

Since 1972, satellite remote sensing of the environment has been dominated by polar-orbiting sensors providing useful data for monitoring the earth's natural resources. However their observation and monitoring capacity are inhibited by daily to monthly looks for any given ground surface which often is obscured by frequent and persistent cloud cover creating large gaps in time series measurements. The launch of the Meteosat Second Generation (MSG) satellite into geostationary orbit has opened new opportunities for land surface monitoring. The Spinning Enhanced Visible and Infrared Imager (SEVIRI) instrument on-board MSG with an imaging capability every 15 min which is substantially greater than any temporal resolution that can be obtained from existing Polar Operational Environmental Satellite (POES) systems currently in use for environmental monitoring. Different areas of the African continent were affected by droughts and floods in 2008 caused by periods of abnormally low and high rainfall, respectively. Based on the effectiveness of monitoring these events from Earth Observation (EO) data the current analyses show that the new generation of geostationary remote sensing data can provide higher temporal resolution cloud-free (<5 days) measurements of the environment as compared to existing POES systems. SEVIRI MSG 5-day continental scale composites will enable rapid assessment of environmental conditions and improved early warning of disasters for the African continent such as flooding or droughts. The high temporal resolution geostationary data will complement existing higher spatial resolution polar-orbiting satellite data for various dynamic environmental and natural resource applications of terrestrial ecosystems.