

NASA Earth Applied Sciences' Capacity Building Program

NASA satellite and airborne missions are continuously collecting information about the Earth's ocean, atmosphere, and land surfaces to support informed decisions and policies. This data is freely available to the public through NASA's Distributed Active Archive Centers (DAACs) and can be found at earthdata.nasa.gov. These Earth observations help to monitor and forecast important parameters related to water resources, disasters, ecological forecasting, agriculture & food security, health & air quality, urban development, transportation & infrastructure, and energy.

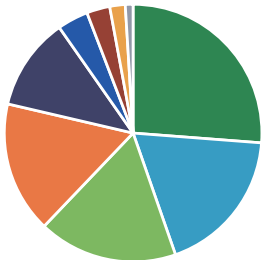
The availability and volume of Earth observation data are continuously increasing, as are the many applications of these measurements. To meet the growing demand for opportunities to develop skills in the use and application of geospatial data and scientific information for societal good, NASA Earth Applied Sciences' Capacity Building Program engages individuals and institutions around the globe through online and in-person trainings, rapid feasibility studies, and multi-year co-development projects.

Between January and September 2019, the Capacity Building Program provided 85 in-person trainings and 11 online trainings and conducted 56 feasibility projects and 51 co-development projects. These activities reached 10,642 individuals from 3,897 institutions in 153 countries and all 50 US states.

2019

JANUARY - SEPTEMBER

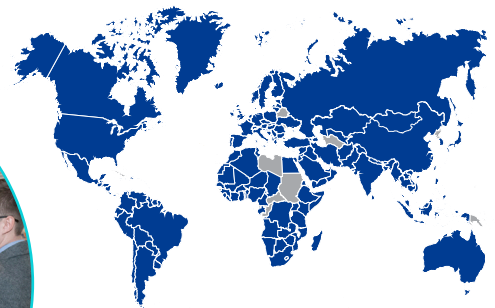
Thematic Areas Addressed



- 27% Ecological Forecasting
- 19% Water Resources
- 18% Food Security & Agriculture
- 17% Cross-Cutting
- 12% Disasters
- 4% Urban Development
- 3% Health & Air Quality
- 2% Energy
- 1% Transportation & Infrastructure



Geographic Reach



- Impact
- No Impact

153 COUNTRIES IMPACTED
50 STATES IMPACTED



10,642
Individuals



3,897
Institutions



96
Trainings



107
Projects



EARTH APPLIED SCIENCES' CAPACITY BUILDING PROGRAM

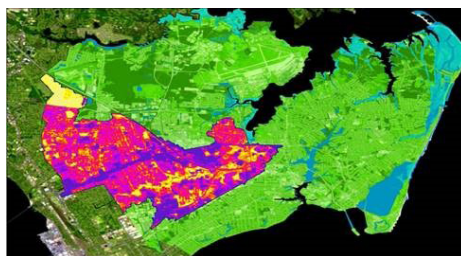
The Capacity Building Program (CBP) builds capacity around the globe in an effort to expand the Earth-observations user base and increase awareness within non-traditional audiences of NASA Earth observation data and products. CBP works through both program and element activities. Program activities include participating in domestic and international capacity building groups, such as the Group on Earth Observations (GEO) and the Committee on Earth Observation Satellites (CEOS), as well as identifying partnership opportunities to reach new end-users like the Indigenous Peoples Pilot. CBP supports three elements: Applied Remote Sensing Training (ARSET), DEVELOP, and SERVIR.

Programmatic Elements

ARSET

ARSET empowers the global community through remote-sensing trainings. Through online and in-person trainings, participants learn how to use NASA Earth data, applications, and models. Trainings are free and open to the public. To access training materials, join the distribution list, and learn about upcoming activities, visit arset.gsfc.nasa.gov.

In 2009, NASA's Applied Remote Sensing Training (ARSET) program held their first training to help people around the world gain access to NASA Earth observations. Ten years later, from "What is a satellite?" to "How do I create a flood map?" many of ARSET's trainings are designed for people with no previous experience with satellite remote sensing. With the anniversary comes a major milestone – since 2009, ARSET has had over 30,000 participants from more than 7,000 organizations and 163 countries – including every country in Latin America. So far in 2019, they've had over 10,000 trainees, ranging from government health agencies to local land managers, policymakers to non-governmental organizations (NGOs), seeking to incorporate NASA data and resources into their work.



DEVELOP

DEVELOP addresses environmental and public policy issues by conducting interdisciplinary feasibility projects that apply the lens of NASA Earth observations to community concerns. To learn more about DEVELOP, view previous projects, apply to an upcoming term, or propose a project idea, visit develop.larc.nasa.gov.

A recent DEVELOP feasibility study partnered with the City of Hampton to investigate the application of Earth observations for monitoring tree canopy and identifying optimal locations for tree plantings to help mitigate stormwater runoff. Hampton, Virginia's 1.6 million residents – as well as several key federal and military facilities – face an increasing flood and water quality risk due to urbanization, a changing climate, and sea-level rise. City planners have identified the Hampton area as an urgent location for resiliency projects to mitigate flooding and sea level rise – a long term goal for the city. The DEVELOP team used Landsat 5 Thematic Mapper and Landsat 8 Operational Land Imager to create maps of impervious surface and tree canopy cover change, and left city officials with the capability to update these maps themselves any time new imagery becomes available.

SERVIR

SERVIR, a joint development initiative of NASA and the US Agency for International Development (USAID), works in partnership with leading regional organizations around the globe to help developing countries apply Earth observations and geospatial technologies for environmental management. For more information about SERVIR and its network of regional hubs, visit servirglobal.net.

A recent collaboration between SERVIR Eastern and Southern Africa and SERVIR Applied Sciences Team members developed Landsat-based crop maps and sampling frames to enable the Kenyan Crop Insurance program to cover the country. These techniques have reduced costs for the Kenyan Crop Insurance Program by 70% and facilitated the expansion of the program from 900 people in 2015 to 425,000 people. During a 2019 drought event, over 12,000 farmers benefited from this safety net.

