National Aeronautics and Space Administration

Earth Observations for Humanitarian Applications

June 06, 13, & 20, 2024

10:00-11:30 or 13:00-14:30 EDT (UTC-4)

Refugees, internally displaced people (IDPs), and other displaced populations are made more vulnerable to climate change impacts due to their socio-political marginalization. This three-part training presents concrete strategies for mapping localized climate conditions with risks faced by refugee and IDP communities around the world.

The training will focus on flood risk assessments and specific challenges for assessing flood risk in refugee and IDP camps; gauging long-term heat stress in refugee camps and the challenges with decision making surrounding heat risk; and monitoring drought effects on agricultural landscapes in refugee settings using Earth observations (EO) to explore the correlations between anomalies in crop productivity and weather-based factors.

By the end of the training, participants will be able to integrate EO, building footprint and infrastructure data, and population data to quantify climate risk and development trends in specific humanitarian settings, and recognize the value and limitations of specific EO and geospatial datasets.

Part 1: Assessing Flood Risk in Refugee Camp Settings

ARSET Trainer: Sean McCartney

Guest Instructors: Mark Bernhofen (Smith School), Mark Trigg (University of Leeds), Ruby Paterson (Oxfam), & Luckson Katsi (UNHCR)

- Identify and apply open geospatial datasets (global model outputs and EO data & products) to undertake flood risk assessments for refugee camps anywhere in the world.
- Recognize specific humanitarian challenges when assessing flood risk in refugee camps

Part 2: Gauging Long-Term Heat Stress in Refugee Settings

Trainer: Sean McCartney

Guest Speaker: Andrew Zimmer (Montana State University), Jamon Van Den Hoek (Oregon State University)

- Identify and apply open geospatial datasets (global model outputs and EO data & products) to analyze long-term heat stress for refugee camps anywhere in the world.
- Summarize specific humanitarian challenges when gauging long-term heat stress in refugee camps.

Part 3: Tracking Drought Effects on Agricultural Landscapes in Refugee Settings

Trainer: Sean McCartney

Guest Speakers: Jamon Van Den Hoek (Oregon State University), Sitian Xiong (Clark University) & Lyndon Estes (Clark University)

- Identify trends and anomalies in crop productivity through EO time series analysis, utilizing open-source data and programming languages.
- Explore the relationship between crop productivity and weather-based factors.

ARSET empowers the global community through remote sensing training.