



# El Niño in Ethiopia

## Analyzing the summer *kiremt* rains in 2015

### Introduction

In September 2015 an AKLDP Technical Brief *El Niño in Ethiopia, Uncertainties, impacts and decision-making* explained why the failure of the spring *belg* rains was a major problem in some areas of Ethiopia, as reported by the National Meteorological Agency (NMA) in June 2015. The Brief also reported a deepening El Niño episode, causing delays in the onset of the main summer *kiremt* rains which normally fall from June to September, leading to the main *meher* harvest from October to January. Despite the uncertainties of weather forecasts, the brief assessed the risks of delayed planning and response to rain failures on Ethiopia's rural population.

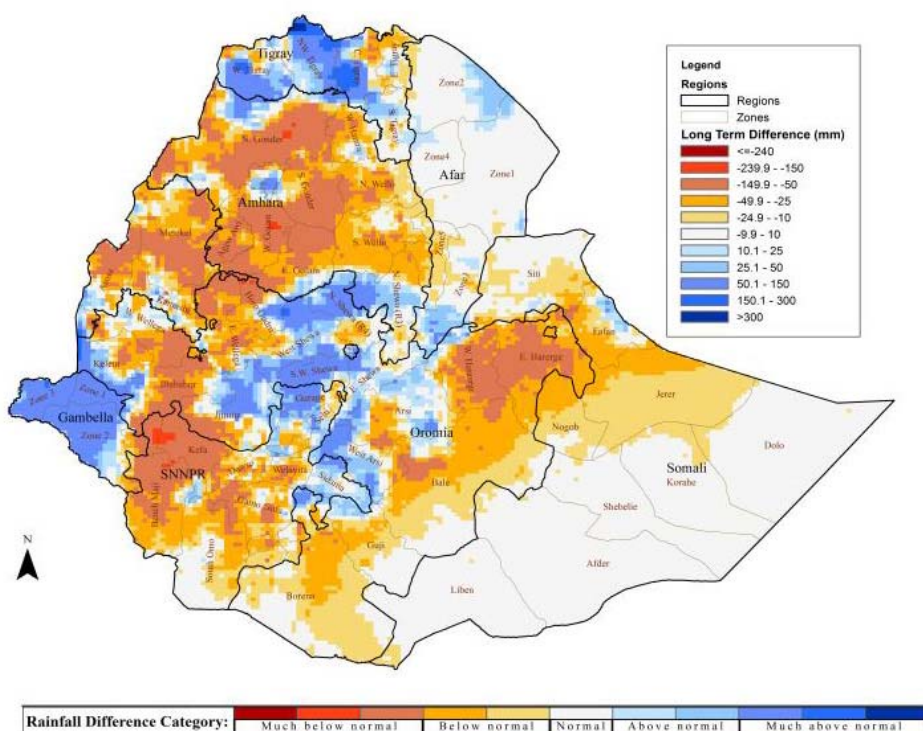
This Technical Brief contains more detailed information on the summer *kiremt* rains in 2015, using a series of monthly rainfall maps. These maps show rainfall spatially across Ethiopia from June to September 2015 as a deviation against the 30-year average rainfall. The maps are generated and disseminated by FAO in Ethiopia as part of its support to the Disaster Risk Management - Agriculture Task Force. An analysis of rainfall deviation through the summer *kiremt* rains offers a useful guide to the impact of the rains on Ethiopia's main *meher* cropping season, which provides up to 85 per cent of Ethiopia's total annual food production.

### Rainfall and impacts in May/June 2015

Following the failure of the spring *belg* rains<sup>i</sup>, the rain in May was above normal across much of the Ethiopian highlands with the exception of isolated pockets in southern Tigray, eastern Amhara, central Oromia and parts of Southern Nations Nationalities and People's (SNNP) regions. Therefore, at this time a full recovery seemed possible - many smallholders in the summer *meher* production areas cultivated, and in some cases, started to plant their land.

The rainfall map below confirms that normal to slightly above-normal rains fell in June in central Ethiopia, and central and western Tigray, with rainfall of between 10mm and 50 mm above the long-term mean (the blue shaded areas). In contrast the June rains were more erratic and generally poor across Amhara, eastern Oromia<sup>ii</sup> and north-western SNNP regions, with reductions of between 50mm and 149mm (the brown and dark brown shaded areas).

Rainfall in Ethiopia, June 2015 - compared to 30-year long-term



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Field reports from AKLDP staff<sup>iii</sup> confirm that smallholder farmers planted their fields in May and June, including those who dry-planted in areas receiving poor rains in anticipation that the July rains would be normal. However, in areas where the May and June rains were far below normal, smallholders decided to wait for better rains before planting. Field visits reported that some farmers who chose not to plant in June failed to plant their fields during the entire cropping season, as the rains were simply too sparse and they were unwilling to risk their seed.

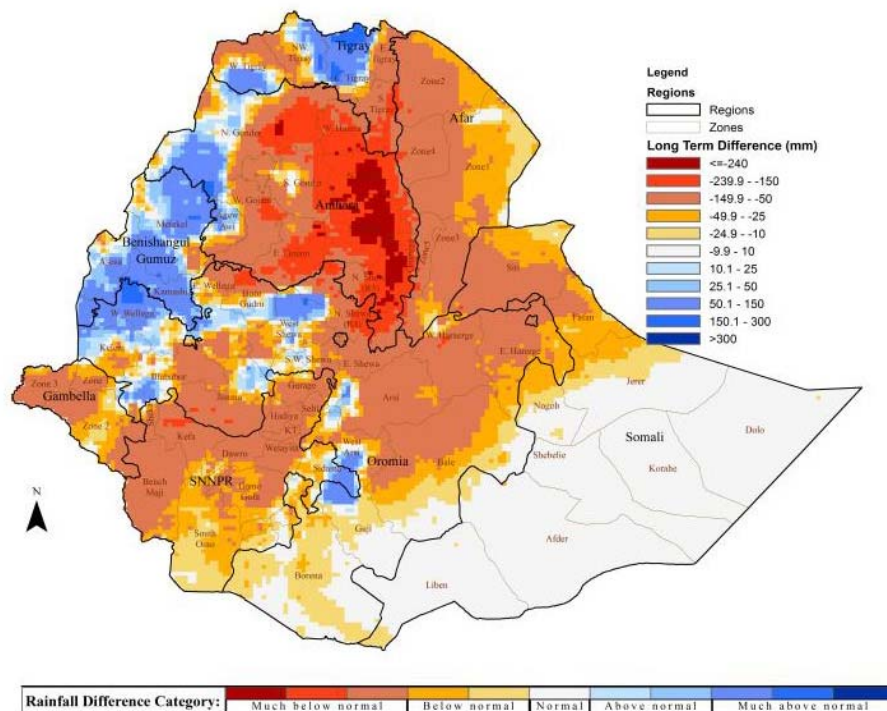
In pastoralist areas the spring *sugum/diraac* rains in the north-eastern rangelands of Afar and northern Somali regions also failed. As in the highlands however, the May rains were above normal. Typically, June is characterized by little or no rain, and indeed, little or no rain fell that month. The lack of rain (the white shaded areas across north-eastern rangelands) equates with near normal (i.e. no rainfall) for the month.

### Rainfall and impacts in July 2015

Rainfall in July showed marked spatial variations relative to long-term averages, as illustrated in the map below. For example, in central and western Tigray, western Amhara and Oromia, Gambella and Benishangul Gumuz regions the July rains were normal to 50 mm above normal (the blue shaded areas). In contrast, the greater part of central and eastern Amhara, eastern Oromia and all of SNNP regions experienced poor rains with reductions of between 50 and 239 mm (the brown and red shaded areas). In eastern Amhara region however, rainfall fell by more than 240mm below the long-term average (the dark red shaded area).

In pastoralist areas, the north-eastern rangelands of Afar and northern Somali Regions were similarly affected by below average rain with reductions against the long-term mean of between 25 and 149 mm.

Rainfall in Ethiopia, July 2015 - compared to 30-year long-term averages



Farmers and pastoralists report that July was a challenging month as crops wilted then failed and livestock body condition deteriorated and mortality rates increased. In areas that received rain later in the month, some farmers re-planted their fields with early-maturing crops including teff and pulses as they had exhausted their seed stock, could not afford replacement seed or had started to draw parallels between the erratic 2015 summer *kiremt* rains and previous El Niño years, including 1997-98 and 2002-03. Some smallholders however replanted two and three times during the season.

Field visits also confirmed that the availability of milk and milk products declined sharply through the months of May to July compared to the previous year, in both smallholder farming and pastoral areas. In pastoral areas however the decline in milk and milk products was more marked, as livestock had limited or no access to wilted crop residues.

During July in a normal year, food stocks from the previous harvest typically start to run out for many smallholders and they start to sell livestock in order to purchase grain. This pattern of stress sales was evident in July.

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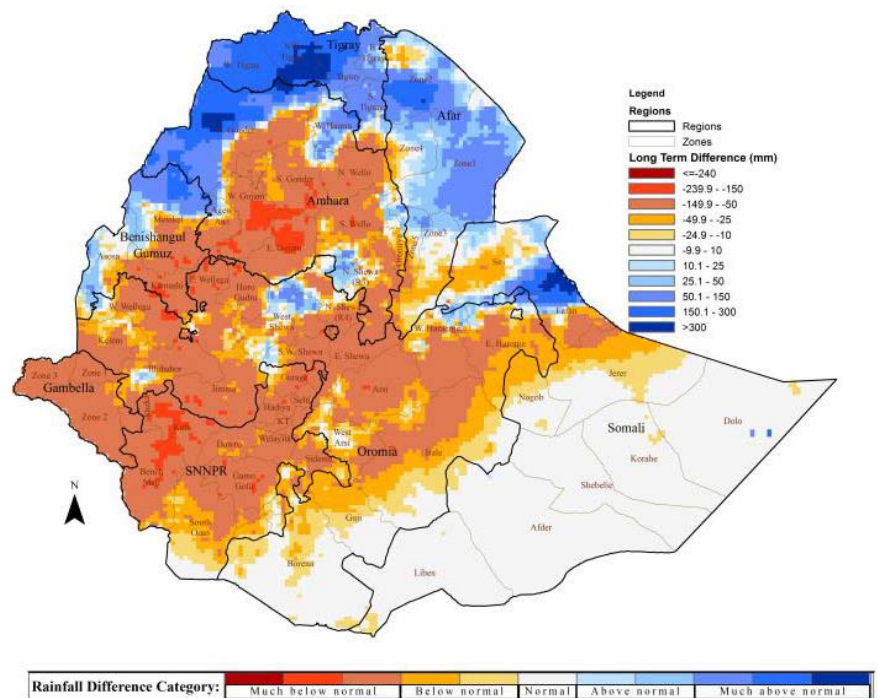
## Analyzing the summer *kiremt* rains in 2015

### Rainfall and impacts in August 2015

Following the delayed onset and erratic *kiremt* to the end of July, it was widely recognized that above normal August rains would be required to reverse the poor start to the 2015 *meher* season, and help avert a serious emerging food security crisis. The August rains were however patchy. Good rains were recorded in the far north of the country including rains of between 25 and 150 mm above the long-term mean in western Amhara, Tigray and the northern part of Afar, while pocket areas of Tigray and north-eastern rangelands recorded even higher rainfall against the long-term mean of over 250 mm.

In contrast, rainfall in the rest of the country was below the long-term mean with deficits of between 49 and 149mm including across prime *meher* cropping areas in Amhara, Oromia and SNNP regions. In some pocket areas, including East and West Gojam in Amhara and Kefa and Bench Maji in SNNP regions, the fall against the long-term mean was between 150 and 240mm.

Rainfall in Ethiopia, August 2015 - compared to 30-year long-term averages



The poor August rains resulted in more wilted and failed crops and a further increase in the number of livestock being presented in local markets. Livestock prices fell and the rural household purchasing power deteriorated. In addition, the World Food Program reported deteriorating casual wage rates as less labor was required for weeding and early harvesting work across the country.<sup>iv</sup>

In recognition that the pastoralist northern-rangelands were in crisis, that the 2015/16 *meher* harvest would be below normal and yield reductions would extend well beyond the normal drought susceptible *belg* highland areas, the Disaster Risk Management - Agriculture Task Force produced Bulletin 18: *El Niño Related Disaster Preparedness and Response Road Map - September 2015 to June 2016*. The road map outlined a range of early response interventions for drought-affected pastoralist and smallholder farming communities.

### Rainfall and impact in September 2015

The September rainfall map confirms that rains above the long-term mean were once again restricted to the northern part of the country including western Oromia and Amhara, Tigray, with some unseasonal showers across the north-eastern rangelands of Afar and northern Somali regions, shown in light and dark blue. Across this zone, rainfall was between 25 and 150mm above the long-term mean.

In contrast, the September rains were again below the long-term mean in central and eastern Amhara; in western, central and southern Oromia; and the greater part of SNNP regions. As a result of consecutive below-normal rains in large areas of the country, widespread crop losses were forecast and the full cost of the 2015 El Niño episode was becoming clearer.



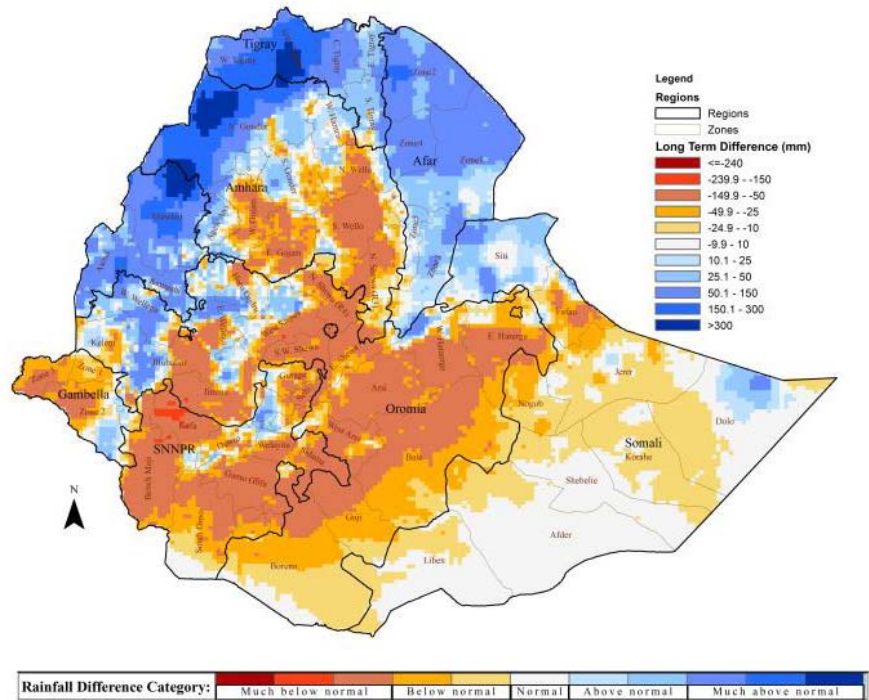
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For example, field reports confirm that some households were already reducing the number of meals eaten daily, the diversity of food declined with fewer pulses and a move to soups, and with little or no seasonal labor, households were forced to purchase food on credit. In the more drought-affected areas people began trekking long distances to find water - the Government has responded with water tankering - and became increasingly involved in the collection and sale of firewood and charcoal to raise cash to purchase food. It is reported in some areas that household members have migrated to nearby towns and also on to the Middle East to search for employment.

Ironically, in many highland farming areas livestock body condition started to recover in late August and September as farmers opened their dry fields to livestock to feed on wilted crops.

Rainfall in Ethiopia, September 2015 - compared to 30-year long-term averages



### Impact of the erratic and poor summer *kiremt* rains

In late December 2015 the harvest was on-going in the higher rainfall areas of the country, and it was therefore still too early to assess the full impact of the poor *kiremt* summer rains on national agricultural production. However, the Ethiopia 2016 Humanitarian Requirements Document (HRD)<sup>v</sup> recorded crop reductions of between 50 and 90 per cent in drought affected areas. Following a decade of impressive agriculture sector gains - including a reported doubling of cereal production - the 2015 El Niño threatens to halt and reverse recent annual increases in agriculture output.

Joint Government and Ethiopia Humanitarian Country Team regional assessments and analysis of 'analogue' El Niño impacted years estimate that 10.2 million people need emergency assistance, including approximately 400,000 cases of severely acute malnourished children and 1.7 million cases of moderately acute malnourished children.<sup>vi</sup> The main purpose of the HRD is to present international donors with sector response plans to assist drought affected communities. In January 2016 the Government will launch the fourth-phase (2016-2020) of the Productive Safety Net Program that will provide predictable cash and food transfers to an additional 8.1 million chronically food insecure people.<sup>vii</sup>

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"The highest priority remains food – some \$1.1 billion is urgently required for emergency food assistance",  
UNICEF Representative in Ethiopia.  
December, 2015

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### Emergency response plans

It is important to recognize that a strong Government of Ethiopia response was triggered as early as June 2015, following its declaration of the failure of the 2015 spring *belg* rains. In the period to November 2015, the HRD reports the release of more than US\$ 200 million in emergency assistance by the Government to drought-affected areas.<sup>viii</sup> The HRD also outlines the Government plan to commit an additional US\$ 97 million for emergency food assistance in early 2016. Ethiopia's international donors and development partners have also started to respond, but as indicated in the 2016 HRD, the funding gap across all sectors is US\$1.4 billion including US\$ 1.1 billion in food aid alone.

### Conclusion

The failed spring *belg* rains in 2015 followed by a deep El Niño episode affecting the summer *kiremt* rains have contributed to a major food security crisis in Ethiopia. The early launch and the scale of the 2016 HRD confirm the severity of the drought and food security situation. With estimated reductions in harvests of between 50 and 90 per cent in some regions, the 2016 HRD requests international donor support to meet the food and related emergency needs of an estimated 10.2 million people. Despite a rapid and extensive Government response, and some donor assistance, Ethiopia still faces a very substantial funding gap of US\$1.4 billion.

This figure represents vital support to hundreds of thousands of rural households who have been forced to sell livestock and other assets, are surviving on a reduced number of meals each day, are trekking long distances to collect water, and are increasingly borrowing from neighbors and traders to meet their food needs. Without a substantial and well-coordinated relief effort throughout 2016 and a continued recovery program in 2016/17, the loss of household assets and increasing indebtedness threaten to reverse the progress made by the Government over the last decade to lift rural Ethiopians out of poverty.

This Technical Brief was produced by the USAID Ethiopia Agriculture Knowledge, Learning, Documentation and Policy (AKLDP) project in Ethiopia, implemented by the Feinstein International Center, Tufts University. For more information about the AKLDP contact [adrian.cullis@tufts.edu](mailto:adrian.cullis@tufts.edu) or visit [www.agri-learning-ethiopia.org](http://www.agri-learning-ethiopia.org).

### Disclaimer

The views expressed in this technical brief are those of the AKLDP project and do not necessarily reflect the views of USAID or the United States Government.

### Endnotes

<sup>i</sup> Humanitarian Requirements – Mid-Year Review 2015, Joint Government and Humanitarian Partner's Document (August, 2015)

<sup>ii</sup> Specifically, East and West Haraghe, Oromia region [www.dppc.gov.et](http://www.dppc.gov.et)

<sup>iii</sup> AKLDP staff visited the main drought-affected areas between October and December 2015 to meet smallholder farmers and pastoralists to document information on the drought and its impact.

<sup>iv</sup> Ethiopia Monthly Market Watch. 2015. WFP Ethiopia VAM [http://vam.wfp.org/CountryPage\\_overview.aspx](http://vam.wfp.org/CountryPage_overview.aspx)

<sup>v</sup> The 2016 Humanitarian Requirements Document was launched on 14<sup>th</sup> December 2015. Typically it is released in January or February.

<sup>vi</sup> The figure of 10.2 million represents an increase from 2.9 million (January 2015), to 4.5 million (August 2015) and to 8.2 million people (October 2015) of which it is planned 4.4 million people will be transferred to the PSNP when it is launched in January 2016. The number of new beneficiaries is therefore 5.8 million people.

<sup>vii</sup> July to December 2015 the PSNP was in the re-design phase of the planned PSNP4 that will be implemented 2016-2020.

<sup>viii</sup> The 2016 Humanitarian Requirements Document. Joint Government of Ethiopia and Ethiopia Humanitarian Country Team. December 2015 [www.dppc.gov.et](http://www.dppc.gov.et)