



# Gu 2016 Rainfall Performance

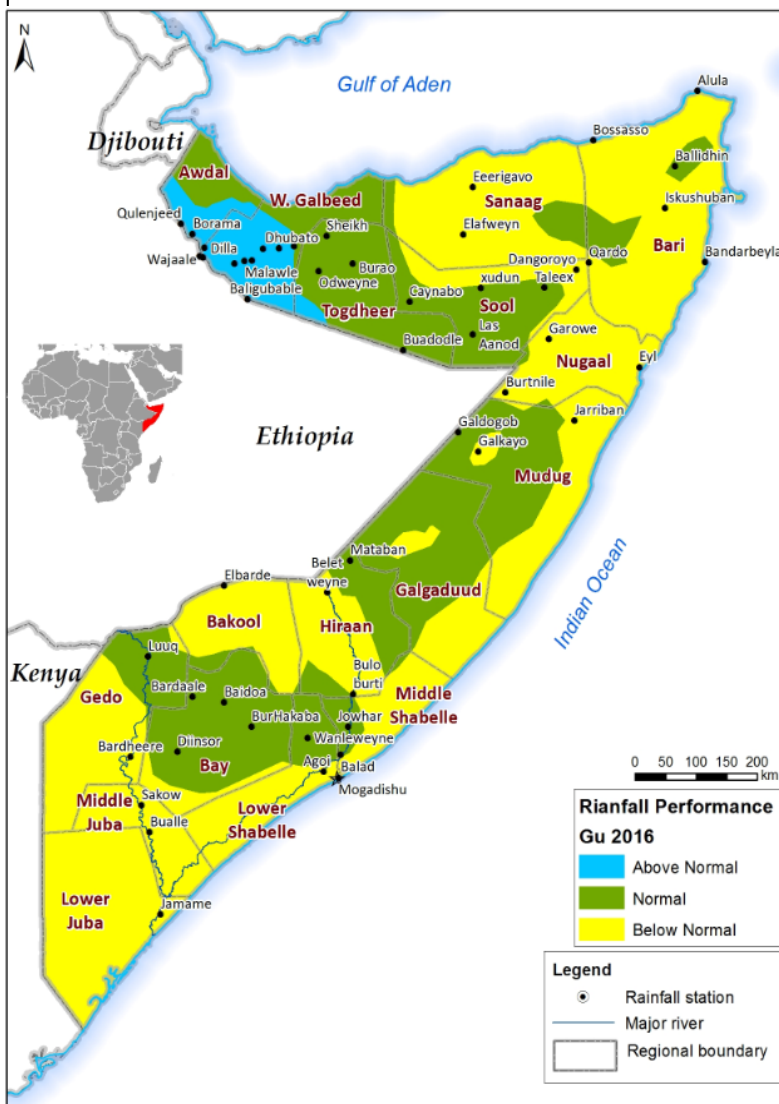
March–May 2016

Issued: 7th June, 2016

## Summary

The Gu 2016 season started off well in advance in some parts of the country during the third dekad of March and continued to spread spatially in the first and second dekads of April. Other parts especially in Puntland and southern regions had a late start of the season which also ended early. The distribution of the rains were normal to below normal with an exception of north western regions which saw above average rains compared to the long term mean for the period under review as seen in Figure 1.

Some places that recorded depressed rains include Sanaag, Bari, north of Sool, south of Mudug, Galgaduud, Bakool, Hiraan, Middle Juba, Lower Juba and Lower Shabekke. The poor rains which also had an early cessation raises a concern especially in Puntland where drought conditions have been present for a long time. With no more rainfall expected in the coming months, most of **Puntland regions and the coastal areas of Mudug and Galgaduud regions remain under drought conditions.**



The north west parts of Somaliland recorded above average rains. Other areas that received good rains include south of Togdheer and Sool regions. Some parts of the south and central regions within Bay and Bakool regions also received good rains.

The rains were well received by the communities especially in the northern parts which had a prolonged dry period. This came as a relief for many people who experienced drought conditions in parts of the country. The Ethiopian highlands experienced heavy rains that led to increased river flow inside Somalia leading to floods in some sections of Juba and Shabelle Rivers.

In general the rains led to improved soil moisture conditions that were favourable for both crops and pasture growth. Enhanced rains also led to replenishment of water reservoirs.

However, negative impacts were also felt such as floods that caused destruction of properties, infrastructure and loss of livestock. The floods affected about **100,000** people with **72,000** of them being displaced.

Figure 1: Spatial distribution of Gu 2016 rainfall (source SWALIM)

## Overall Gu rainfall performance

**South and Central:** There was a late start and early cessation of the Gu rains in these parts of the country. Figure 2 shows the Gu 2016 cumulative rainfall amounts compared to the Long Term Mean (LTM) for the same season. Most parts of Bay region, a small portion of Middle Shabelle recorded normal rains while the rest areas of Southern Somalia received depressed rains. Middle and Lower Juba recorded the least amount of rains during the season.

Heavy rains experienced in the Ethiopian highlands led to increased river flow along the Juba and Shabelle Rivers inside Somalia subsequently causing floods in some riverine areas.

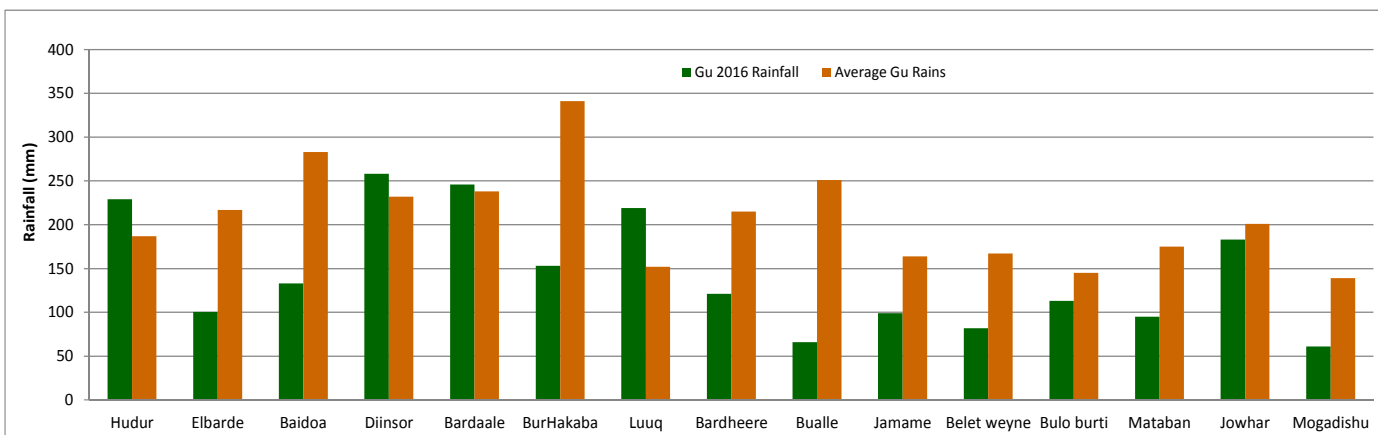


Figure 2: Gu 2016 Rainfall Performance in South and Central Somalia (Source—SWALIM)

**Somaliland:** There was a timely start of the season in Somaliland. Good rains were received in most parts during the Gu rainy season. The western parts of Somaliland recorded the highest amounts of rainfall which were above normal. The Eastern parts recorded within normal rains with some stations in Sool and Sanaag region receiving depressed rains (Figure 3). Drought conditions particularly in areas with below normal rains are expected to persist until the coming Deyr rainy season. This will have great implications in terms of water availability for livestock and human consumption in the coming months.

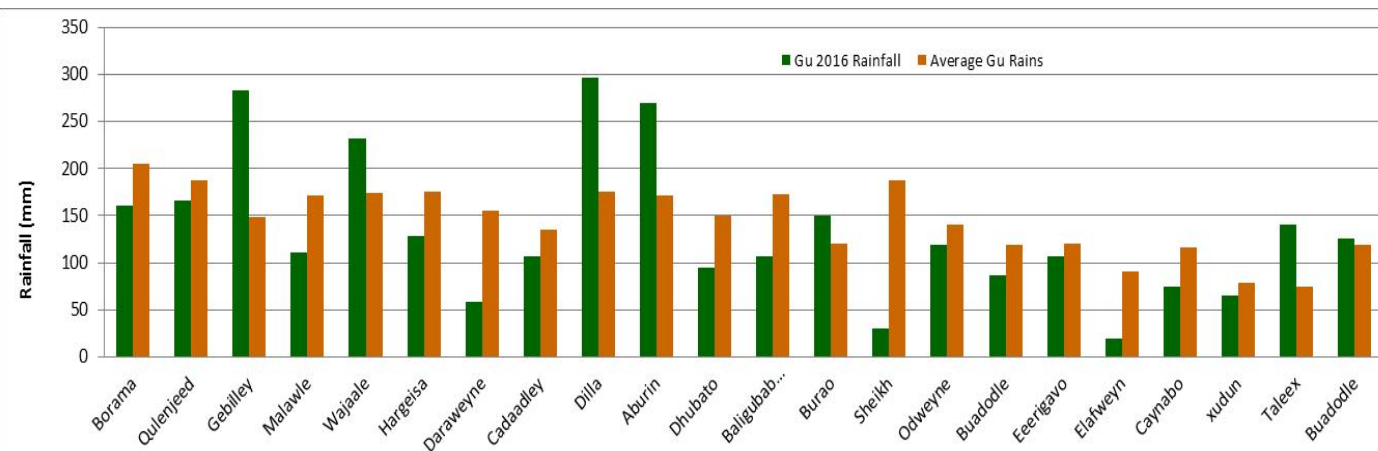


Figure 3: Gu 2016 Rainfall Performance – Somaliland (Source—SWALIM)

**Puntland:** Compared to the south and central parts of the country, Puntland regions recorded relatively less rains in terms of quantity and spatial distribution. The rains started late in last week of April and were erratic lasting only for a few days. The lower parts of Sool region, parts of Mudug and Nugaal regions are the only parts that received good rains within the season. The rest of the region recorded below normal rains. However, there was a general improvement of crop and pasture growth in many areas following the few days of intensive rainfall that also caused flash floods. Figure 4 shows the Gu 2016 rainfall performance of some stations in Puntland compared to the long term mean (LTM).

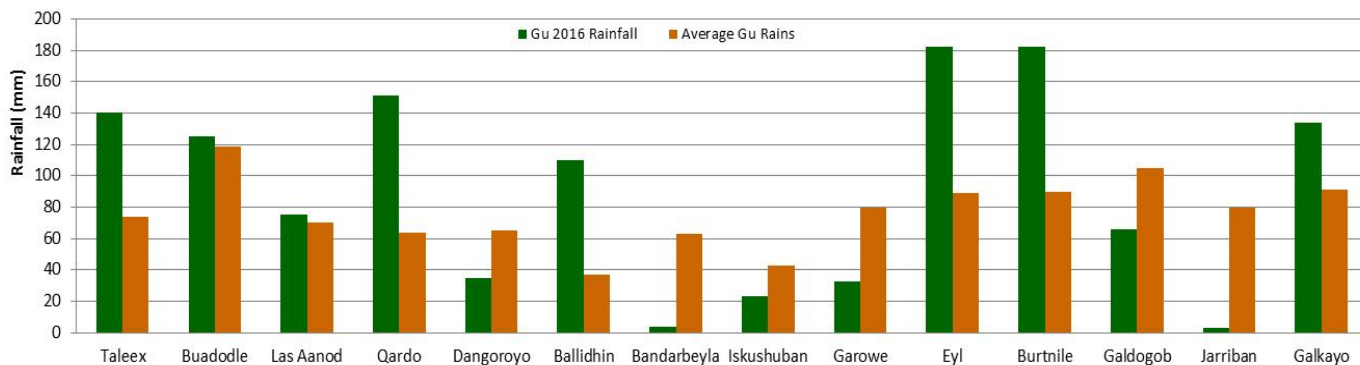


Figure 4: Gu 2016 Rainfall Performance – Puntland (Source—SWALIM)

## Vegetation conditions

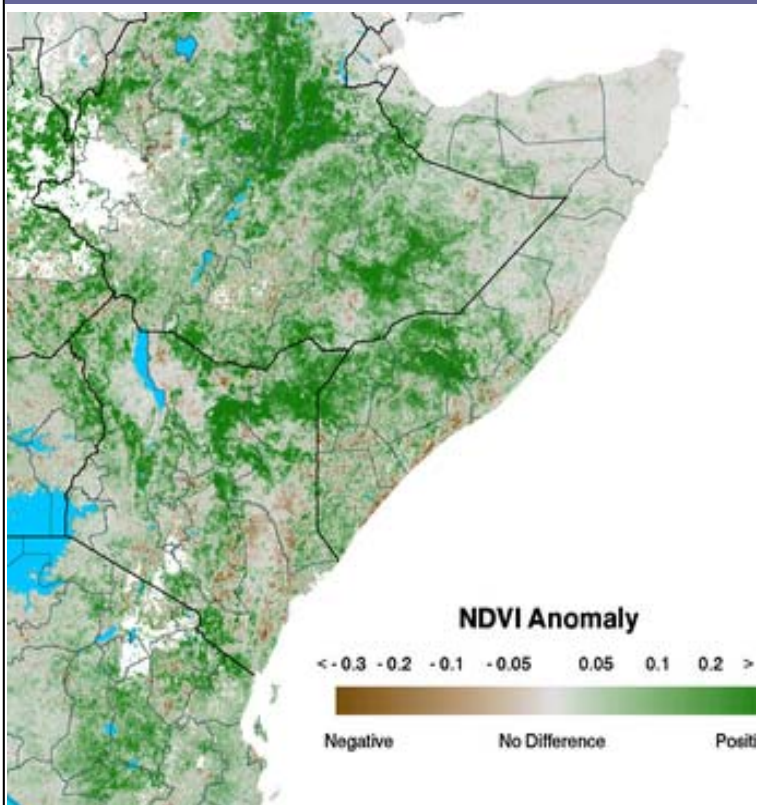


Figure 5: Vegetation conditions as at 31st May

(Source—USGS)

Satellite-derived vegetation condition (Normalized Difference Vegetation Index – NDVI) is used to assess the spatial distribution of vegetation during the season. The north western and areas bordering Ethiopia within Gedo and Bakool regions indicate good or positive conditions compared to the long-term average apart from few pockets. The positive conditions are contributed to the significant rains recorded in April and early May which boosted the growth of pasture and crops. Negative conditions are apparent in southern coastal areas and the larger part of Puntland with the rest of the other parts showing no much difference in vegetation conditions. These are areas where there were rainfall deficits.

## Water resources and floods

Heavy rains seen during the Gu 2016 rainy season within the Ethiopian highlands and inside Somalia brought relief to the dry conditions, but also led to flooding in other areas. Increased river levels along the Juba and Shabelle rivers caused flooding in several locations along the two rivers which affected about **100,000** people with **72,000** of them being displaced. Belet Weyne and Jowhar districts and their environs were the worst affected by the floods—Annex 2. About **37,700 ha** of land in Hiran region was inundated, of which **591 ha** was built up areas in Belet Weyne town. In Middle Shabelle approximately **20,000 ha** of land was under flood water. The flood extents in Hiran and Middle Shabelle regions are presented in Annexes 3 and 4 respectively.

Flash floods were also reported at the seasonal streams in Somaliland and Puntland leading to disruption of road transport.

The floods in Southern Somalia began in mid April causing extreme human suffering and economic damage. Factors other than weather played a role in causing the increased flooding. Alterations in the natural environment contribute to the increased frequency of floods in Somalia by increasing erosion rates that result in river bed sedimentation. This makes rivers shallower causing floods to occur even with low amounts of rainfall. Another key contribution that leads to floods year after year is the deliberate cutting of river banks by communities for irrigation purposes during low river flow which they do not close when the heavy rains begin to fall. This was the case for Jowhar floods.

The water resources sector benefited from the good rains in that there was increased river flow along the Juba and Shabelle rivers which was good for irrigation, livestock and domestic use. The rains were also good for ground water recharge in several places especially where there were rainfall deficits during the last rainy season. However, in Somalia, such heavy rainfalls are usually associated with degradation of water quality due to high sedimentation.

Figure 6 shows the current observed river levels at Belet Weyne (upper Shabelle). The peak of Shabelle River in Belet Weyne was realised in mid-May and remained at bank full for a couple of days before decreasing at the beginning of June. With the decreased rainfall activities the river levels are expected to drop further and stabilise in mid-June along the Shabelle River.

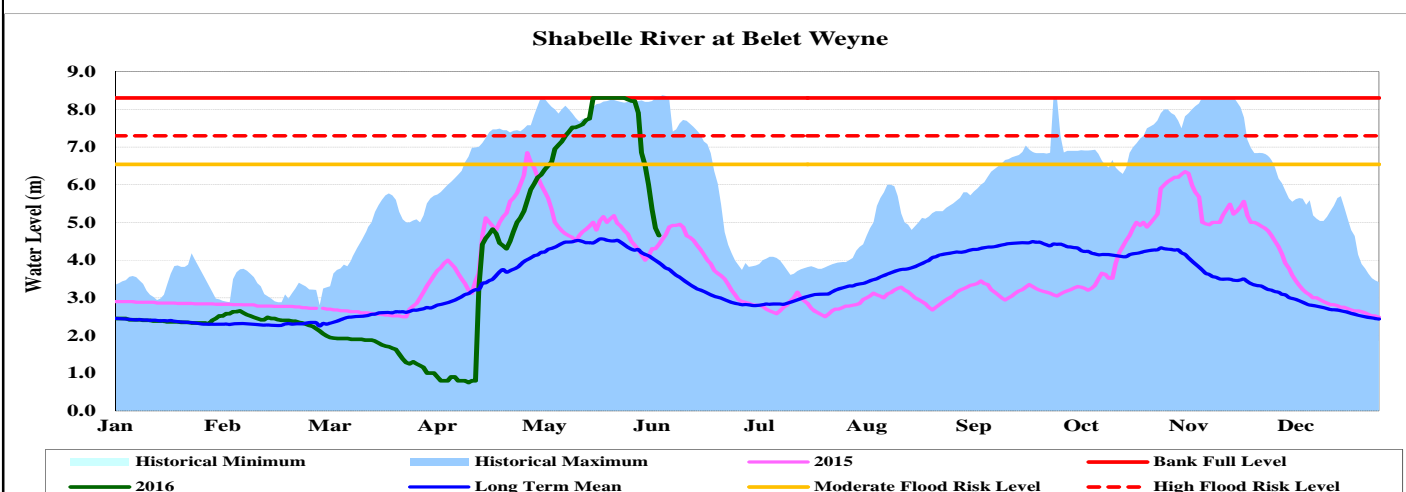


Figure 6: Observed river levels at Belet Weyne (Source—SWALIM)

## Climate outlook for June to August 2016 and expected impacts

The June to August period is usually a dry period in most parts of the country. However, after the Gu rains, the north western and southern coastal regions continue to receive rains which are locally known as *Karan* and *Xaggai* respectively.

The recently issued seasonal climate outlook for the Greater Horn of Africa indicates that the north western regions of Somalia will experience normal to above normal *Karan* rains while the southern coastal areas will record normal to below normal *Xaggai* rains. The rest of the country will remain dry which is the norm at this time of the year - Figure 7.

The outlook also indicated a heightened likelihood of La Niña to start developing during the second half of 2016 with a 75% chance of at least a weak La Nina by the end of the year that calls for close monitoring. The impacts of a La Nina events in Somalia are associated with depressed rains and consequently drought in most parts of the country.

With these findings, it is expected that the anticipated rains in the north western regions will boost crop and pasture growth as well as replenish ground water sources thus supporting recovery from the drought that has been there for quite a long time.

If the La Nina event takes place then the country will be affected adversely due to expected depressed rains. Puntland and central regions which are still experiencing droughts conditions will be worst affected.

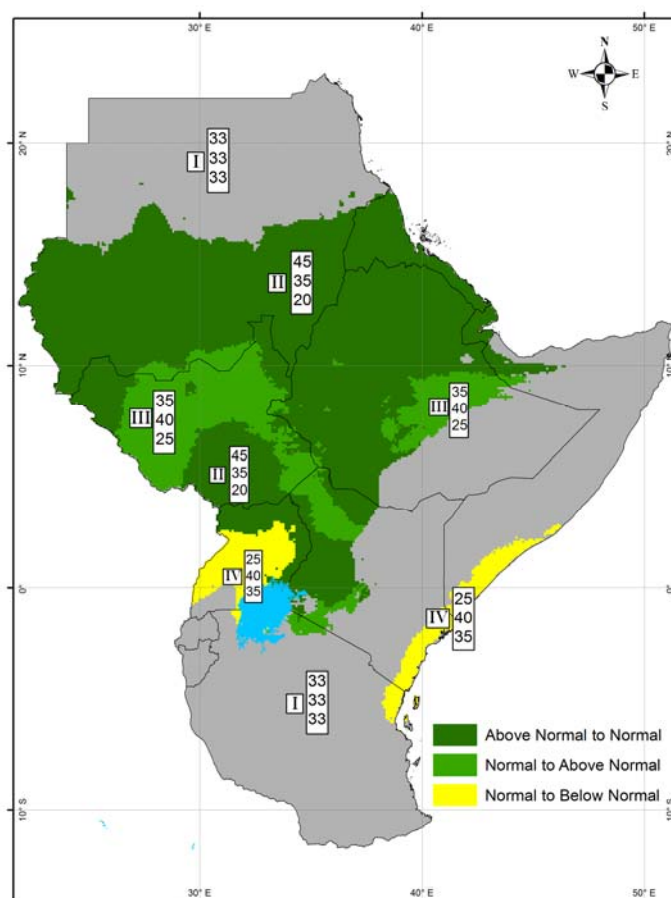


Figure 7: Seasonal Rainfall Forecast (Jun-Aug 2016)

## Annex 1—Gu 2016 rainfall performance

Station_Name	Region	Deyr 2015 Rainfall (mm)	Deyr Long Term Average Rainfall (mm)	Percent of Normal (%)
Gebilley	Wogooyi Galbeed	283.0	149.0	189.0
Wajaale	Wogooyi Galbeed	232.5	174.0	133.6
Dilla	Awdal	296.0	176.0	168.2
Aburin	Awdal	269.0	171.0	157.3
Qulenjeed	Wogooyi Galbeed	165.5	187.0	88.5
Odweyne	Togdheer	119.0	140.0	85.0
Eerigavo	Sanaag	107.5	120.0	89.6
xudun	Sool	65.0	79.0	82.3
Buadodle	Togdheer	125.0	119.0	105.0
Las Aanod	Sool	75.0	70.0	107.1
Diinsor	Bay	258.0	232.0	111.2
Bardaale	Bay	246.0	238.0	103.4
Jowhar	Middle Shabele	183.0	201.0	91.0
Sheikh	Togdheer	30.0	188.0	16.0
Elafweyn	Sanaag	20.0	91.0	22.0
Caynabo	Sanaag	75.0	116.0	64.7
Dangoroyo	Bari	35.0	65.0	53.8
Bandarbeyla	Bari	4.0	63.0	6.3
Iskushuban	Bari	23.0	43.0	53.5
Garowe	Nugaal	33.0	80.0	41.3
Galdogob	Mudug	66.0	105.0	62.9
Jarriban	Nugaal	3.0	80.0	3.8
BurHakaba	Bay	153.0	341.0	44.9
Bardheere	Gedo	121.0	215.0	56.3
Bualle	Middle Juba	66.0	251.0	26.3
Jamame	Lower Juba	99.0	164.0	60.4
Belet weyne	Hiraan	82.0	167.0	49.1
Bulo burti	Hiraan	113.0	145.0	77.9
Mataban	Hiraan	95.0	175.0	54.3
Mogadishu	Banadir	61.0	139.0	43.9

Below Normal

Normal

Considerably Above Normal

## Annex 2—Summary of Flood affected population

Town/village	District	Region	Date of flood reporting	Reported damage	Estimated Population Affected	Estimated Population Displaced	Comments
Baardheere	Jowhar	Middle Shabelle	28/04/2016	10,000 ha of farmlands affected	3,016 HH	0	The breakage is about 28m wide. Affected villages are Tuugaarey, Baardhere, Maagay & Kulmis Yarow of Jowhar District and Jameeco Misra, farbaraki, Damaley and Kooreebe of Bal'ad District
Bayahow	Jowhar	Middle Shabelle	1/5/2016	3,000 ha of farmlands affected	1,342 HH	243 HH	The breakage is about 12m wide. Affected villages are Bayahow, Raqayle and Primo Azenda of Jowhar District
Huriwa.	Mahaday	Middle Shabelle	14/05/2016	5,000 ha of farmlands affected	-	not confirmed	The breakage is about 40m wide.
Belet Weyne rural villages	Belet Weyne	Hiraan	14/05/2016	-	13,500 Persons	-	Affected villages include: Bulo Raaxo relocated to Mareer Gaagaab, Luuq Dheer to Waririle, Qarsoni East to Boorey, Jiiq dheer, Cilanta & Dololo madow to Waririle, Bacad to Guricaddo, Biyo Qurun to Qurac Raamole, Qoqane to Malmal, Lafoole to Dongadud/Qurac Qandho, Baslawe, Dheriyow & Garash to Dongadud, Lebow & Shinnile to Shirkaneco, Helo Keylo to Bananey, Qoydo to Garabdheen, Kurtunmaley to Abdikarin and Kooshin to Ilkacaddo
Belet Weyne town	Belet Weyne	Hiraan	26/05/2016	-	Over 100,000 Persons	70,000 Psns	Affected areas are Xawo tako, Kutimbo and Ex Italian compound within Belet Weyne town. The affected population moved to El-jaale, Jawil, Ilkacaddo and El Gaal villages
Bantal, Dhuma, Dhumay and Gubata	Dollow	Gedo	9/5/2016	not confirmed	not confirmed	not confirmed	River over flow
Bali dhidin	Bali dhidin	Bari	9/5/2016	10 houses destroyed	not confirmed	not confirmed	Heavy rains led to flash floods with destruction in the area
Washan, Hurufle, Dulima	Buale	Middle Juba	11/5/2016	Maize, simsim and vegetables destroyed by floods, arage not confirmed	-	-	-
Sakow villages	Sakow	Middle Juba	13/05/2016	-	720 Persons	Not confirmed	Hilo Amin, Qunjoole, Basro, Dhoqoy, Bulo Dhato, Bulu Nurow, Buula Adey, Bulu Furud, Lawati, Daggaras, Hili Ari, Bulu Sufi, Garas Uusele

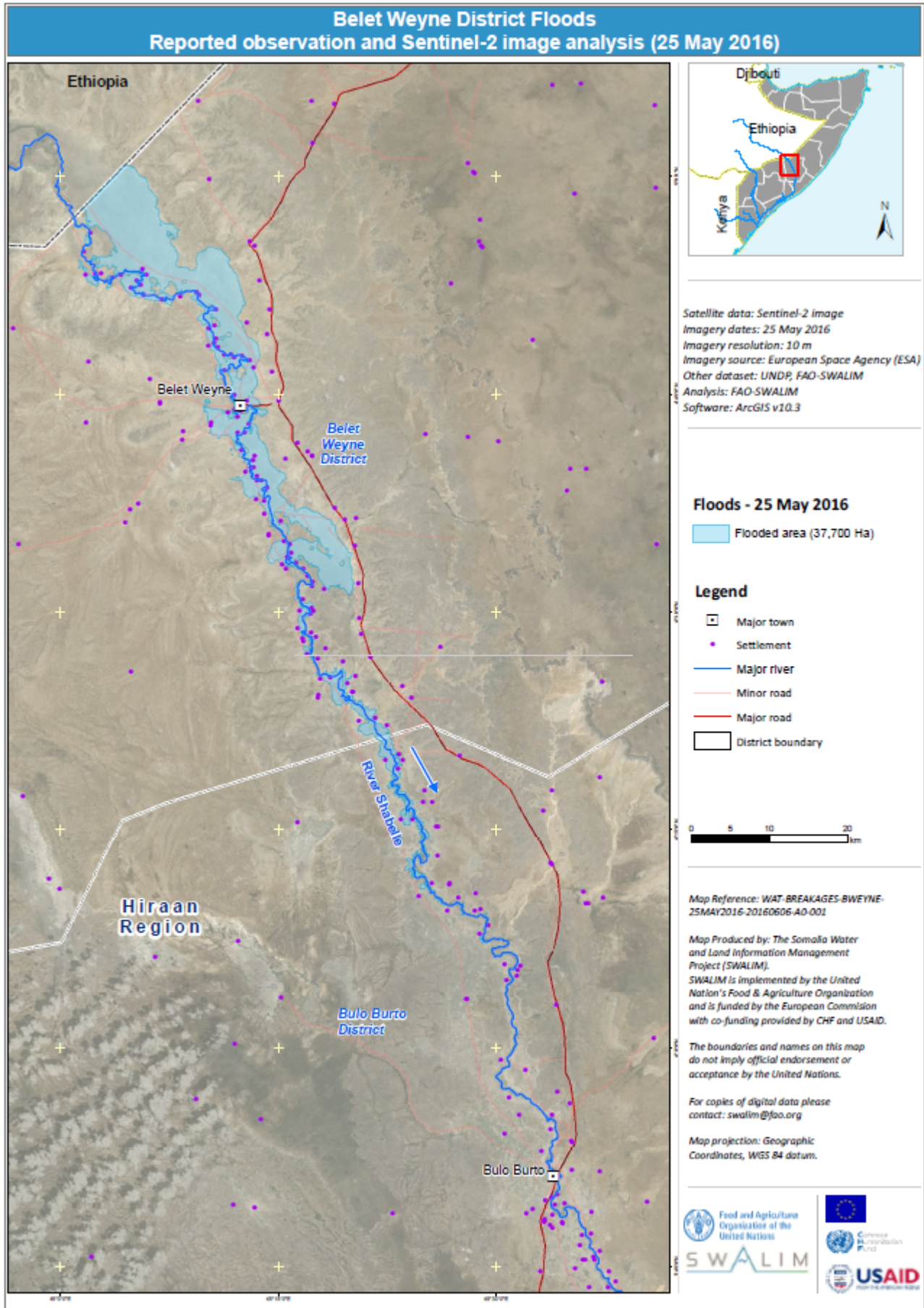
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# Annex 3—Flood extent in Belet Weyne District



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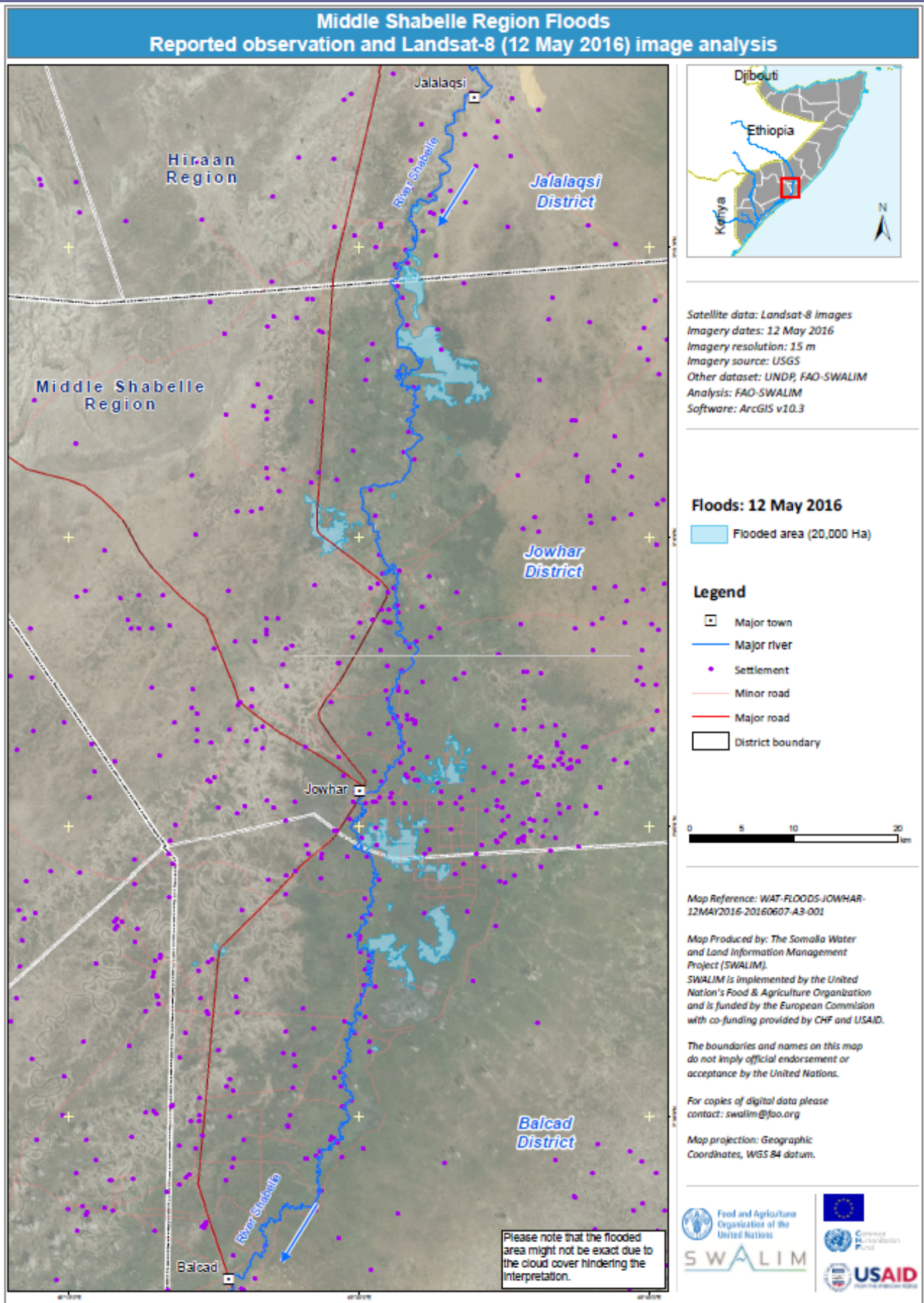


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# Annex 4—Flood extent in Middle Shabelle Region



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