

Figure 1 Location of Juba and Shabelle River Basin with Elevations (m)

Somalia is periodically affected by various forms of natural and manmade hazards. Floods are notably one of the most devastating natural hazards in the country, causing tremendous loss of lives and extensive damage to agriculture, vegetation, human, wild life and local economies. Juba-Shabelle River Basin is the source of the two most significant rivers (Jubba and Shabelle) in the country that provide sufficient water for crop production, livestock and for domestic use (Figure 1). It is widely believed that the alluvial plains of the two rivers to be the breadbasket of Somalia as they have considerable potential for irrigation development. However, floods are a common phenomenon in the riverine areas of the Juba and Shabelle River basin during the two main rainy seasons of Somalia Gu (April to June) and *Deyr* (October to December). The low-lying areas along the Juba and Shabelle Rivers are usually experienced flooding of various magnitudes. This is caused or amplified by both weather and human related factors. The natural one is due to quantity and frequency of precipitations experienced by the Ethiopian side of the Juba and Shabelle River Basin is far more exceeding than the one occurs in Somalia.

Factors other than the weather that has been playing a major role in causing the increased frequency of floods in the riverine areas is alterations in the natural environment for the past 27 years by increasing erosion rates which in turn results sedimentation in river channel making rivers shallower causing floods to occur even with low amounts of precipitation. Furthermore, sudden embankment failures are one of the key causes of flooding in Jubba and Shabelle catchments though deliberate cutting of river banks by riparian communities for irrigation purposes during the dry seasons is common in the riverine areas which could be considered another important factor that has led to recurrent floods in recent times due to the absence of river regulatory systems in Somalia. On the other hand, the last two decades, northern Somalia (Puntland and Somaliland) has experienced several serious flash floods that have resulted in damage to property and loss of lives. These regions have a hot and arid climate and a short rainy season with occurrences of intense rainfall events that can result in flash floods. Flash flood events frequently trigger disasters in these regions because of the lack of warning and prevention measures in place.

The Gu 2018 rainy season started off well in advance (two to four weeks earlier than normal) in many parts of the country during the month of March and significant rainfall continued to spread spatially in the first and second dekads of April and persisted through early May. The season was generally good in most parts of the country, with many places recording normal to above normal rains which marks the end of protracted drought across much of the country. In several areas of central, much of southern parts, and north-western regions, the total amount of rainfall received during the first two months of the season is the highest on record. During the Gu 2018, rainfall amounts greater than 125% of the long-term average was recorded over much of the country. Rainfall conditions less than 75%

of the long-term average rainfall was observed in north-eastern parts of Puntland; over southeastern part of Awdal region; around Mogadishu, and isolated areas in western half of Somaliland (Figure 2). Much of the rest of the country received rainfalls that ranges between 75% and 125% of long term average rainfall for the same period which translated to near average rainfall conditions.

However, the heavy rains seen during the Gu 2018 rainy season within the Juba and Shabelle river basins inside Somalia and in the Ethiopian highlands translated to increased river levels of Jubba and Shabelle in Somalia. The subsequent flooding caused by these heavy rainfalls have led to fatalities, massive displacement, and damage to infrastructure and cropland. The current floods are some of the worst that has ever seen in the riverine areas, and the current water level exceeds a 50-year return period in most locations. Flooding has occurred in several riverine areas of Gedo, Hiraan, Lower and Middle Shabelle, and Lower and Middle Juba. The town of Belet Weyne and its environs experienced one of the biggest floods in its recent history. Shabelle River at Beledwayne town has been rising since late April at an unprecedented rate in just few days in April and sustained bank-full levels in several locations through May, causing flooding much earlier in the season. Thousands of people have been affected by floods in Beledwayne in April and May and some of the affected populations were already IDPs living in low-lying displacement camps since 2016's devastating drought and food crisis. The flooding has also contaminated a number of water sources thus raising concerns of malaria and cholera outbreaks.

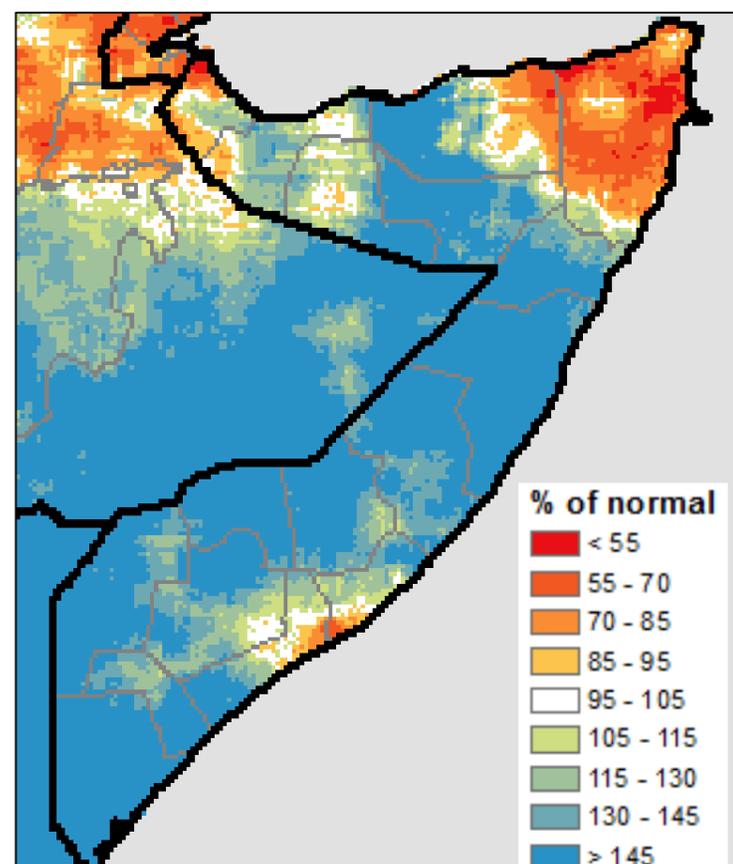


Figure2 the amount of rainfall received expressed as percentage of long term average, March 1 to 15 May 2018, compared to the 1981-2010 average, CHIRPS prelim

According to FEWS NET and FSNAU food security alert issued on 11 May 2018, floods inundated an estimated 10,250 hectares (ha) of crops and an additional 18,000 ha of cultivatable land in Gedo, Lower Juba, and Middle Juba. Along the Shabelle River in Hiraan, flooding displaced approximately 180,000 people, including 22,500 households in Beletweyne town, and destroyed crops, stored commodities, and transportation infrastructure. It is estimated over 70 percent of farms in riverine areas of Hiraan have been inundated. Given the rainfall forecast and the high river levels, flooding is expected to continue in low-lying areas of the Juba and Shabelle River basins. Needs are expected to increase in displacement sites and riverine areas in the near term. FEWS NET and FSNAU estimate 700,000 people in flood affected areas will need livelihoods support through September, roughly 300,000 of whom are likely to need emergency food assistance. On top of that, Somali President Mohamed Abdullahi Farmajo has called for an urgent humanitarian assistance to thousands of Somalis affected by river floods in

Somalia. The UN also appealed for additional aid and funding to confront the increasing numbers of internally displaced people.

In recent years, the number of people living close to rivers and within floodplain areas are growing rapidly in Jubba and Shabelle Basin, and recent times have proven a significant increase in frequency and severity of flood events in riverine areas in Somalia. This creates a major threat to a growing number of people and their property. Prior to the collapse of government of Somalia 1991, flooding was not a big challenge as the irrigation system was well developed and managed and communities were able to put in place coping strategies using traditional methods of reinforcing of embankments and rehabilitating canals. However, in the absence of an early warning system in Somalia, FAO SWALIM has developed a system for monitoring river breakages along the two rivers using Remote Sensing and Geo-Spatial tool to minimize impacts of flooding. The system provides data and information on river breakages including potential, open and closed breakages. Timely closure of open river breakages reduces flood damage to cropland, livestock and other property and also minimizes displacement of people due to flooding. Prior to the current Gu (2018) floods, SWALIM has monitored closely riverbank breakages and areas of potential flooding along the Jubba and Shabelle Rivers in Somalia using satellite images, combined with field observations, to identify weak points along the rivers and shared this information with development partners, local authorities and communities.



Figure 3 Roads in Beledwayne have been washed away by the floods

The recurrent floods in the Jubba and Shabelle Basin have also necessitated the need for development of a hydrological forecasting system that could warn people in advance of approaching floods to save life and property. As a result, SWALIM has distributed Flood Preparedness and Safety materials written in a simple Somali language. The leaflets contain key messages for local communities on what to do before, during and after a flood. Furthermore, through a fund received from FAO-SWALIM, SoDMA, Benadir University and Somali National University have conducted an integrated Community sensitization and mobilization for early warning system in Juba and Shabelle Basin to enhance the community knowledge about early warning information and disaster risk reduction and preparedness measures. During this critical period, SWALIM has also reactivated the existing early warning system to include an SMS alert system, called Digniin, that provides communities with up-to-date messages on rainfall and potential or occurring floods. More importantly, daily

flood observations (water level) are provided by FAO-SWALIM and compared to moderate and high-risk flood levels for a major six stations along the two Rivers.

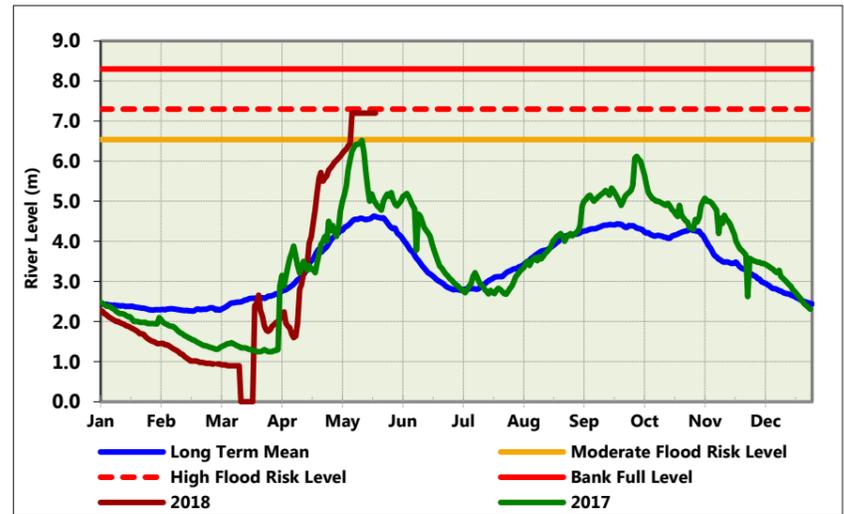


Figure 4 Observed river levels at Belet-Weyne are currently above the high flood risk level and reached bank full level.

It is also important to point out that on 19 May, the tropical cyclone Sagar, which had formed in the Gulf of Aden made landfall in north-western Somaliland after it formed in recent days (Figure 5). Parts of Somaliland and Puntland have been experiencing strong winds with heavy rains particularly in areas situated along the storm path causing the loss of lives, crops and livestock as well as the destruction of property and infrastructure. On the other hand, devastating Flash floods engulfed parts in Mogadishu on 20 May 2018 after heavy rains killing 6 people. The heavy rains also caused the major roads in in the city to be submerged under flood waters and evidently exposed the absence of drainage system and poor quality of the roads. Dozens of displaced families have been left without shelter after rains destroyed their makeshift houses in Mogadishu. The IDPs peoples remain particularly vulnerable as expressed concern over the possible outbreak of disease amid the onset of the rainy Gu' season in the country.

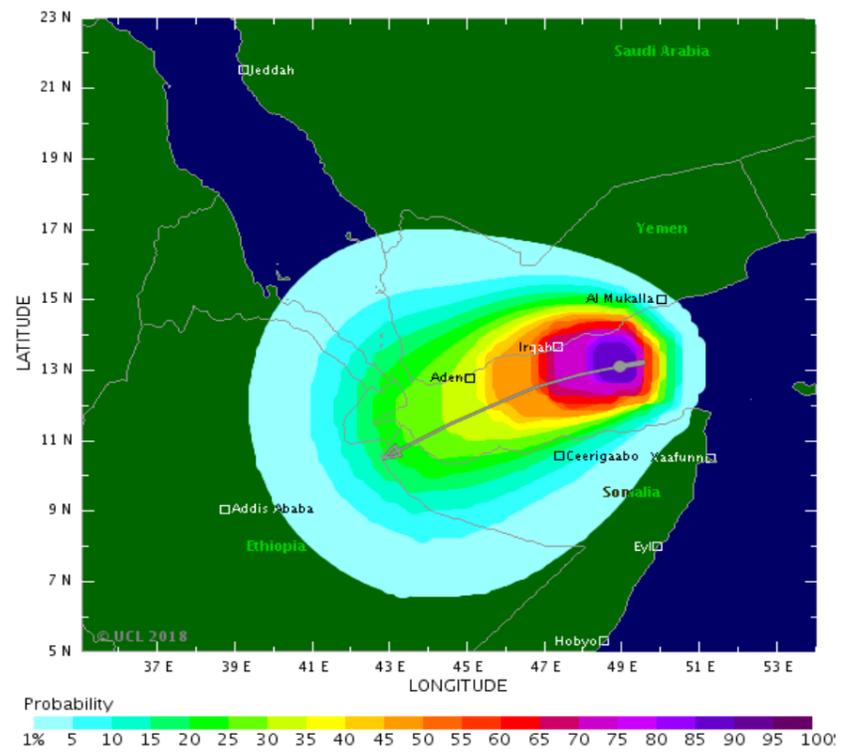


Figure 5 the Tropical Storm Saga Track in northern Somalia

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SWALIM Technical Partners



SWALIM is Currently Funded by:

