In Eastern and Southern Africa (E&SA), over 23,000 premature deaths occur each year due to air pollution, exacerbating respiratory conditions for millions. This project, supported by the National Aeronautics and Space Administration (NASA) SERVIR, collaborates with local stakeholders to co-develop a regional air quality prediction system for the E&SA region. Addressing the challenge of limited in situ air pollution monitoring in E&SA, the project focuses on chemical data assimilation into the Weather Research and Forecasting model coupled with Chemistry (WRF-Chem). Utilizing satellite data on aerosol optical depth (AOD) and carbon monoxide (CO), along with inputs from the Global Forecast System (GFS) for meteorological forecasts, monthly estimates from CAMS for anthropogenic emission inventory, and real-time fire emissions from the Fire Inventory from NCAR (FINN), 48-hour forecasts at 15 km grid spacing will be generated.