans and maize, through the distribution of additional seeds and fertilizers.

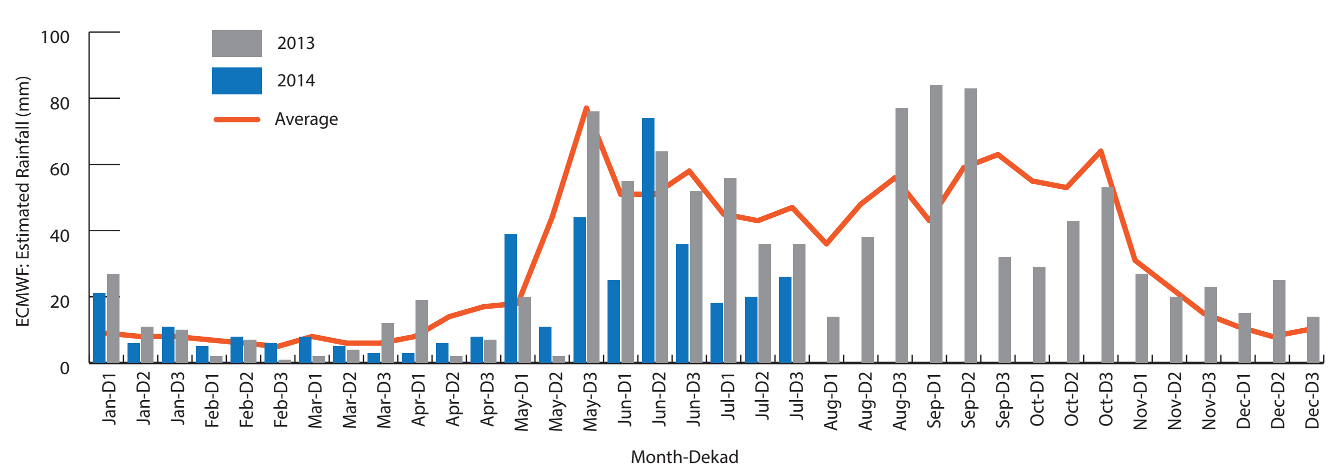
Honduras: The early start of the *canicula*, with dry weather from late June, has resulted in losses of the 2014 main season crops, mainly maize. Most affected are the areas of the South, North East, and Central West regions located in the Dry Corridor.

The Government has declared the State of Emergency in 66 municipalities of 10 departments (out of a total of 17), namely El Paraíso, Francisco Morazán, Comayagua, Choluteca, Valle, La Paz, Lempira, Intibucá, Copán and Ocotepeque. A detailed assessment of the overall crop damage is not yet available but preliminary official

El Salvador - Crop area rainfall in La Union department



Honduras - Crop area rainfall in El Paraíso department



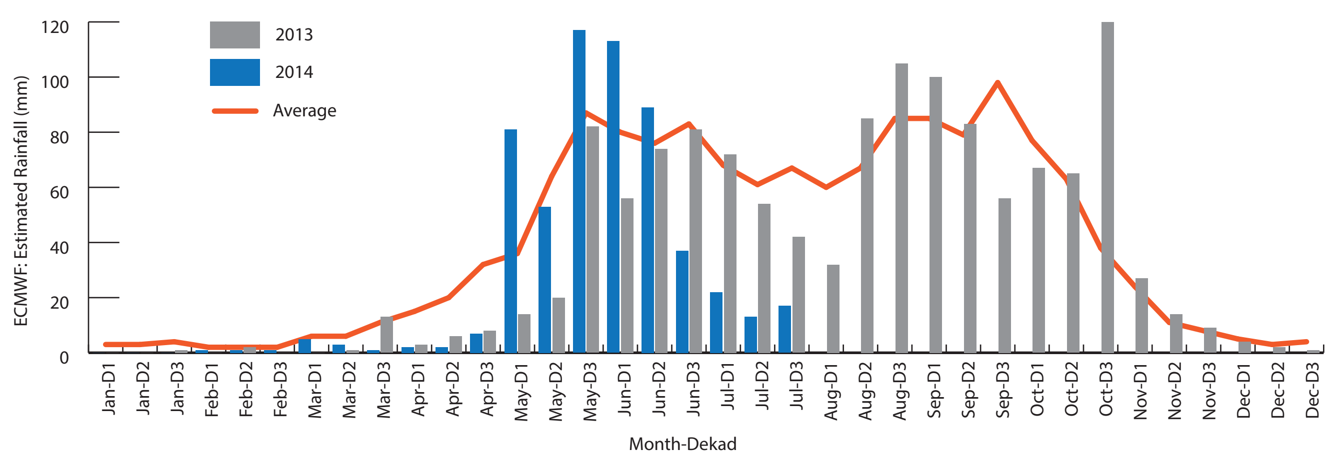
information indicates the loss of 45 000 tonnes of the first season maize crop. As a result, FAO has revised downward its forecast of the 2014 aggregate production to 492 000 tonnes, 8 percent below last year's about average level.

The affected population is currently estimated at 76 712 families of small farmers, who are reported to have 70 percent of their maize crop damaged. The Government's Contingency Plan, amounting to USD 4.7 million, includes food assistance and distribution of seeds and fertilizers to increase plantings of the forthcoming second season.

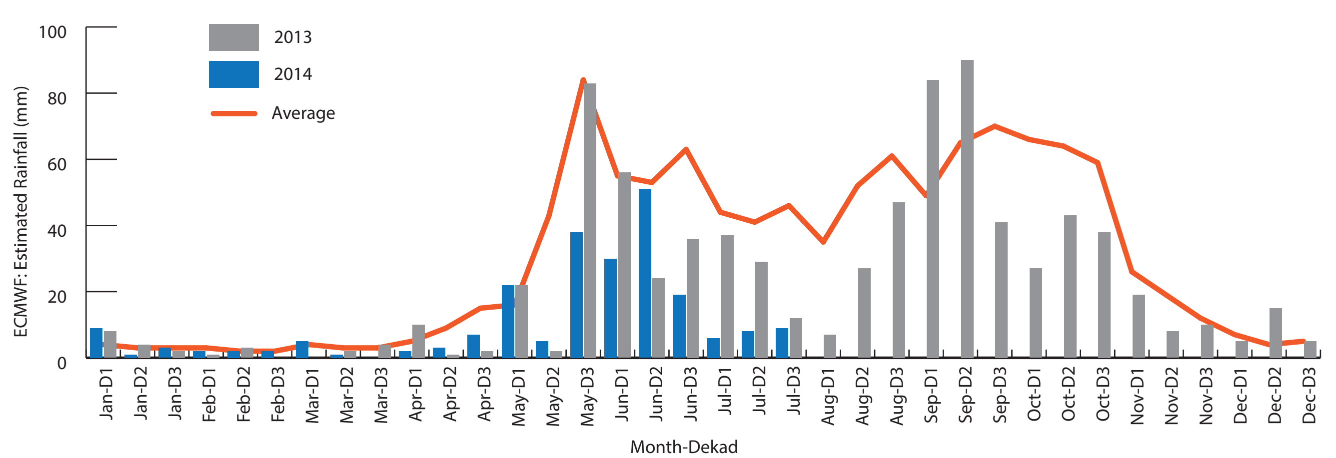
Guatemala: Continuous dry weather during July, particularly in the Eastern Region departments of El Progreso, Jalapa, Zacapa, Chiquimula, Jutiapa and Baja Verapaz, damaged developing maize and bean crops of the first season. An official assessment indicates that 88 municipalities in 12 of the country's 22 departments have been affected with severe crop losses. Overall, it is estimated that 85 000 tonnes of maize and 30 000 tonnes of beans have been lost to drought. However, as the areas in the Dry Corridor contribute to only about 20 percent of the national production, the impact of the drought at national level is relatively limited. The official forecast of the 2014 aggregate maize production has been lowered by 4 percent, pointing to an output of 1.65 million tonnes, 5 percent below last year's good level. The Government through the Ministry of Agriculture, Livestock and Food (MAGA) has started to distribute food aid to the most affected population, estimated at 168 278 rural families and plans to distribute beans and maize seeds for planting of the second season.

Nicaragua: Dry weather persisted in July in areas of the Dry Corridor, already affected by below average rains since planting time, worsening conditions for the developing 2014 main season maize crop. Worst affected areas are the northern departments of Nueva Segovia, Madriz and Estelí, bordering Honduras. Severe localized losses of maize, beans and groundnuts crops, as well as livestock are

Guatemala - Crop area rainfall in Jutiapa department



Nicaragua - Crop area rainfall in Estelí department



reported. However, the dry spell in July affected also parts of the major growing areas of Matagalpa and Jinotega. Overall, it is estimated that 112 municipalities, out of the country's 156, have been impacted by the drought with losses of 50 000 tonnes of maize and 45 000 tonnes of rice. As a result, the production forecast for the 2014 aggregate maize and rice crop has been revised downward by 12 percent and 22 percent respectively. The 2014 maize output is now projected at 450 000 tonnes, 10 percent lower than the previous year's level and below the five-year average. To avoid shortages of basic grains, the Government has authorized the tariff-free import of 72 000 tonnes of maize and 97 000 tonnes of rice and is planning to distribute food assistance to 100 000 most affected households.

Costa Rica: Dry spells in June and July affected the Guanacaste province, which is the only area in the Dry Corridor. Localized crop losses of the main rice crop and sugarcane are reported. Guanacaste is an important livestock rearing province and poor pasture conditions are adversely affecting animal conditions. Beneficial rains in early August improved the situation somewhat but more precipitation is needed. Preliminary assessments indicate total agricultural losses of USD 24 million.

GIEWS Update

19 September 2014

Pakistan: Severe floods affect large numbers of people and cause agriculture damages

Highlights:

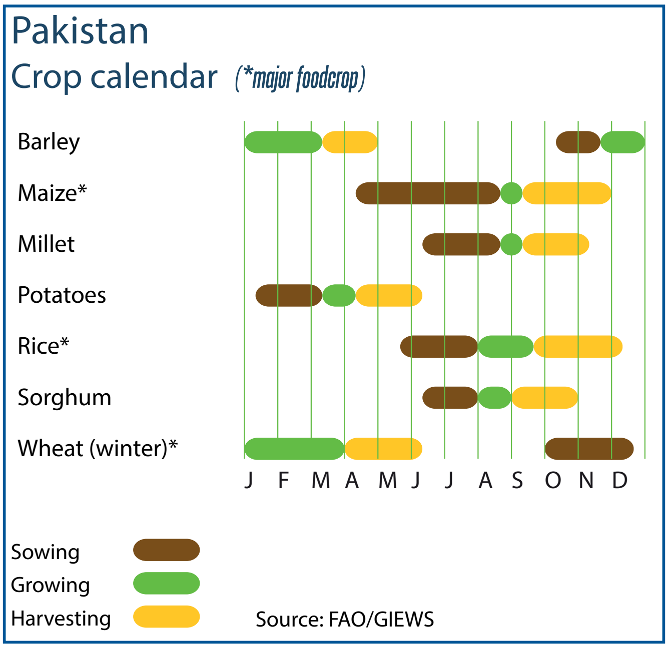
- Severe floods in early September adversely affected the 2014 *Kharif* season cereal and cash crops, mainly in the key growing Punjab province.
- The floods caused loss of lives, displaced large numbers of population and affected nearly 2 million people.
- The Government of Pakistan is providing the flood-affected families food and non-food assistance.

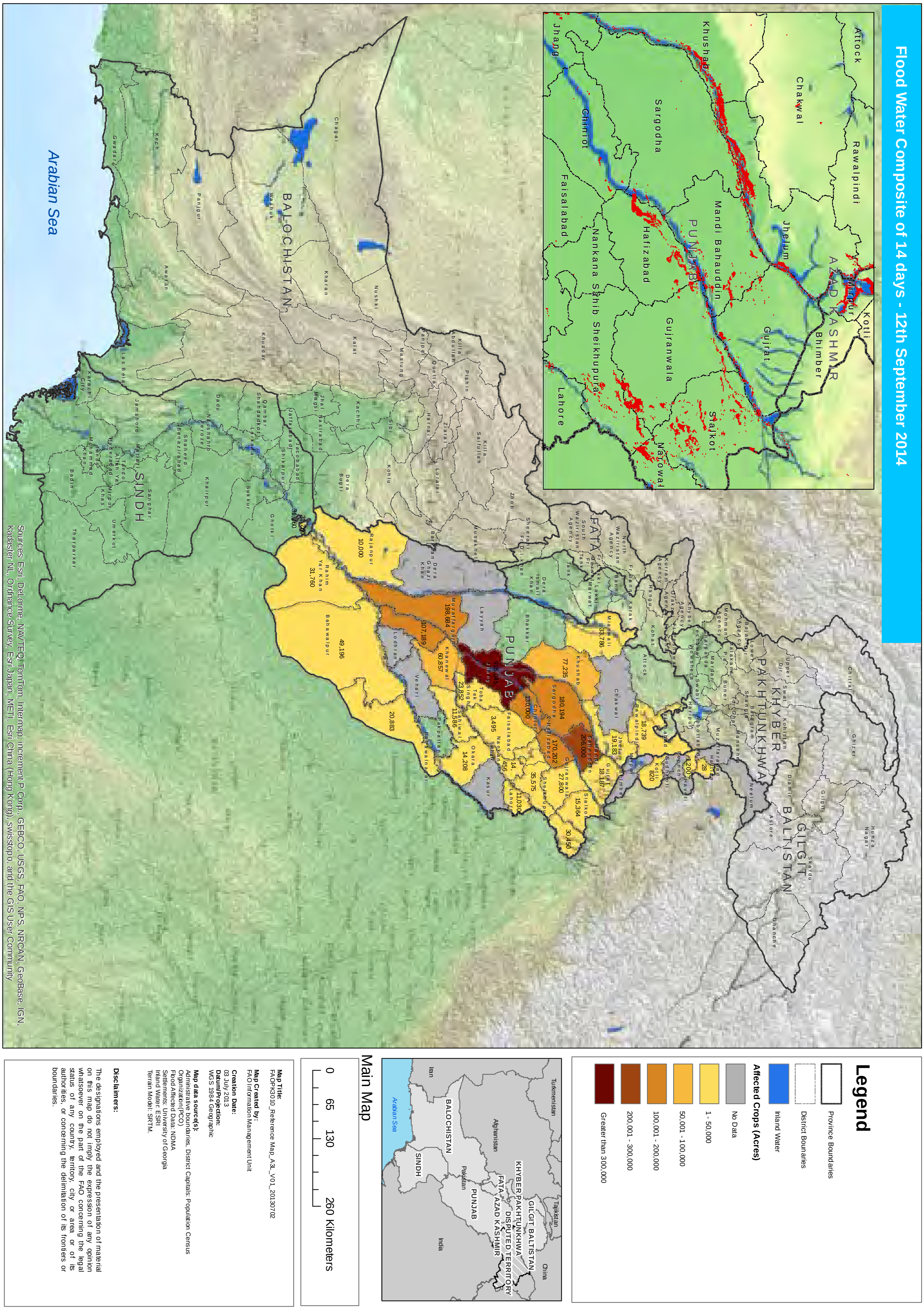
Heavy monsoon rains during the first dekad of September caused the main eastern rivers of Pakistan (Chenab and Sutlej) to overflow, resulting in floods and landslides in northern parts of Punjab, Gilgit Baltistan and Azad Jammu and Kashmir (AJK) provinces. Latest official assessments, as of 18 September 2014, indicate that floods caused the loss of hundreds of lives, displaced 533 000 people and adversely affected nearly 2 million. Severe damage to housing, infrastructure and agriculture is also reported. The situation may further deteriorate with the river Indus, at Guddu and Sukkur barrages, likely to attain medium to high flood levels in the coming days and inundate several districts in the Punjab and Sindh provinces.

Severe damage to 2014 cereal and cash crops at subnational level

Floods affected crops of the 2014 *Kharif* season to be harvested from October, including rice, maize, sugar cane, cotton and other crops. Provisional official estimates indicate that, as of 18 September 2014, about 986 000 hectares of standing crops, particularly paddy fields in low-lying areas, have been adversely affected, mainly in Gujranwala, Faisalabad and Sargodha Divisions in the key growing province of Punjab. The affected area represents some 11 percent of the total area planted with cereal, sugar cane and cotton during the 2014 *Kharif* season. Livestock losses were also reported. However, a detailed assessment of the agricultural damage will not be available until the flood water levels recede.

Pakistan normally exports around 35 percent of its rice production and in 2013 was the fourth largest rice exporter with shipments estimated at 3.4 million tonnes. Rice, sugarcane and cotton represent an important source of foreign exchange earnings and are cash crops for small farmers. Losses of these crops may negative affect the country's export revenues, as well as household's incomes. In addition, the floods resulted in the loos or damage of agricultural inputs, including seeds stocks, fertilizers and machinery at the household level, which could have a negative impact on the next *Rabi* season wheat crop, to be planted from October.




Flood Water Composite of 14 days - 12th September 2014
Arabian Sea
BALOCHISTAN
SINDH
PUNJAB
KHYBER PAKHTUNKHWA
GILGIT BALTISTAN
AZAD KASHMIR
FATA
Legend
Province Boundaries
District Boundaries
Inland Water
Affected Crops (Acres)
No Data
1 - 50,000
50,001 - 100,000
100,001 - 200,000
200,001 - 300,000
Greater than 300,000
Main Map
0 65 130 260 Kilometers
Map Title: FAOPK3010_Reference Map_A3_V01_20130702
Map Created by: FAO Information Management Unit
Creation Date: 03 July 2013
Datum/Projection: WGS 1984 Geographic
Map data source(s): Administrative boundaries, District Capitals: Population Census Organization (PCO) Flood Affected Data: NDMA Settlements: University of Georgia Inland Water: ESRI Terrain Model: SRTM.
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Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

The The floods, however, did not affect the 2014 main *Rabi* wheat crop, as harvest was concluded by mid-June. Final official estimates put the 2014 wheat production at a record level of 25.3 million tonnes, 4 percent above last year's flood-affected production. above last year's flood-affected production.

Pakistan

Cereal production

	2009-2013 average	2013	2014 forecast	change 2014/2013
	000 tonnes			percent
Wheat	24 048	24 211	25 286	4
Rice (paddy)	9 055	10 192	10 400	2
Maize	4 011	4 527	4 500	-1
Others	554	611	611	0
Total	37 669	39 541	40 797	3

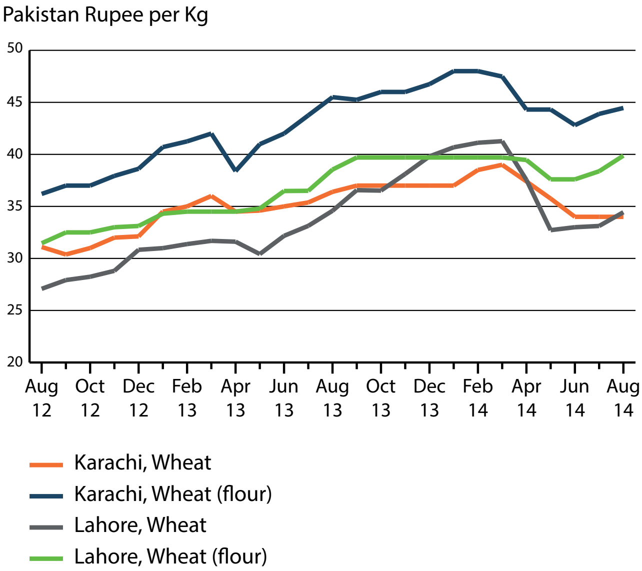
Note: percentage change calculated from unrounded data.
Source: FAO/GIEWS Country Cereal Balance Sheets

Wheat and wheat flour prices strengthening for the second consecutive month in August

PricesPrices of wheat flour the main staple in the country, strengthened in several markets for the second consecutive month in August, mainly supported by informal trade to neighbouring countries. Although prices were generally below their year-earlier levels, after the sharp declines of the previous months with the 2014 record harvest, the increasing prices are expected to hinder food access of flood-affected vulnerable populations.

Pakistan

Retail prices of wheat and wheat flour



Source: Pakistan Bureau of Statistics

Government assistance to affected population

The The Government of Pakistan, through NDMA and the Provincial Disaster Management Authorities (PDMAs), is assisting the flood-affected families with immediate needs, including food, drinking water, shelter, blankets and other urgent supplies. Many NGOs have expanded their activities to support the needy people, particularly with health services. However, relief efforts are still hampered by stagnant waters, fresh rains in some areas, and destroyed infrastructure, including roads and bridges. In the Sindh province, authorities have identified six districts most vulnerable to floods and preparedness actions have been undertaken, including the setting up of tent cities and prepositioning of food packs if needed.

FAO response

As part of its overall response, FAO is providing technical support to the Government in conducting a rapid assessment, Multi Cluster/Sector Initial Rapid Assessment (MIRA), to assess the crop damage in the most affected areas of Punjab, including Multan, Mandi Bahauddin, Hafizabad, Chiniot and Jhang districts. The report of the assessment is expected at the end of September and will be the basis for FAO's immediate agriculture rehabilitation assistance.

19 September 2014

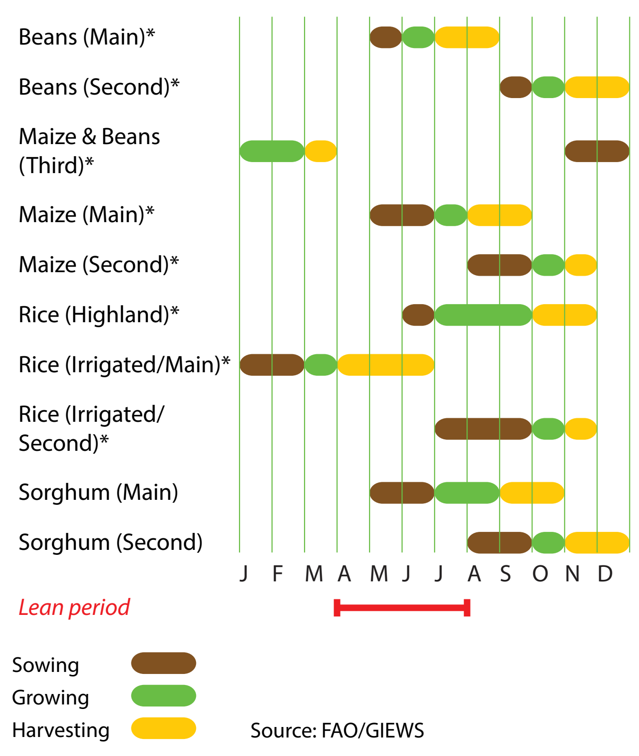
GIEWS Update

Central America Drought Update

Highlights:

- Crop losses of the 2014 main season higher than earlier anticipated.
- The 2014 maize production forecast sharply reduced in several countries.
- Imports of maize in the 2014/15 marketing year (July/June) to increase substantially in the subregion.
- Governments have distributed food and agriculture assistance to the affected populations.

Central America crop calendar
**major foodcrop*



"Dry Corridor"

The "Dry Corridor" (Corredor Seco) of Central America is a strip of land stretching from the low areas of the Pacific watershed through the foothills (0-800 metres) of Guatemala, El Salvador, Honduras, Nicaragua and parts of Costa Rica. It is a semi-arid region characterized by recurrent droughts, which covers nearly one-third of the Central American territory.

Harvesting of the 2014 main *de primera* basic grains season, accounting on average for some 60 percent of the subregion's annual maize crop, but also rice and beans, has concluded. Despite generally favourable rains at the beginning of the season, an unusually early and extended canicula, a recurrent dry period of about ten days that occurs around July/August, had a negative impact on crops in the final stages of development. Most distressed is the area known as the Dry Corridor, which covers most of El Salvador and parts of Costa Rica, Guatemala, Honduras and Nicaragua. Recent assessments, at country level, have confirmed that crop losses during the main season were more severe than earlier anticipated. As a result, sharply reduced 2014 maize, rice and bean crops are expected. A large number of subsistence farmers have suffered the partial or total loss of their crops and livestock and are in need of assistance. The governments of the subregion have started to distribute food to the affected populations and have also eliminated their common external tariff to facilitate imports of maize, rice and beans.

Central America - Maize production in drought-affected countries
(000 tonnes)

	2009-2013 average	2013 estimate	2014 forecast	Change: 2014/13 (%)
El Salvador	841	953	769	-19
Guatemala	1684	1735	1643	-5
Honduras	555	537	430	-20
Nicaragua	514	498	421	-15
Total		3723	3263	-12

Planting of the 2014 second crop season, which is the most important for beans, normally begins in the last dekad of August and concludes in the first dekad of September. In an attempt to increase the area planted and recover some of the crop losses sustained during the first season, the governments of the subregion have also distributed additional seeds and fertilizers in the impacted areas. Precipitation during the planting period has been generally average to above average and soil conditions have improved. However, the probability of the development of an El Niño event in the last quarter of this year, which is often associated with dry weather, gives cause for concern about the recovery in production.

Assuming normal weather during the remainder of the second *de postrera* season, the 2014 aggregate maize production of El Salvador, Guatemala, Honduras and Nicaragua is forecast by FAO close to 3.3 million tonnes, a decline of 12 percent (or 455 000 tonnes) from 2013. To compensate for the production shortfall and maintain consumption at normal levels, it is estimated that the subregion will need to increase its maize imports during the 2014/15 marketing year (July/June) by 22 percent (or 402 000 tonnes) from last year's actual imports.

El Salvador: Following a good start of the cropping season in most growing areas, widespread dry weather in July, with the lowest precipitation recorded in 44 years, negatively impacted the developing main season maize crop. All the surface of the country falls in the Dry Corridor and it is estimated that 65 percent of the agricultural area has been affected by the drought. The most severe agriculture damage is reported in the Eastern Region, including the departments of Usulután, Morazán, La Union and San Miguel, which together account for 30 percent of national maize production. In several locations of the Eastern Region, the dry weather lasted up to 35 days and crops have been completely lost. In addition, feed shortages are adversely affecting livestock conditions. At national level, latest official estimates indicate the loss of 184 000 tonnes of maize, higher than earlier anticipated. As a result, the 2014 aggregate maize production forecast has been further revised downward by FAO to 769 000 tonnes, 19 percent lower than the record harvest of 2013. By contrast, losses of beans during the *de primera* season, representing 10 to 15 percent of the annual production, have been reported to be much lower than expected. Preliminary official estimates point to a 16 percent reduction (or a little more than 2 000 tonnes) from last year's *de primera* season.

Central America - Maize imports, 2013/14 - 2014/15 (July/June)
(000 tonnes)

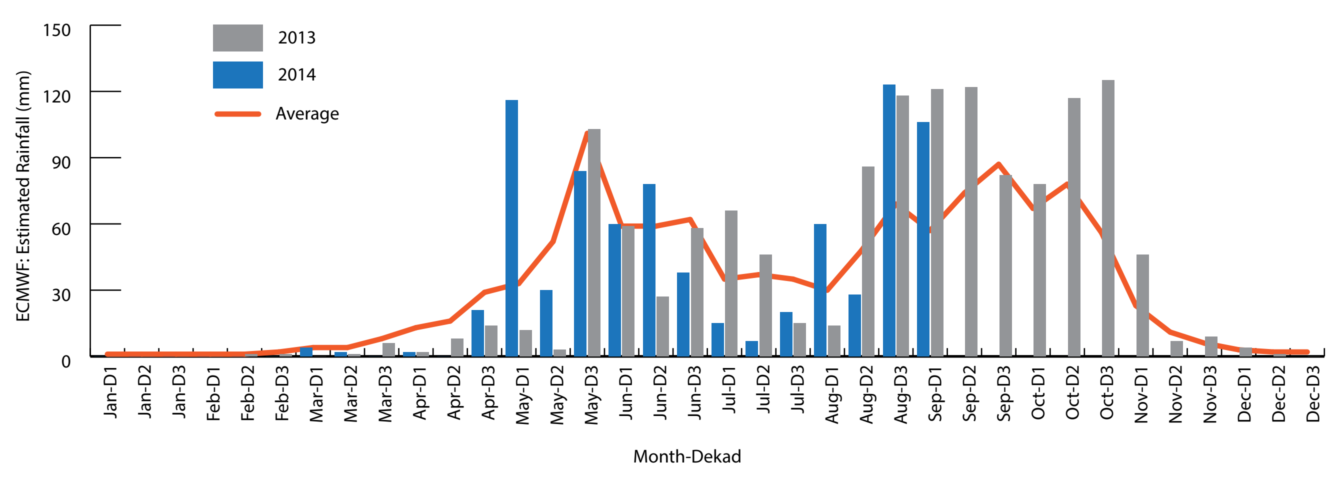
	Five-year average	2013/14 estimate	2014/15 forecast	Change 2014/15 2013/14 (%)
El Salvador	459	407	595	46
Guatemala	699	777	819	5
Honduras	417	475	590	24
Nicaragua	129	131	188	44
Total		1 790	2 192	22

To incentivize an increase in the area planted of the *de postrera* season, representing 85 percent of annual bean production, the Government distributed almost 74 000 technology packages, mostly composed of seeds and fertilizers. Rainfall during the planting period from the last dekad of August to the first dekad of September was generally above average in the distressed areas, but in Santa Ana department, that suffered severe crop losses, rainfall was below average in late August although precipitation recovered in September. Official estimates of the area planted are not yet available.

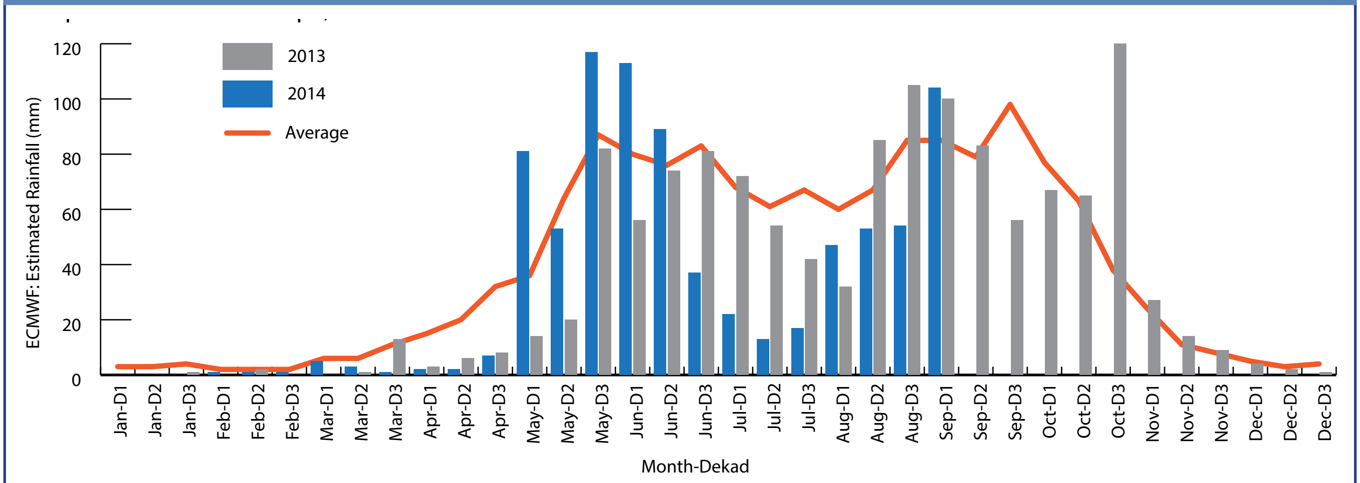
Guatemala: Continuous dry weather during July, particularly in the Eastern Region departments of El Progreso, Jalapa, Zacapa, Chiquimula, Jutiapa and Baja Verapaz damaged the developing maize and bean crops of the first cropping season. Latest official assessments indicate that 16 of the country's 22 departments have reported severe crop losses. However, as the areas in the Dry Corridor contribute to only about 20 percent of the national production, the impact of the drought at national level is relatively limited when compared with other countries of the subregion. Official estimates point to a loss in *de primera* maize production, accounting for 60 percent of the annual production, of 92 000 tonnes or 9 percent lower than the level of last year's same season.

The Government, through the Ministry of Agriculture, Livestock and Food (MAGA), has distributed food aid to the most impacted rural families, estimated at some 167 278, as well as beans and maize seeds for planting of the *de postrera* season. Early prospects for the season are uncertain. While precipitation at the beginning of the planting period was below average in all affected areas, rainfall levels recovered and were average for the first dekad of September. Following official assessments with crop losses higher than earlier estimated, FAO's forecast for the 2014 maize production has been lowered marginally to 1.6 million tonnes or 5 percent below last year's record level. Bean losses for the *de primera* season, which represent 40 percent of annual production, have been officially estimated at 30 400 tonnes.

El Salvador - Crop area rainfall in La Union department



Guatemala - Crop area rainfall in Jutiapa department

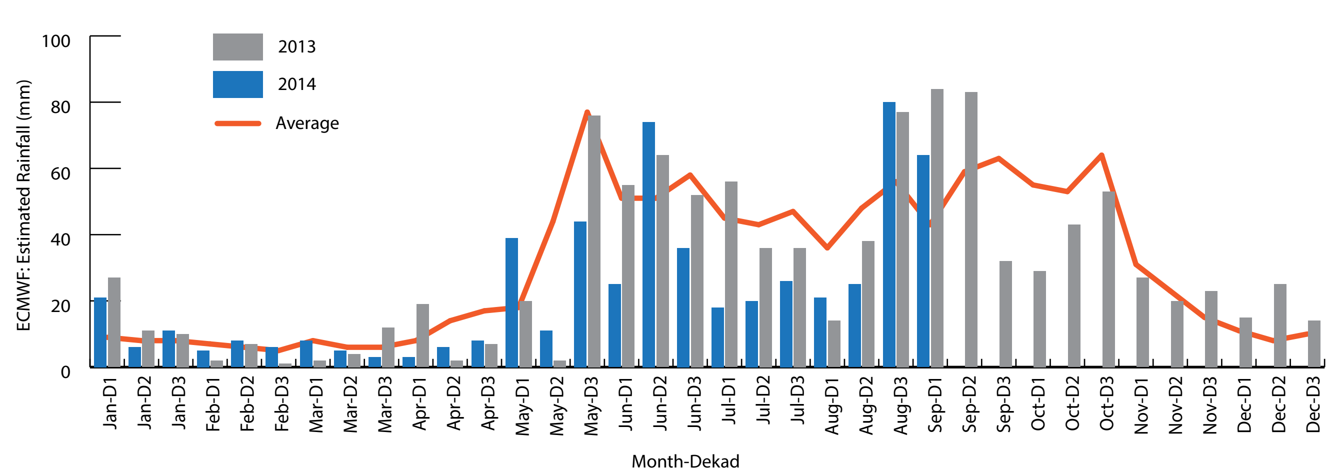


Honduras: The early start of the canicula, with dry weather from late June, resulted in losses of the 2014 main season crops, mainly maize. Most affected are the areas of the South, North East and Central West regions located in the Dry Corridor. The Government declared a State of Emergency in 66 municipalities of 10 departments (out of a total of 17), namely El Paraíso, Francisco Morazán, Comayagua, Choluteca, Valle, La Paz, Lempira, Intibucá, Copán and Ocotepeque. Recent estimates point to a loss of 107 000 tonnes of maize during the *de primera* season, a drop of 25 percent from last year's same season. This loss is higher than anticipated and FAO 's 2014 aggregate maize production forecast, which assumes normal weather during the *de postrera* season, has been revised downward to 430 000 tonnes which is 20 percent lower than last year's reduced level. Bean losses during the *de primera* season, which represent 30 percent of the annual production, have been preliminarily estimated at over 8 000 tonnes.

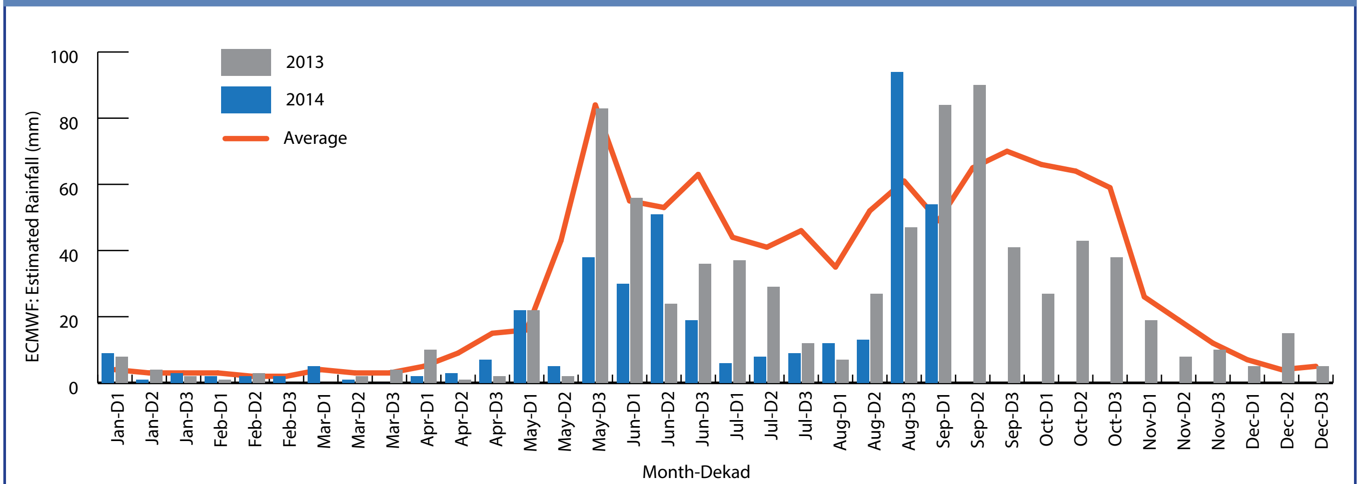
The affected population is estimated at 76 712 families of small farmers. The Government's Contingency Plan, amounting to USD 4.7 million, includes food assistance and distribution of seeds and fertilizers to increase plantings of the *de postrera* season which has just concluded. Precipitations in the last dekad of August and first dekad of September, which marks the planting period for the *de postrera* season, have been generally average or above average, including in the drought-stressed areas. The *de postrera* season accounts for 20 percent of the annual maize production and 70 percent of that of beans.

Nicaragua: Dry weather in July, in areas of the Dry Corridor, affected by below-average rains since planting time, adversely impacted the 2014 main season maize crop. The worst hit areas are the northern departments of Nueva Segovia, Madriz and Estelí, bordering Honduras. Severe localized losses of maize, beans and groundnuts

Honduras - Crop area rainfall in El Paraíso department



Nicaragua - Crop area rainfall in Estelí department



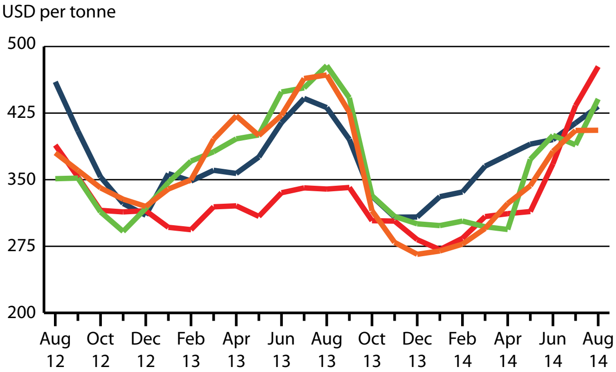
crops, as well as livestock are reported. However, the dry spell in July also reached parts of the major growing areas of Matagalpa and Jinotega. Overall, it is estimated that 112 municipalities, out of the country's 156, reported damages or losses of crops due to the drought conditions. Latest official assessments have revised upward these losses, estimated now at 77 000 tonnes of maize and 45 000 tonnes of rice. Early prospects for the second *de postrera* season, which accounts for 40 percent of maize production, are uncertain. The season began with either average or above-average rainfall in most of the distressed areas, but in the main growing areas of Jinotega and Matagalpa, precipitation was below average during the last dekad of August although recovered to good levels during the first dekad of September. An official estimate of the area planted is not yet available but the dry weather in late August may have resulted in reductions or delays in plantings. FAO's production forecast for the 2014 aggregate maize crop has been further revised downward to 421 000 tonnes, 15 percent lower than the previous year's level and below the five-year average. To avoid shortages of basic grains, the Government has authorized the tariff-free import of 72 000 tonnes of maize and 97 000 tonnes of rice and is distributing food assistance to 100 000 households that were most affected.

Costa Rica: Dry spells in June and July were registered in the Guanacaste department, which is the only area of the country in the Dry Corridor. Localized crop losses of the main rice crop and sugarcane are reported. Guanacaste is an important livestock rearing province and poor pasture conditions have adversely affected animal conditions. Close to average rainfall levels in the last dekad of August and first dekad of September may have improved the situation, including water availability. Preliminary assessments indicate total agricultural losses of USD 24 million.

Maize prices rose markedly in August and those of beans persisted at record or near-record levels

In most countries of the subregion, maize prices increased seasonally in August but at a higher pace than in previous years due to the drought-reduced 2014 main first season harvest, which has concluded in most of the region. However, increased imports in the past few months and distribution of governments' food reserves have kept prices below their levels of a year earlier, with the exception of **El Salvador**, where prices in August were more than 40 percent higher and the highest in the subregion. Prices were underpinned by lower imports in the immediate preceding three-month period from August. In **Guatemala**, despite the entry of the new crop into the markets, prices strengthened moderately in August and remained marginally lower than a year earlier (in local currency), partly reflecting the distribution of Government maize reserves to the drought-affected population. The Government is also planning to import maize to boost local supplies. In **Nicaragua**, maize prices increased sharply in August, but were still below their levels of a year earlier following significant tariff-free imports in July. Additional maize imports are planned to prevent further price increases. In **Honduras**, despite the poor *de primera* harvest, prices remained unchanged in August and below their levels from August 2013 as food distributions in the drought-stressed areas have helped to contain price increases.

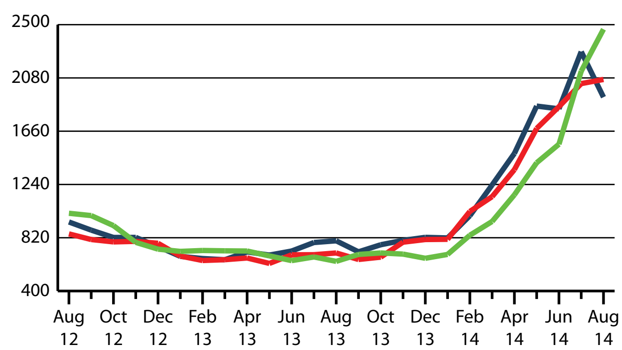
Wholesale prices of white maize in Central America



	Latest available price		Percent change: 1 mth	3 mths	yr
Guatemala, Guatemala City	Aug-14	432.52	+5	+11	0
El Salvador, San Salvador	Aug-14	477.40	+10	+52	+41
Nicaragua, Managua	Aug-14	440.88	+13	+18	-8
Honduras, Tegucigalpa	Aug-14	405.68	0	+18	-13

Source: Ministerio de Agricultura, Ganadería y Alimentación; Dirección General de Economía Agropecuaria, MAG; Ministerio Agropecuario y Forestal; SIMPAH

Wholesale prices of red beans in Central America



	Latest available price		Percent change: 1 mth	3 mths	yr
Honduras, Tegucigalpa	Aug-14	1 928.08	-16	+4	+142
Nicaragua, Managua	Aug-14	2 068.00	+2	+23	+196
El Salvador, San Salvador	Aug-14	2 464.00	+16	+75	+289

Source: SIMPAH; Ministerio Agropecuario y Forestal; Dirección General de Economía Agropecuaria, MAG

Prices of red beans persisted at record or near-record levels in August, despite significant imports from Ethiopia by most countries of the subregion. Low stock levels due to last year's reduced regional production, particularly in Nicaragua, the main producer and regional exporter, and an anticipated drought-reduced first season red bean crop underpinned prices. In **Honduras**, however, prices declined somewhat with recent imports and the new crop entering the markets, but they remained more than double their levels of August 2013. In **Nicaragua**, prices of red beans continued to increase although at a slower rate than in previous months and were still three times higher than their level a year earlier. The Government has authorized an additional 10 000 tonnes of beans at a zero import tariff to prevent further price increases. In **El Salvador**, prices continued to increase sharply in August and were almost four times higher than a year earlier. The country normally imports most of its consumption needs from Nicaragua. In **Guatemala**, where mostly black beans are produced and consumed, prices surged in August and were significantly higher than their values a year earlier due to the drought-reduced first season harvest.

12 November 2014

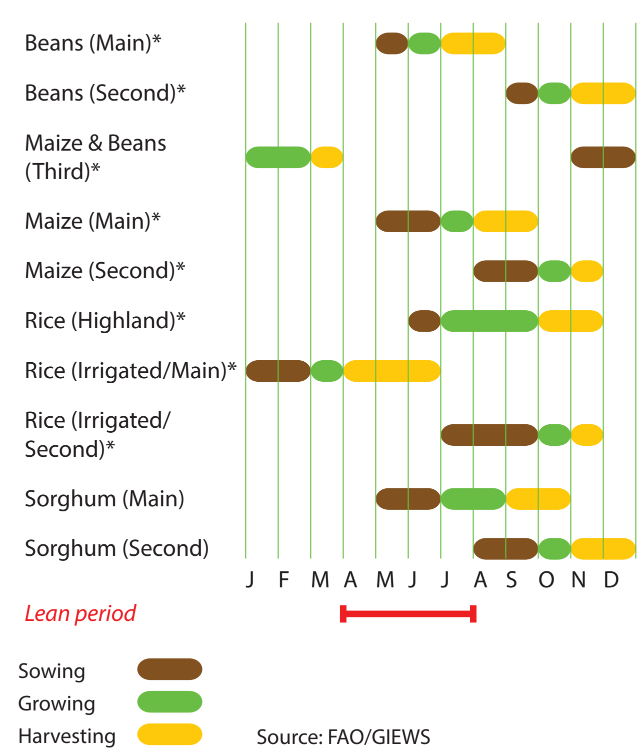
GIEWS Update

Central America: The 2014 maize production forecast severely reduced. Prospects for the 2014 bean crop uncertain due to excess precipitation in October

Highlights:

- The 2014 aggregate maize production anticipated to be sharply reduced in several countries of the subregion.
- Imports of maize to increase substantially in the 2014/15 marketing year (July/June).
- The outlook for the 2014 main beans *de postrera* season deteriorated with excessive precipitation that has saturated soils.
- Maize prices continued to decline seasonally in October but well above their year-earlier levels; those of beans reached new record highs.

Central America crop calendar
**major foodcrop*



Source: FAO/GIEWS

"Dry Corridor"

The "Dry Corridor" (Corredor Seco) of Central America is a strip of land stretching from the low areas of the Pacific watershed through the foothills (0-800 metres) of Guatemala, El Salvador, Honduras, Nicaragua and parts of Costa Rica. It is a semi-arid region characterized by recurrent droughts, which covers nearly one-third of the Central American territory.

Harvesting of the 2014 *de postrera* season, accounting for more than half of the annual red bean production and more than one-third of maize production in the subregion, will start from mid-November. Rainfall levels from the second dekad of September up to the third dekad of October were average to well above-average in all countries, including in the area known as the "Dry Corridor", which was previously affected by drought. The recent abundant precipitation benefitted maize development but may have negatively affected the red bean crops, which is sensitive to excess humidity. No official estimates of potential damage to the red bean crops is yet available but there is concern of a reduction in production and quality of the crop.

Central America - Maize production in drought-affected countries *(000 tonnes)*	2009-2013 average	2013 estimate	2014 forecast	Change: 2014/13 (%)
El Salvador	828.4	877.0	766.0	-13
Guatemala	1 715.4	1 821.0	1 873.0	+3
Honduras	574.0	604.0	400.0	-34
Nicaragua	514.6	498.0	421.0	-15
Total		3 800.0	3 460.0	-9

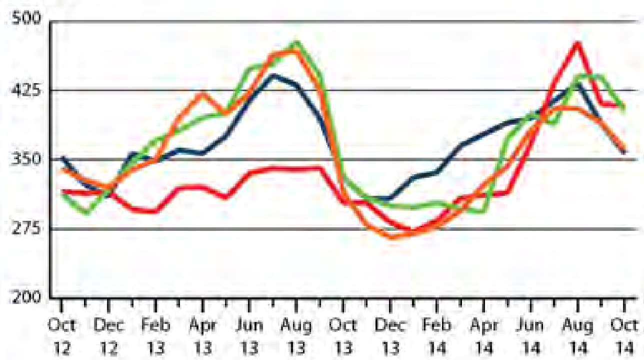
Central America - Maize imports, 2013/14 - 2014/15 (July/June) *(000 tonnes)*	Five-year average	2013/14 estimate	2014/15 forecast	Change 2014/15 2013/14 (%)
El Salvador	458.8	407.0	595.0	46
Guatemala	689.4	740.0	750.0	1
Honduras	412.6	450.0	585.0	30
Nicaragua	143.2	176.0	188.0	7
Total		1 773.0	2 118.0	19

Harvest of the 2014 white main *de primera* maize season, which accounts on average for 60 percent of the subregion's annual production, concluded in early October. White maize losses due to dry weather have been revised downward reflecting updated official figures. The aggregate maize output of El Salvador, Guatemala, Honduras and Nicaragua is estimated by FAO at almost 3.5 million tonnes, 9 percent or 340 000 tonnes, lower than in 2013. Crop losses were most severe in Honduras, where production is estimated over one-third below the last year's level. However, the highest number of families affected, by partial or total crop losses, are recorded in Guatemala. In the affected areas of the "Dry Corridor" beans is the crop mostly sown during the *de postrera* season. So the large numbers of subsistence farmers affected by the drought conditions during the first season in the "Dry Corridor" of Guatemala, Honduras and Nicaragua, are not expected to compensate for white maize losses during the this season. However, in El Salvador some of the maize losses are expected to be recovered during the *de postrera* season. The governments of the subregion continue to distribute food to the affected populations to mitigate any food deficits. To compensate for the production shortfall and maintain consumption at normal levels, it is estimated that the subregion will need to increase maize imports during the 2014/15 marketing year (July/June) by 19 percent from last year's actual imports, or 345 000 tonnes.

Reflecting the current limited supplies following the reduced output of the main *de primera* season, prices of white maize in October remained considerably higher than at the same time last year, despite seasonal declines. The increase of white maize prices is likely to be mitigated by additional imports of white maize from Mexico and the United States of America, where prices are at record lows and stocks are abundant due to record harvests. Price of red beans continued to surge in October, despite higher levels of imports in previous months. Red bean prices reached new record highs, both in nominal and real terms, in Nicaragua and El Salvador and near record levels in Honduras where the highest increase in prices was recorded. Prices are being supported by the supply shortage caused by the sharp

Wholesale prices of white maize in Central America

USD per tonne

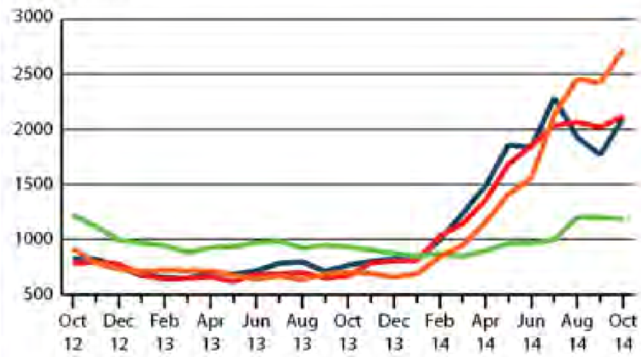


	Latest available price		Percent change: 1 mth	3 mths	yr
Guatemala, Guatemala City	Oct-14	357.28	-8	-14	+8
El Salvador, San Salvador	Oct-14	408.76	0	-6	+35
Nicaragua, Managua	Oct-14	402.82	-8	+4	+21
Honduras, Tegucigalpa	Oct-14	360.80	-7	-11	+15

Source: Ministerio de Agricultura, Ganadería y Alimentación; Dirección General de Economía Agropecuaria, MAG; Ministerio Agropecuario y Forestal; SIMPAH

Wholesale prices of beans in Central America

USD per tonne



	Latest available price		Percent change: 1 mth	3 mths	yr
Honduras, Tegucigalpa, Beans (red)	Oct-14	2 094.84	+18	-8	+174
Nicaragua, Managua, Beans (red)	Oct-14	2 118.38	+5	+4	+218
Guatemala, Guatemala City, Beans (black)	Oct-14	1 189.10	-1	+20	+27
El Salvador, San Salvador, Beans (red)	Oct-14	2 722.72	+12	+28	+289

Source: SIMPAH; Ministerio Agropecuario y Forestal; Ministerio de Agricultura, Ganadería y Alimentación; Dirección General de Economía Agropecuaria, MAG decline of the 2013 output in main producer and exporter, Nicaragua, due to a significant shift in area planted to black beans and uncertain prospects for the 2014 main *de postrera* crop because of excessive rains in the past month. Prices of red beans are expected to begin decreasing by the end of November as the new harvest will start to enter the market. To mitigate the increase in prices, the governments of the subregion continue to allow the imports of maize, rice and beans without import tariffs.

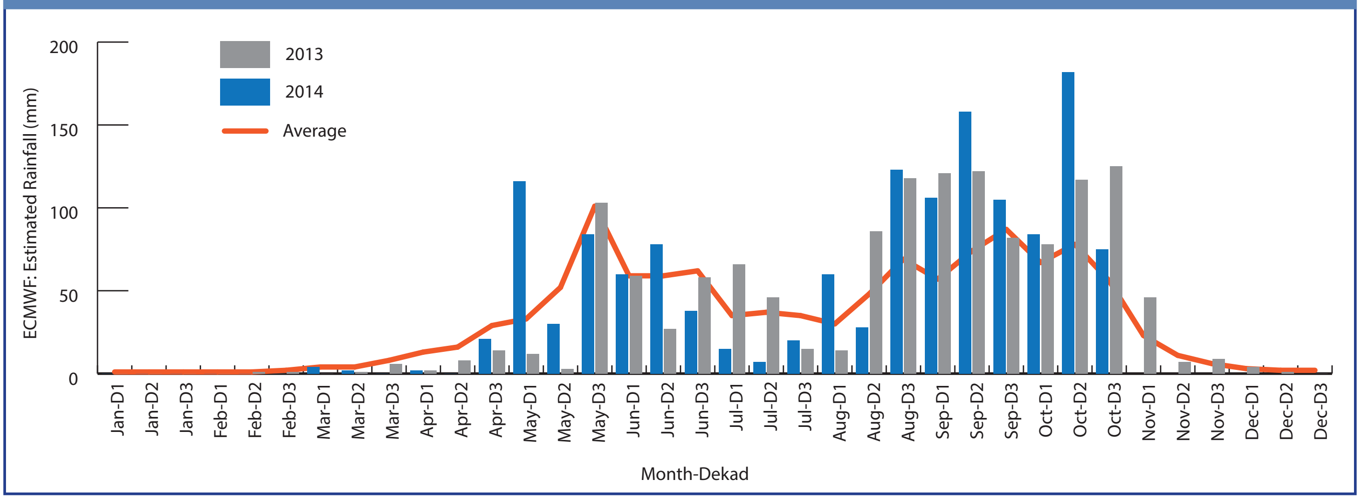
The probability of an El Niño event developing between November and January continues to remain high, at 65 percent, but the consensus forecast is for this event to be mild. Dry weather usually associated with an El Niño event in the subregion would only affect the minor third *de apante* season which is planted from November and thus the impact on the 2014 aggregate production would be limited at the national level.

El Salvador: Harvesting of the *de postrera* season, consisting of mostly red beans, is set to begin at the end of November. To encourage an increase in sowings at the start of the *de postrera* season, the Government distributed almost 74 000 technology packages, mostly composed of seeds and fertilizers, to 104 000 of the most affected farmers by the drought in the *de primera* season. Above-average rainfall were recorded in the last two dekads of October in main producing departments of Usulután, Morazán, La Union and San Miguel, which together account for 30 percent of the national maize production. These departments were the most affected by the drought conditions during the *de primera* season. However, the main maize season for these departments usually takes place during the *de postrera* season, unlike the rest of the country, and given the abundant rains early and preliminary expectations are for a good maize harvest. At national level, latest official estimates indicate the loss of 111 000 tonnes of maize or 13 percent below last year's record level, a downward revision of losses from previous estimates. The aggregate 2014 maize crop is anticipated to reach 766 000 tonnes. To maintain national consumption at normal levels, FAO estimates that maize imports during the 2014/15 marketing year (July/June) will increase by 46 percent from the previous year.

By contrast red bean production losses for the *de primera* season which accounts for about 15 percent of annual production, have been officially estimated at just 2 600 tonnes. Prospects for the bean crop, which during the *de postrera* season is concentrated in the western departments of the country, are mixed due to the excessive rains during the last two dekads of October, which can reduce output and quality. However, if these damages are not confirmed, early and preliminary official estimates point to a 2014 production of 124 000 tonnes, or 4 percent above last year's level, and well above the five-year average of 90 000 tonnes. The high production forecast mainly reflects an increase in sowings in response to record high prices.

Guatemala: Early prospects for the *de postrera* cereal crop harvest, to begin from mid-November, remain favourable. Average and above-average precipitation during the last two dekads of October in most of the country and in particular in Peten department, the main cereal producer, benefitted maize and bean crops. The most affected departments during the extended drought period in August and July (El Progreso, Jalapa, Zacapa, Chiquimula, Jutiapa and Baja Verapaz) also benefitted from good weather, however, a recovery of the earlier maize harvests losses is not expected as most of the area sown during the *de postrera* season was dedicated to beans. Preliminary official estimates point to a normal *de postrera* season harvest. FAO forecasts the 2014 aggregate maize production at almost 1.9 million

El Salvador - Crop area rainfall in La Union department

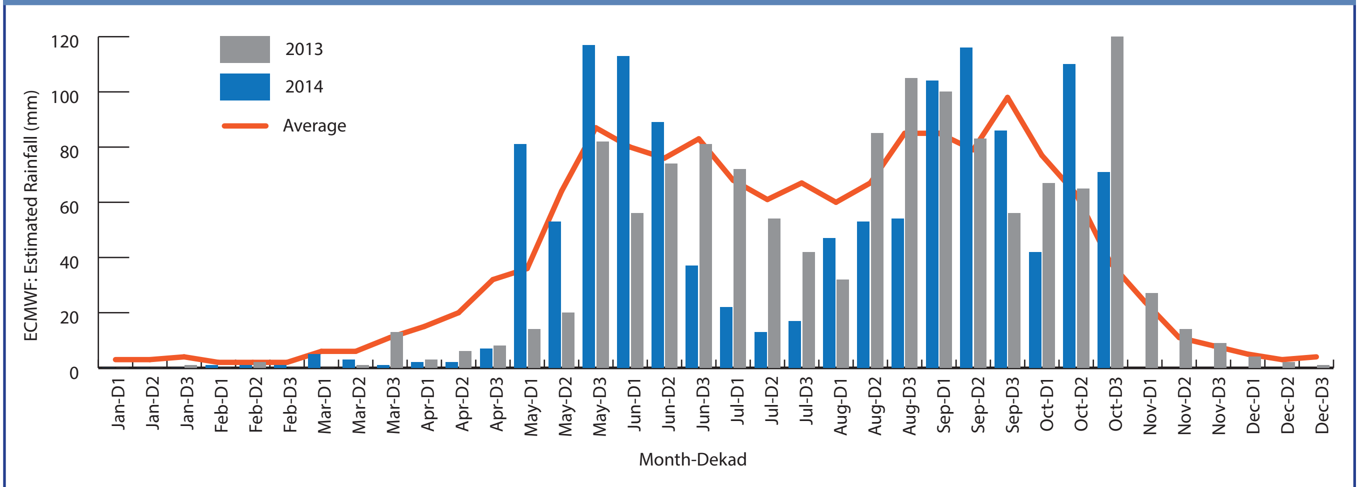


tonnes or 3 percent above last year's record production and the country's average. At this level of production, maize imports during the 2014/15 marketing year (July/June) are preliminarily forecast to remain close to last year's level but well above the country's average, reflecting the growing demand, particularly from the feed sector. Production of 2014 black beans, the preferred variety for consumption in Guatemala, is forecast at 238 300 tonnes, or 3 percent above last year's record level and well above the average. This figure is subject to revision as yields might be affected due to the excessive levels of precipitation during October.

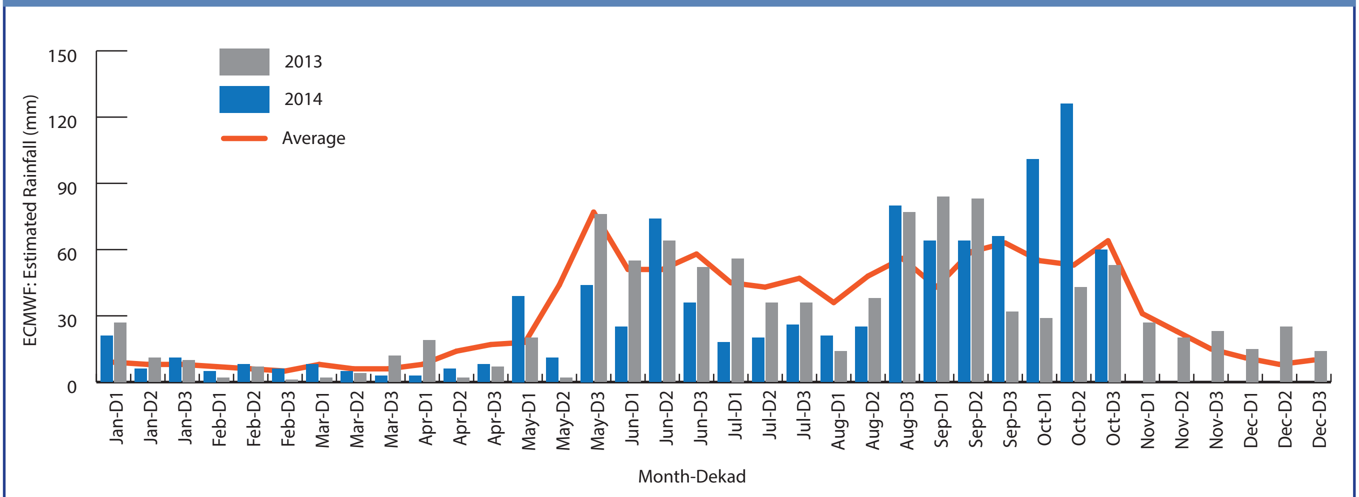
Final estimates of the population affected by the extended drought period during the *de primera* season stand at 268 000 families. Crop losses among the affected population were officially estimated to have reached 86 000 tonnes for maize and 30 000 tonnes for beans. The Government has extended the state of calamity in the 16 of the country's 22 departments until the end of the year. This allows the authorities to import maize and beans at a zero tariff rate and simplified procurement procedures. Food distributions to the affected populations are still ongoing.

Honduras: Despite a late start of planting activities for the *de postrera* season, due to below-average rainfall during the first dekad of September, sowings are reported to have been significant particularly for red beans. However, prospects for the maize and bean harvest are mixed due to above-average rainfall in most of the country, which might have caused losses particularly for the latter crop. The *de postrera* maize harvest represents only 20 percent of the annual maize production, therefore crop losses sustained during the main *de primera* season are not expected to be recovered. Official estimates point to a loss of 204 000 tonnes of white maize, the highest crop loss of the countries in the "Dry Corridor". The 2014 maize crop, mostly composed of white maize, is estimated 34 percent below last year's

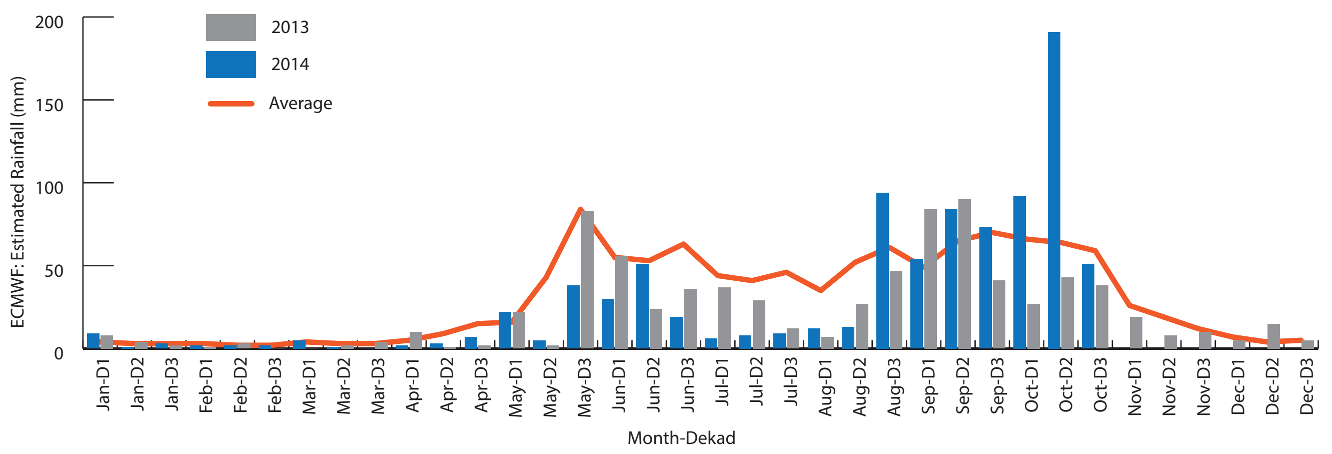
Guatemala - Crop area rainfall in Jutiapa department



Honduras - Crop area rainfall in El Paraíso department



Nicaragua - Crop area rainfall in Estelí department



harvest and well below the five-year average. Maize imports are forecast to reach a record level of 585 000 tonnes during the 2014/15 marketing year (July/June) . Bean losses during the *de primera* season, which represents 30 percent of the annual production, have been preliminarily estimated at over 8 000 tonnes. If damages from the excessive precipitations which continued into the first week of November are not significant, the *de postrera* bean crop is expected to recover earlier crop losses and reach at least 92 000 tonnes for 2014. The increase in production reflects earlier Government distribution of seeds and fertilizers to increase plantings as well as higher sowings motivated by current record prices.

Official estimates point to a total of 186 000 families affected by drought conditions during the *de primera* season. However, assistance from the Government in the form of food distributions, is only targeting 76 712 families of small farmers who were the most affected. Under the contingency plan a total of USD 4.7 million is being used for food assistance and earlier seeds and fertilizers distributions. The Government of Japan has donated an additional USD 500 000 to WFP to assist 3 600 families under work-for-food programs in the departments of Choluteca and El Paraíso, where damages from the drought were severe.

Nicaragua: While sowings for the *de postrera* season were delayed by an extended dry period, prospects for the harvest, starting in late November, are favourable. Rains in late September and most of October in the main producing regions of the country and in the departments of the "Dry Corridor" (Chinandega, Estelí, Leon, Madriz, Matagalpa and Nueva Segovia) were average to above average. Earlier losses in the *de primera* season of maize production are not expected to be recovered fully, however, since most of the area sown is dedicated to red beans. FAO's earlier production forecast for the 2014 aggregate maize crop is maintained at 421 000 tonnes, or 15 percent below last year's level and below the country's average. This forecast is likely to be revised upward due to the good precipitation levels that have benefited the *de postrera* maize crop which represents some 40 percent of annual production. The *de postrera* red bean harvest is anticipated to be good, reflecting higher sowings in response to high prices and Government distributions of seeds and fertilizers. Food assistance continues to be distributed by WFP to 100 000 families that were most affected by the drought. In addition the Republic of Taiwan donated USD 800 000 to benefit 1 725 people under the Government's zero hunger initiative.

This report is prepared by the **Global Information and Early Warning System (GIEWS)** of the Trade and Markets Division of FAO. The updates focus on developing anomalous conditions aimed at providing early warnings, as well as latest and more elaborate information than other GIEWS regular reports on the food security situation of countries, at both national and sub-national levels. None of the information in this report should be regarded as statements of governmental views.

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