Delayed onset of seasonal rains in parts of Southern Africa raises serious concern for crop and livestock production in 2016

**Highlights**

- El Niño-related dry conditions at the start of the 2015/16 cropping season adversely affect cropping activities and impede early crop development in Southern Africa
- Climate forecasts point to a very likely continuation of drier-than-normal conditions in early 2016 increasing the likelihood of serious impacts on production across many areas of the subregion
- A second consecutive reduced cereal harvest may exacerbate the current situation resulting from the reduced 2015 harvests, whereby prices of maize are well above their year-earlier levels and food security conditions are generally stressed across the subregion

A strong El Niño episode, declared in March 2015, is predicted to continue in early 2016 with potential impacts persisting well into next year. The weather phenomenon is historically associated with suppressed rains and higher temperatures in large portions of Southern Africa during the main cropping season (October-July), which can adversely affect agriculture, water resources and food security. El Niño-associated dry weather in Central America, and in parts of Asia and East Africa has already adversely affected crop and livestock production, implying that similar impacts could transpire in Southern Hemisphere countries where the crops are just starting to develop.

FAO’s Global Information and Early Warning System (GIEWS) has been closely monitoring weather anomalies, and analysed past episodes, to assess possible effects that the current El Niño may have on crop and livestock production, and the food supply situation. Such information enables FAO’s Early Warning – Early Action initiative to plan for and facilitate the implementation of key interventions aimed at reducing possible adverse effects.
Dry conditions in Southern Africa adversely impact the start of the 2015/16 cropping season

The rainy season typically lasts from October to April and reaches maximum intensity between November and March, with most locations receiving more than 75 percent of their annual precipitation during this five-month period. This year, however, there has been an overall delayed start to the 2015/16 rainy season. Where rains have been received, they have been poorly-distributed and below-average since October. This has resulted in developing dryness across large portions of the subregion, delaying planting activities and negatively affecting the establishment of the early-planted 2016 crops. As seen in Figure 1, in early December 2015, large areas of Southern Africa exhibited below normal vegetation conditions in cropped areas, indicating low soil moisture and retarded development of the early planted crops. Already, five provinces in South Africa, which constitute the country’s main cereal producing regions, have been declared disaster drought areas. In addition, Lesotho has issued a drought mitigation plan to guide interventions by national and international institutions, while in Swaziland, water restrictions have been put in place, reflecting lower-than-normal rainfall and reservoir levels.

Unfavourable weather conditions expected to persist into 2016

Weather forecasts indicate a higher probability of a continuation of below-normal rains between December and March across most countries, corresponding to the key development periods of cereal crops. The unfavourable rainfall forecast is further compounded by increased expectations of above-average temperatures, which could further retard crop development, particularly during the emergence phase (in the next weeks), adversely affecting yields and harvests.

Figure 1: Agricultural Stress Index December 2015 (1st dekad 2015)

Agricultural Stress Index (ASI)
% of cropland area affected by drought per GAUL 2 region
from: start of SEASON 1
to: dekad 1 December 2015
METOD-AVHRR
WGS84, Geographic Lat/Lon

Note: The Agricultural Stress Index (ASI) refers to the percentage of cropped areas suffering from water stress, by administrative region.

Source: FAO/GIEWS
Plantings delayed and area sown expected to fall in South Africa

Planting estimates are not yet available, with most government-led surveys conducted in December/January. In South Africa, preliminary planting intentions for the 2016 maize crop indicate a 4 percent year-on-year decrease. This decline is mostly attributed to prevailing dry conditions, despite the current high maize prices that tend to positively influence the planted area. Elsewhere, the delayed and below-average rains are likely to negatively impact on the planted areas and could also result in a shorter growing period affecting yield potential. Moreover, crop losses last year also incurred additional costs for farmers, constraining their purchasing power, which could negatively weigh on farmers’ ability to access adequate input supplies this year. Governments’ input support programmes are continuing in 2015/16 to ameliorate input access for farmers, with large-scale programmes in Malawi and Zambia targeting 1.5 million and 1 million farmers, respectively. Reduced plantings will put more emphasis on weather conditions this season.

The current dry conditions and the expected continuation of unfavourable weather have dampened the overall 2016 production outlook, increasing the possibility of a second consecutive reduced cereal output.

Previous El Niño episodes linked to reductions in cereal production

Previous El Niño episodes in Southern Africa have been linked with an overall negative impact on production\(^1\). This is largely due to the fact that small-scale farming is almost entirely rain-dependent, rendering production highly susceptible to precipitation variations. Although previous episodes are correlated with reduced maize outputs; the magnitude of the decrease is not homogeneous among countries or events\(^2\). At the subregional level, “Very Strong” episodes, correspond to the steepest production declines, while reductions are about half of that during “Weak” and “Moderate” episodes, with minimal variation between these two categories. Regarding the frequency of negative shocks on production due to El Niño events, South Africa, Swaziland and Zimbabwe registered the most frequent production falls during El Niño years, while reduced outputs were less recurrent in Angola, Madagascar, Malawi and Namibia.

South Africa registers the biggest absolute production decline, and given the country’s position as a main source of maize exports, production shocks could have additional impacts on importing countries. Zimbabwe’s production decreases have also been significant, when compared to its trend. These relative changes in production largely correspond with El Niño-induced rainfall patterns, with southern parts of the subregion

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\(^1\) Based on national and subregional maize production trends since 1982.

\(^2\) El Niño events are classified into four categories to define their intensity: Weak, Moderate, Strong and Very Strong. However, there is not a deterministic trend between the intensity and the impact on agricultural production.
frequently affected by below-average rains. In northern countries of the subregion, precipitation patterns have been less affected and therefore production shocks are fewer.

**Tighter cereal supply situation already exists in the 2015/16 marketing year**

In 2015, maize production, accounting for nearly 80 percent of the total cereal output, declined by 27 percent on account of adverse weather. The steep contraction has resulted in a tight supply situation in the 2015/16 marketing year (generally May/April) and raised import requirements for most countries. As shown in Figure 2, subregional maize production dipped below the aggregate consumption for the first time in seven years. Larger carryover stocks from 2014’s bumper harvest contributed to partly stabilizing supplies, though stocks are expected to fall at the close of the current marketing year as they are drawn down to compensate for the reduced 2015 output.

Between April and November, maize exports from South Africa and Zambia are estimated at 429,000 tonnes and 525,000 tonnes, respectively, already satisfying over 50 percent of countries’ domestic import requirements. This has helped to stabilize national supplies, partly limiting the pressure of reduced domestic harvests.

**Maize prices at high levels in late 2015**

Maize prices in October and November were well above their year-earlier levels, mostly driven by the tight supply situation, while an uncertain production outlook for the 2016 cereal crop and weaker currencies in some countries, also contributed to the firming up of prices. In South Africa, the reduced 2015 output is the main driver behind the substantially higher year-on-year price levels. While early seasonal rainfall deficits and the depreciation of the national currency exacerbated the rising trend, with prices exceeding import parity levels in early December. In Zambia, prices rose more rapidly in recent months reflecting the tightening supplies due to the reduced 2015 harvest and stronger export demand. In Malawi and Mozambique, prices continued to increase seasonally, and were well above year earlier levels. In import-dependent Lesotho and Swaziland, while maize meal prices were stable in recent months they remained up on the levels of the previous year reflecting higher South African prices and lower domestic outputs.

### Wholesale prices of maize in Randfontein, South Africa

<table>
<thead>
<tr>
<th></th>
<th>Latest Price (Nov-15)</th>
<th>Percent Change 1M</th>
<th>Percent Change 3M</th>
<th>Percent Change 1Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize (white)</td>
<td>3226.52</td>
<td>2.8</td>
<td>5.8</td>
<td>63.5</td>
</tr>
<tr>
<td>Maize (yellow)</td>
<td>3123.67</td>
<td>8.7</td>
<td>15.7</td>
<td>55.5</td>
</tr>
</tbody>
</table>

Source(s): SAFEX Agricultural Products Division

### Retail prices of maize in Zambia

<table>
<thead>
<tr>
<th></th>
<th>Latest Price (Nov-15)</th>
<th>Percent Change 1M</th>
<th>Percent Change 3M</th>
<th>Percent Change 1Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Average, Maize (white)</td>
<td>2.06</td>
<td>13.2</td>
<td>29.1</td>
<td>32.1</td>
</tr>
<tr>
<td>National Average, Breakfast maize meal</td>
<td>3.19</td>
<td>10.7</td>
<td>15.6</td>
<td>13.5</td>
</tr>
<tr>
<td>National Average, White roller maize meal</td>
<td>2.52</td>
<td>11.7</td>
<td>19.2</td>
<td>27.6</td>
</tr>
</tbody>
</table>

Source(s): Central Statistical Office
Stressed food security conditions in 2015

Food security conditions are already stressed across the subregion, driven mostly by the reduced 2015 cereal output. According to the results from the national Vulnerability Assessment Committees’ (VAC) 2015 evaluations, the number of vulnerable people was estimated at about 6.3 million, compared to 3.2 million in 2014. All countries of the subregion, except Mozambique and Swaziland, registered an increase in the number of persons requiring assistance. Under the context of the already strained conditions and rural households’ limited resilience and high exposure to natural hazards, the presence of a strong El Niño episode in 2015/16 raises serious concerns regarding the impact on food insecurity. A second consecutive reduced cereal harvest could acutely impact on the food security situation in 2016.

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1 This figure excludes Angola, Madagascar and South Africa.
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