

Use of satellite data and products in agricultural meteorology

Workshop held from 23 -27 march 2015

Ethiopia. Addis Ababa

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Remote Sensing data used in Zambia

❑ Determination of areas of rainfall deficit

- The product derived is the satellite rainfall estimations such as meteosat and polar orbiting such as NOAA

❑ Rainfall estimates

- based on satellite such as meteosat thermal infrared imagery CCD(cold cloud duration an indicator of convective cloud activities and even Tamsat methodology. different rainfall information is produced and disseminated to various users ranging from farmers, researchers to decision makers

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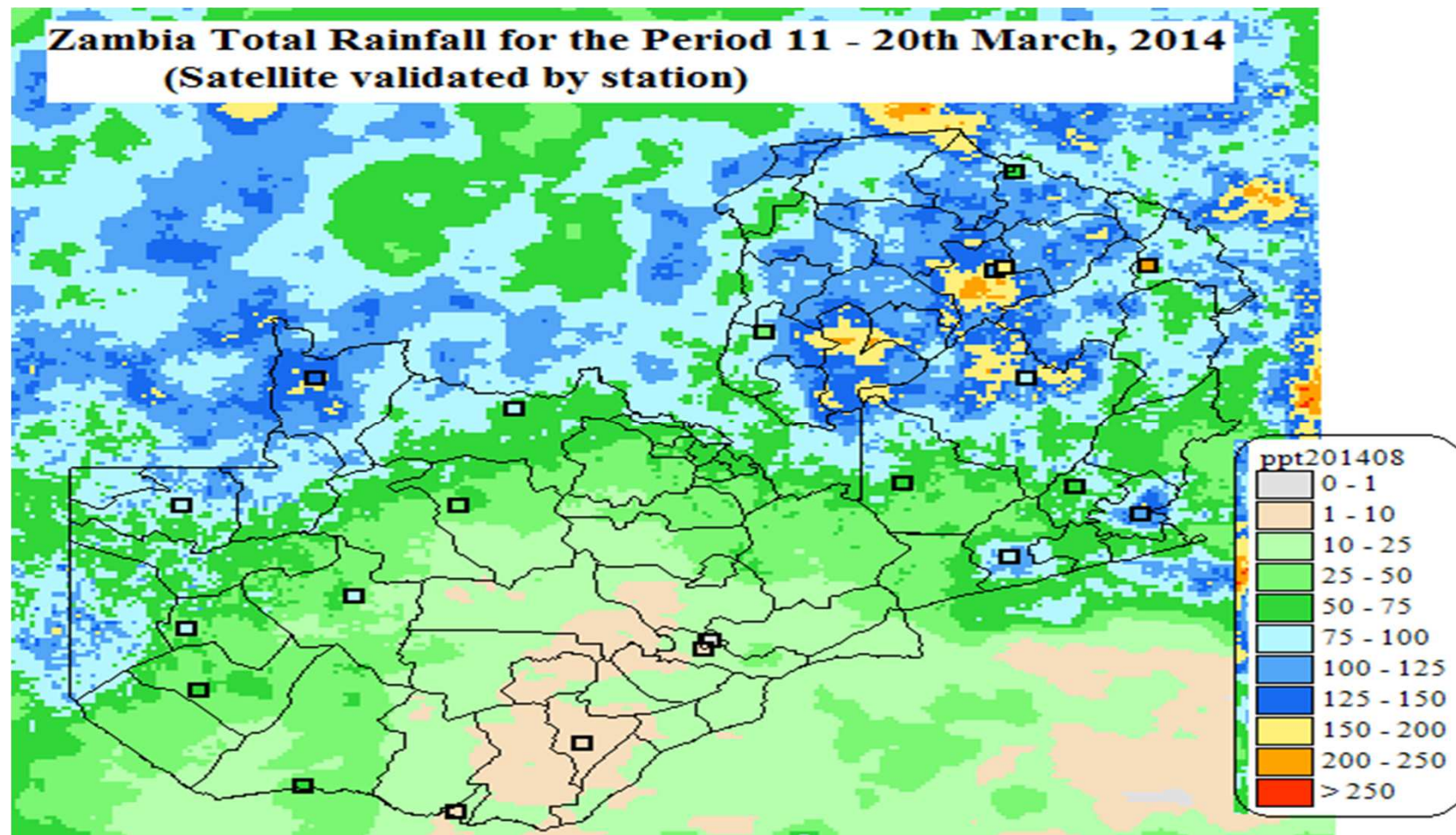
- The product is NOAA -AVHRR satellite receivers
- map flooding**
- The data product is multi temporal landsat and Gis data
- ten days estimates Bulletins**
- The product is satellite data
- vegetation index, NDVI images**
- The NOAA-AVHRR combination of NIR and RED reflections

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- **Drought monitoring**
 - ❖ The product is meteosat and Nooa Avhrr data
- **Early warning**
 - ❖ Flash flood guidance system sat 24.com
- **Monitoring crop condition WRSI**
 - ❖ The product is from Eumetsat and FAO

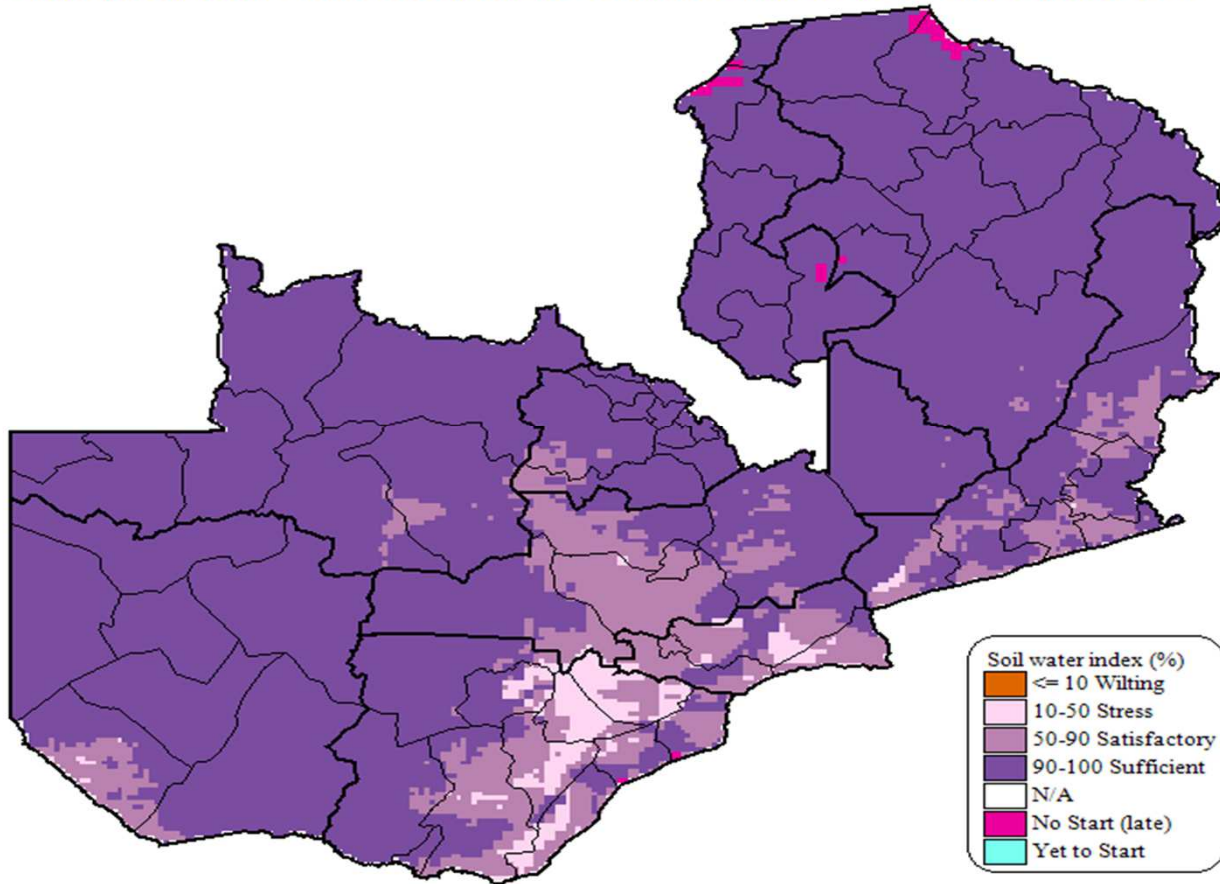
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- ❑ **precipitation satellite estimates and position of intertropical convergence zone(ITCZ)**
- The product is GFS Model



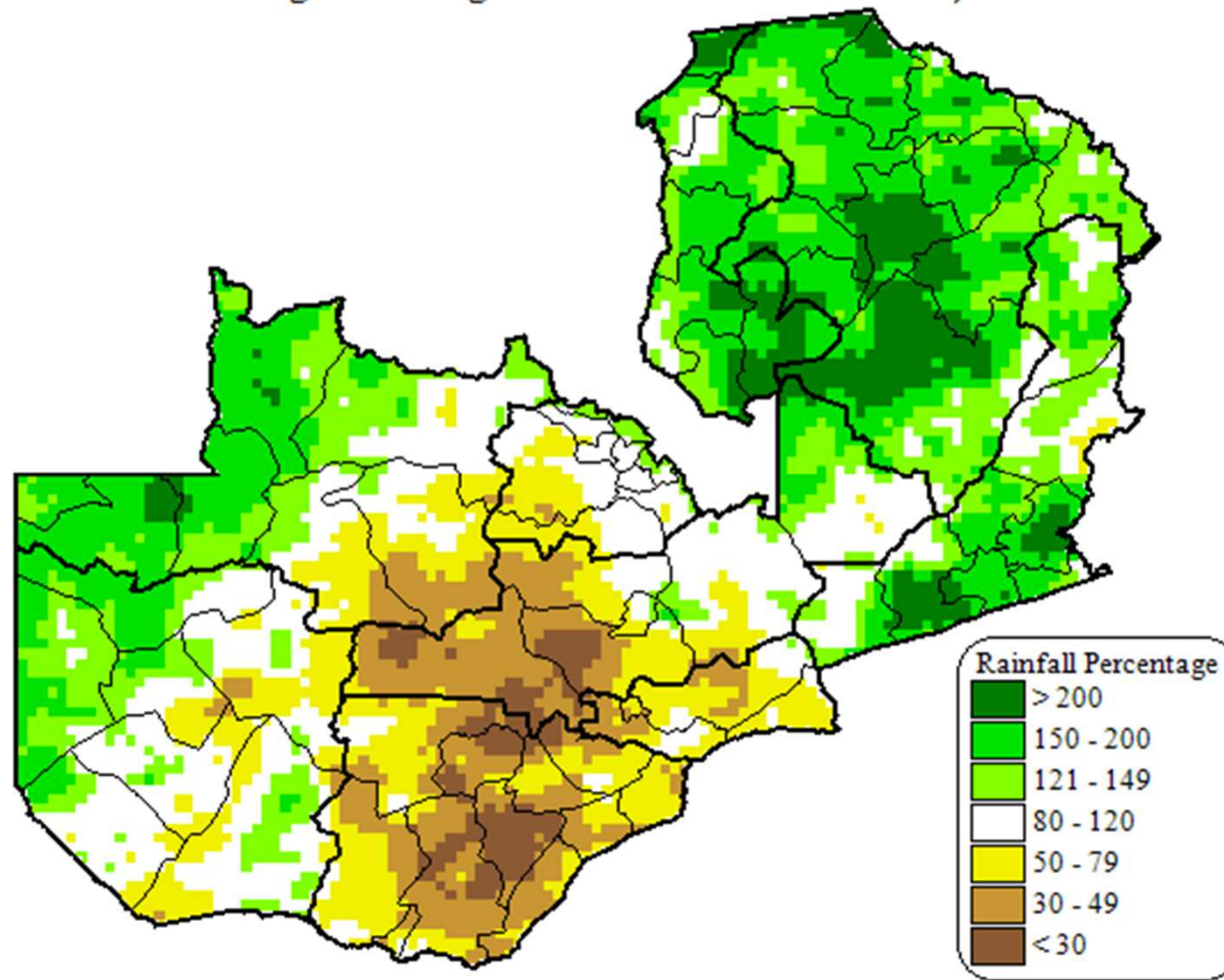
- The validation of satellite and station data for the period under review indicates that there was more rainfall over the northern and eastern parts of Zambia as compared to much of the southern parts of the country. Much of southern Province received amounts well below 10mm

Zambia Soil Water Index for maize in 2013/2014 season as at 20th March, 2014



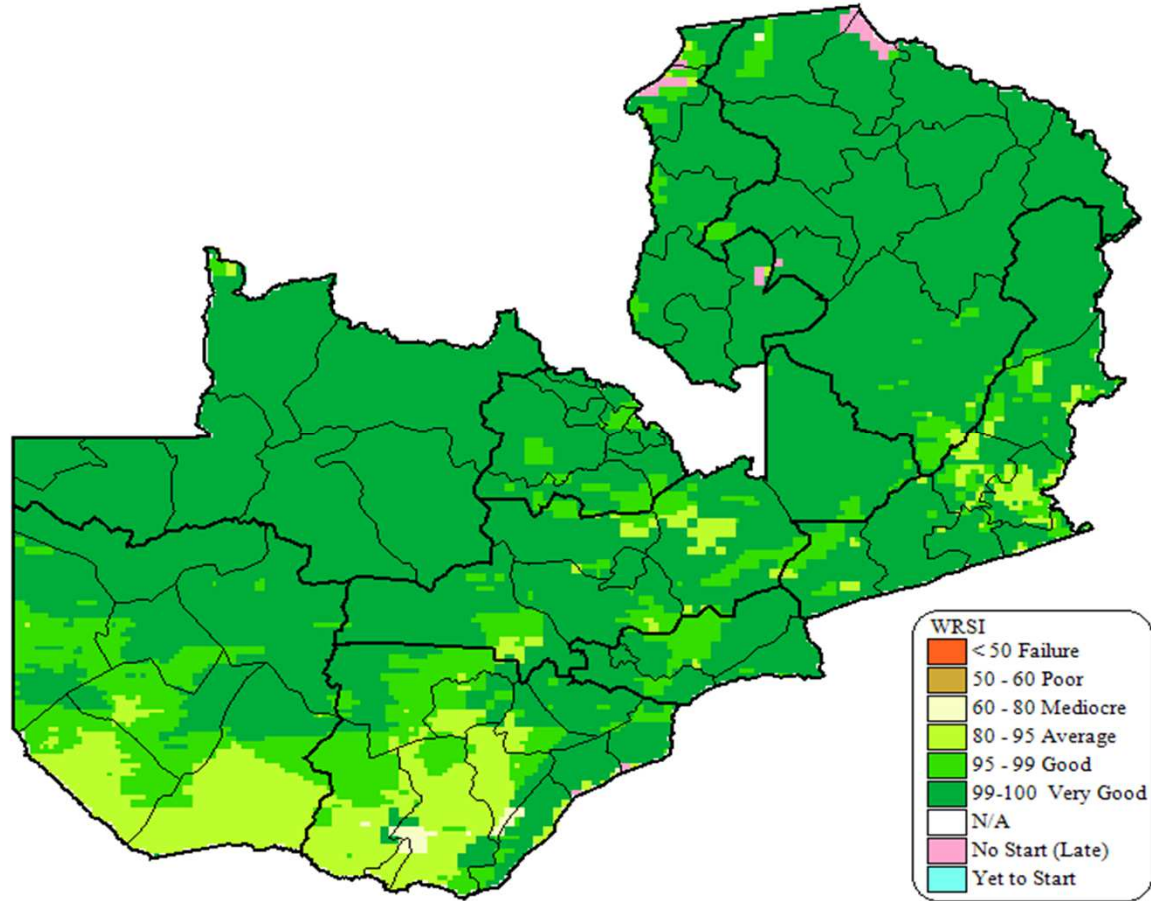
On analysis of the Soil Water Index for maize, it is evident that the southern Province received very little rainfall during the dekad which has led to a further deterioration in the soil moisture. Indications of moisture stress have been observed especially over Mazabuka, Monze, Choma and Sinazongwe.

Zambia Percentage of Average Rainfall For 11 - 20th March, 2014



average rainfall achieved for the dekad, it is evident that less than 30% of the average has been achieved over Southern Province. However, for much of Luapula, Northern, Muchinga, Eastern and northwestern provinces, more than 100% of the average has been achieved.

Zambia WRSI for maize in 2013/14 season, as at 20th March, 2014



WRSI for maize (a crop performance indicator depicting the percentage to which crops water requirements have been met) is generally very good over most parts of Zambia except the Southern parts and few areas over Eastern province where it is average

Future plans

- ❖ **A Statement Reference made by the Director of Zambia meteorological department is**
 - acquiring radar systems for detecting storms in the country. The new c band radar system
 - acquiring lightening detecting equipment to be installed at various location

Thank You



You Made My Day