**Glossary:**

**Arid:** (of land or a climate) Having little or no rain; too dry or barren to support vegetation.

**Climatological Anomaly:** Climatology is commonly known as the study of our climate, yet the term encompasses many other important definitions. Climatology is also defined as the long-term average of a given variable, often over time periods of 20-30 years. Climatologies are frequently employed in the atmospheric sciences, and may be computed for a variety of time ranges.

A monthly climatology, for example, will produce a mean value for each month and a daily climatology will produce a mean value for each day, over a specified time range. Anomalies, or the deviation from the mean, are created by subtracting climatological values from observed data.

When seasonal variations are present within a set of data, it often helps to express the data in terms of standardized anomalies. Standardized anomalies, also referred to as normalized anomalies, are calculated by dividing anomalies by the climatological standard deviation. They generally provide more information about the magnitude of the anomalies because influences of dispersion have been removed. It is not necessary that a dataset have a particular distribution to express it in terms of standardized anomalies.

**CMORPH:** Climate Prediction Center Morphing Technique (CMORPH) produces global precipitation analyses at very high spatial and temporal resolution. This technique uses precipitation estimates that have been derived from low orbiter satellite microwave observations *exclusively*, and whose features are transported via spatial propagation information that is obtained entirely from geostationary satellite IR data.

**Drought:** A drought is a period of below-average precipitation in a given region, resulting in prolonged shortages in its water supply, whether atmospheric, surface or ground water. A drought can last for months or years, or may be declared after as few as 15 days.

**Humid:** Containing a high amount of water or water vapor; noticeably moist.

**LST:** Land surface temperature (LST) is how hot the “surface” of the Earth would feel to the touch in a particular location. From a satellite’s point of view, the “surface” is whatever it sees when it looks through the atmosphere to the ground. It could be snow and ice, the grass on a lawn, the roof of a building, or the leaves in the canopy of a forest. Thus, land surface temperature is not the same as the air temperature that is included in the daily weather report.

**MODIS:** MODIS (or Moderate Resolution Imaging Spectroradiometer) is a key instrument aboard the Terra (originally known as EOS AM-1) and Aqua (originally known as EOS PM-1) satellites. Terra's orbit around the Earth is timed so that it passes from north to south across the equator in the morning, while Aqua passes south to north over the equator in the afternoon. Terra MODIS and Aqua MODIS are viewing the entire Earth's surface every 1 to 2 days, acquiring data in 36 spectral bands, or groups of wavelengths.

**NDWI:** Normalized Difference Water Index (NDWI) is a remote sensing based spectral rationing technique which will help to monitor changes in water content of leaves using NIR (Near Infrared) and SWIF (Short Wave Infrared) calculated as: (SWIR – NIR)/(SWIR + NIR).

**Ternary Diagram:** Also called a ternary plot, ternary graph, triangle plot, simplex plot, or de Finetti diagram is a barycentric plot on three variables which sum to a constant. It graphically depicts the ratios of the three variables as positions in an equilateral triangle.

**Water Holding Capacity:** Water holding capacity is the total amount of water a soil can hold at field capacity. Sandy soils tend to have low water storage capacity. Sub-soil constraints (acidity, hardpans etc.) can prevent crops accessing water in the subsoil.