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Foreign Agricultural Service
Global Market Analysis
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Commodity Intelligence Report

Tanzania: Excessive Rains Reduce 2020/21 Cotton Prospects

Tanzania's main cotton region in the northwest received excessive rainfall during the entire growing season, and potential yields were reduced from floods, waterlogging, fertilizer leaching, and increased insect pressures. USDA estimates 2020/21 cotton production at 375,000 480-lb bales, down 220,000 bales (-37 percent) from last year's record output. Above-average rainfall during the planting season caused flooding and poor plant establishment which also reduced cotton area to 450,000 hectares (ha), or down 150,000 ha (-25 percent) from last year's record area.

Nearly 94 percent of Tanzania's cotton is grown in the northwest with Simiyu (47%), Shinyanga (13%), Mwanza (10%), Geita (9%), Tabora (9%), and Mara (6%) being the top cotton producing regions (Figures 1 and 2). Cotton in Tanzania is mainly grown on small-scale farms ranging from 0.5 to 10 hectares, with average farm size being 1.5 hectares. Small-scale cotton farmers rely on rainfed production, use limited inputs, and plant the cotton crop by hand hoes and animal traction.

Total cotton area in Tanzania tends to fluctuate with prices because smallholder farmers will plant alternative crops if cotton prices are too low. The number of smallholder cotton growers range from 350,000 when prices are low to more than 500,000 when prices are high. Cotton in Tanzania is generally planted from November through January and harvested from June through October. The local marketing year for Tanzanian cotton is from July 1 to June 30 while the marketing year as defined by USDA's PSD Online is from August 1 to July 31.

Seasonal rainfall during the 2019/2020 growing season was the wettest season since 1981 for most of Tanzania (Figure 3). Onset of rains in November was timely, but excessive rainfall during December and January caused many farmers to replant due to flooding and poor plant establishment. Rainfall was above-average during the entire growing season, but yield prospects were reduced from leached fertilizers, increased insect and disease incidents, and rain when cotton bolls were open. (Figures 4 and 5).

The Global Agricultural Monitoring (GLAM) system by USDA/NASA archives and displays 8-day NDVI (Normalized Difference Vegetation Index) composites obtained from the MODIS (Moderate Resolution Imaging Spectroradiometer) sensor onboard NASA's Terra and Aqua satellites. The GLAM system helps to estimate total vegetation biomass and relative crop yields during critical crop stages by providing cropland NDVI-MODIS time series measurements for the entire growing season and Percent of

Average Seasonal Greenness (PASG) images. Both NDVI-MODIS time series measurements and PASG-MODIS images are very useful tools for estimating relative crop yields as the crop season progresses.

The PASG-MODIS image from February through April 2020 reveals above-average vegetation biomass from the first flower in February, and most cotton bolls opened in April (Figure 6). The NDVI-MODIS time series graph also indicates that vegetation biomass is near maximum levels for the entire growing season which typically indicates near record yields (Figure 7). Reports from the field, however, indicate yields will be less than last year due to excessive rains that caused floods, waterlogging, fertilizer leaching, and increased insect and disease pressures. The current USDA forecast yield is estimated at 181 kilograms per hectare (kg/ha), down 16 percent from last year's yield but up 8 percent from the 5-year average yield. The MY2020/21 crop is currently being harvested from June through October, and total bales ginned should be reported by Tanzania's Cotton Board by the end of this year or early next year.

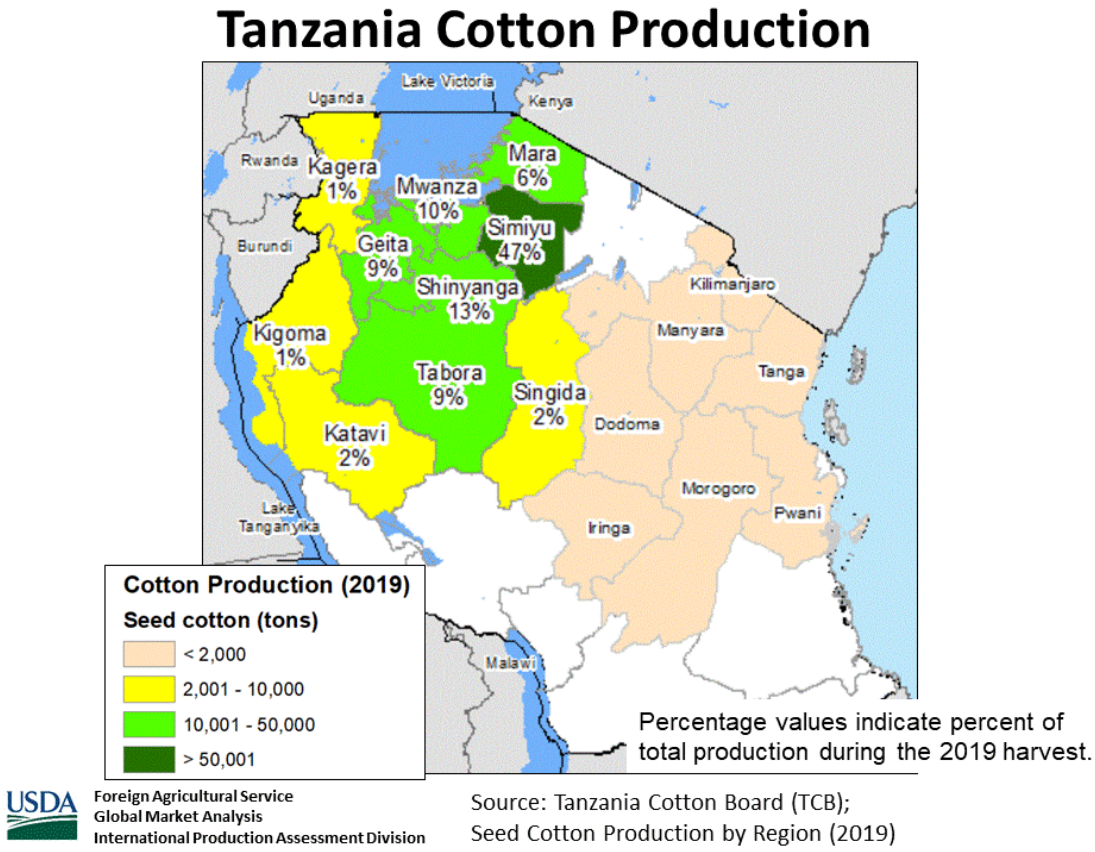

Figure 1. Tanzania Cotton Production

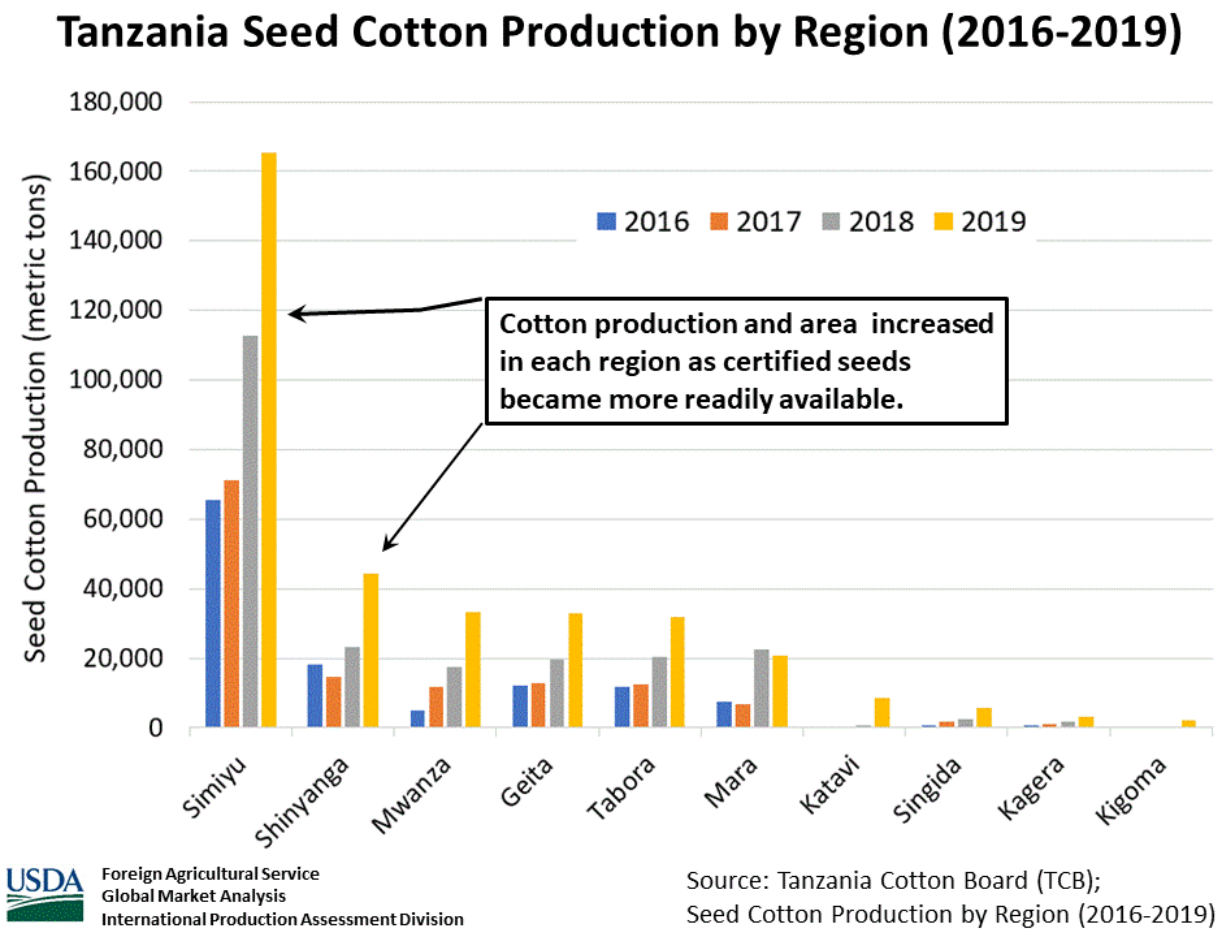

Figure 2. Tanzania Seed Cotton Production by Region from 2016-2019

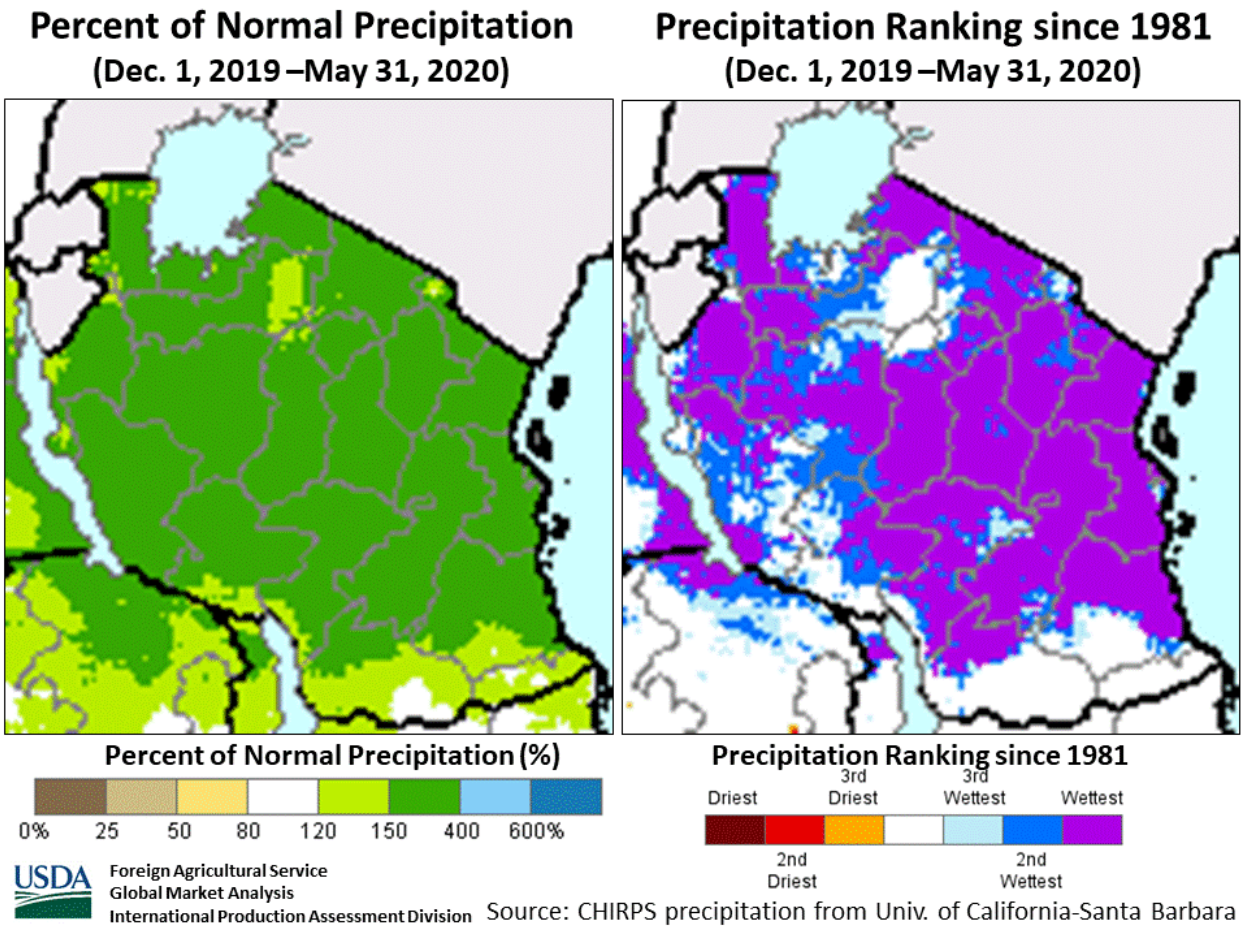

Figure 3. Percent of Normal Precipitation and Precipitation Ranking since 1981

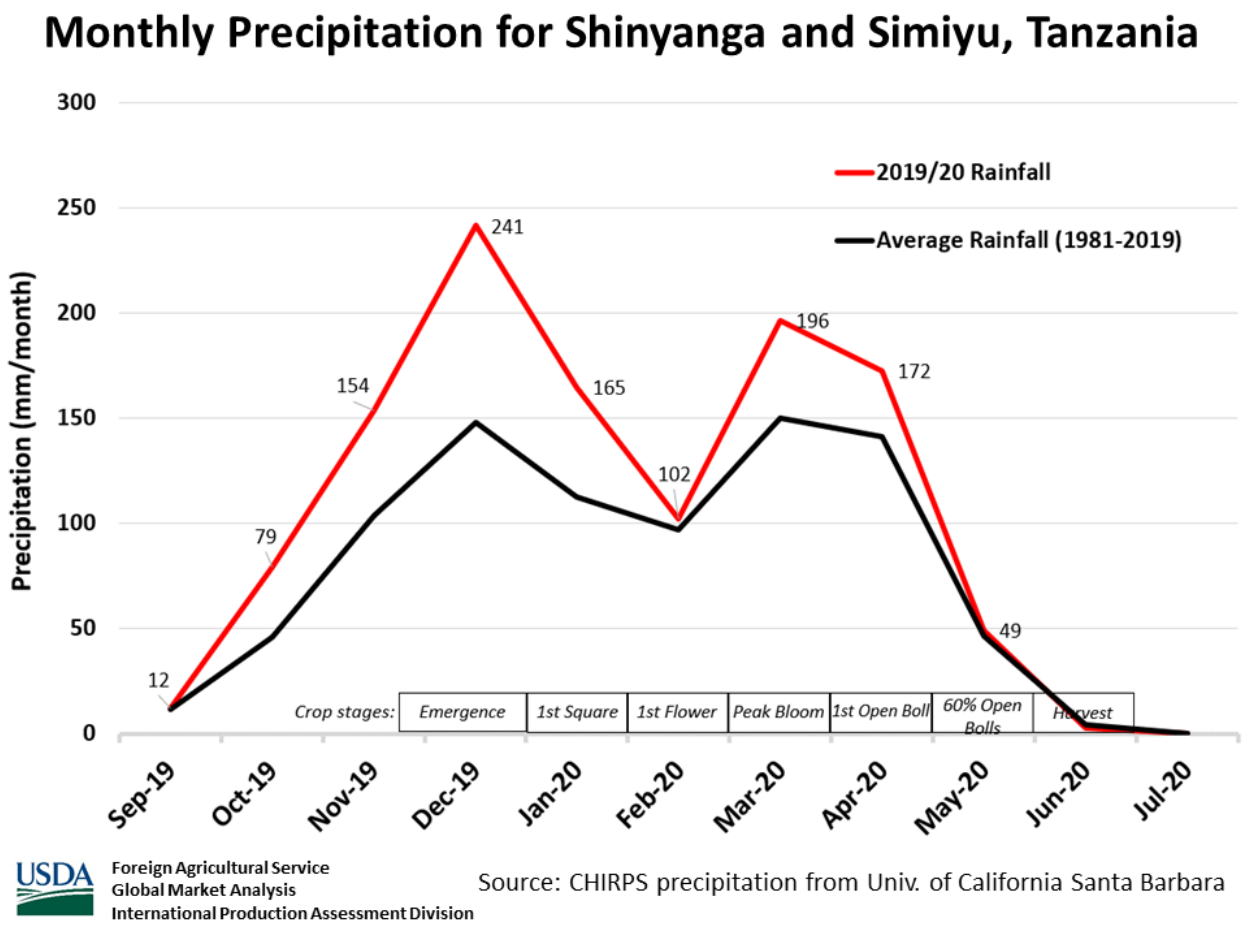

Figure 4. Above-Average Precipitation during the 2019/20 Cotton Growing Season

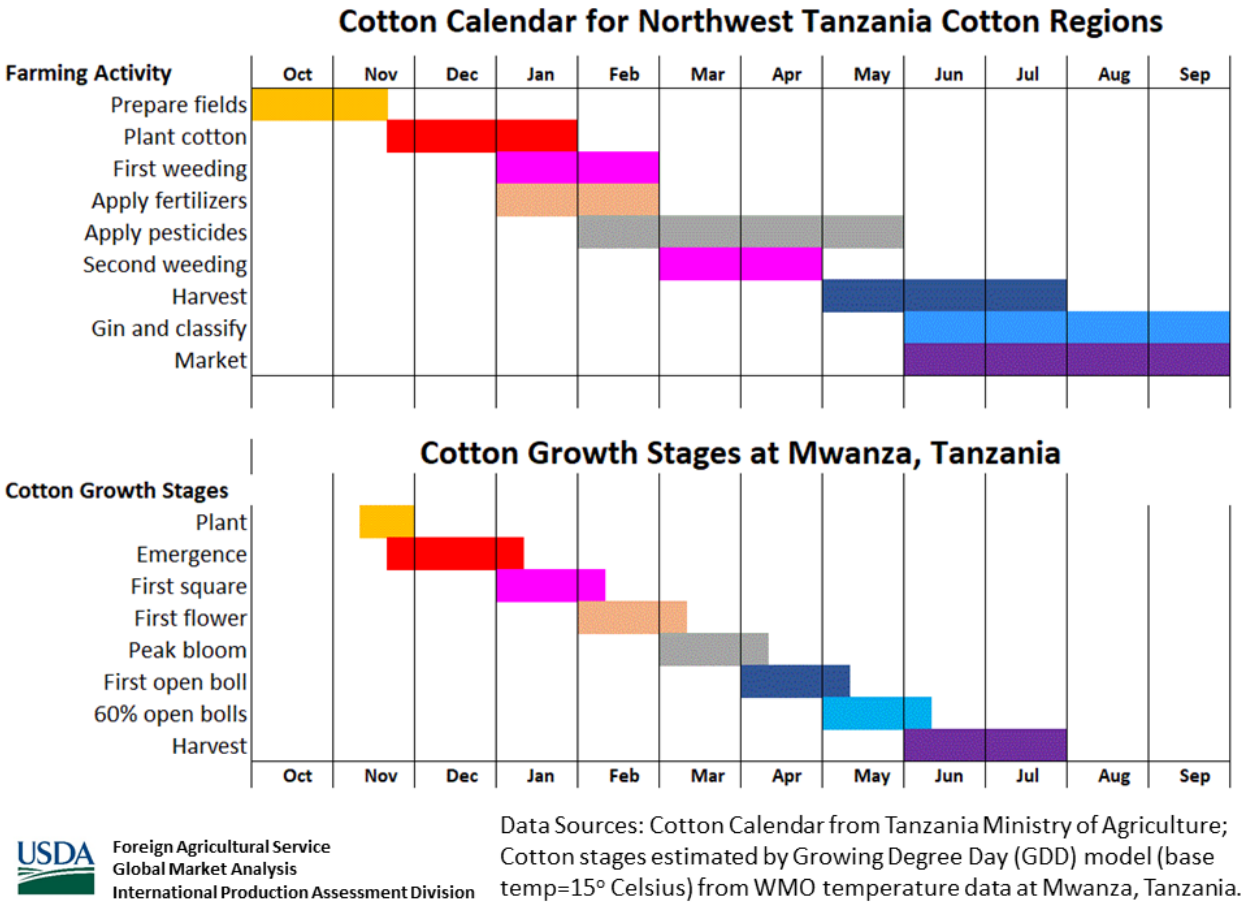

Figure 5. Tanzania Cotton Farming Activity and Growth Stage Calendars

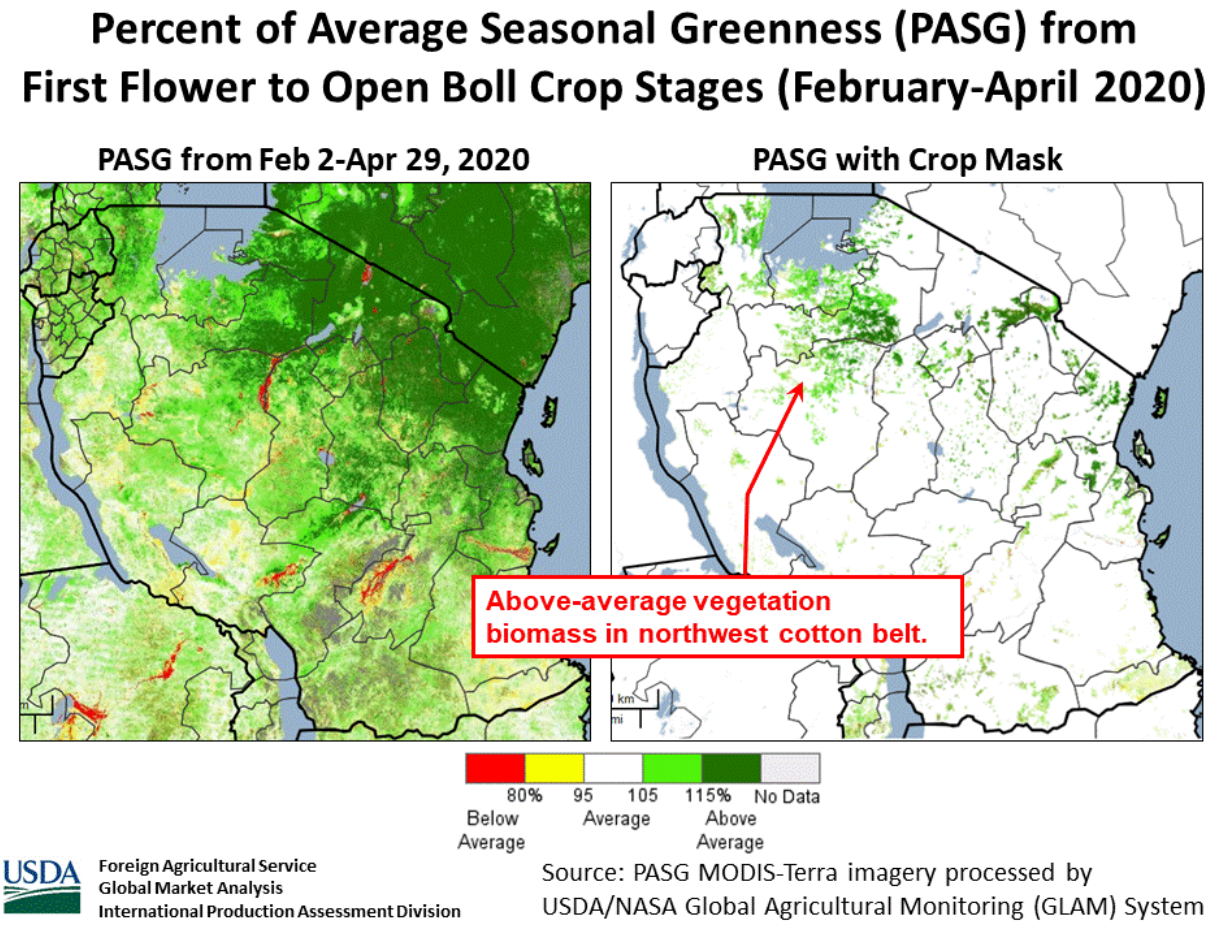

Figure 6. Above-Average PASG and Vegetation Biomass from February through April 2020

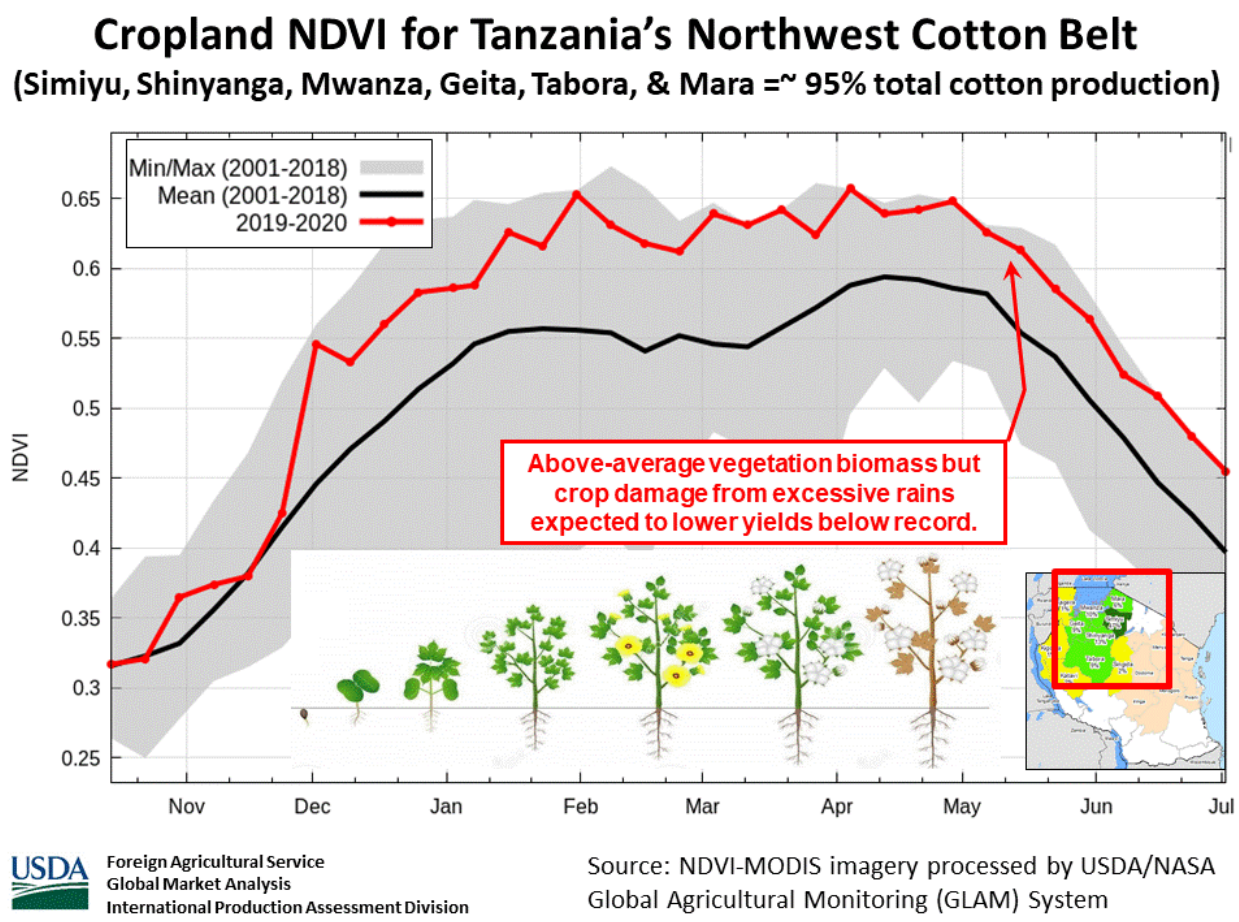

Figure 7. Above-Average NDVI and Vegetation Biomass for Entire 2019/20 Growing Season

Author contact information:

Curt Reynolds
Curt.Reynolds@usda.gov

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Current World Agricultural Production Reports
https://www.fas.usda.gov/data/world-agricultural-production

Production, Supply and Distribution Database (PSD Online)
https://apps.fas.usda.gov/psdonline/app/index.html#/app/home

Global Agricultural Information Network (Agricultural Attaché Reports)
https://www.fas.usda.gov/databases/global-agricultural-information-network-gain

Crop Explorer
https://ipad.fas.usda.gov/cropexplorer/

Global Agricultural Monitoring System (GLAM)
https://glam1.gsfc.nasa.gov/

Global Agricultural and Disaster Assessment System (GADAS)
https://geo.fas.usda.gov/GADAS/index.html