



LEARNING ACTIVITY:

Monitoring Sustainability: Land Cover Data

GRADES 6–12

MATERIALS

- Computer with internet access
- Phone or tablet with internet access

Almost every aspect of life—our homes, food and water sources, and outdoor activities—is connected to the land on which we live. Landsat satellites collect images of Earth’s surface but cannot zoom in enough to monitor small-scale changes. The Global Learning and Observations to Benefit the Environment (GLOBE) program has created an app so you can help fill in the gaps in the global dataset. This data can help countries and stakeholders ensure that intervention and mitigation efforts align with the achievement of the UN’s Sustainable Development Goals’ (SDGs). Monitoring land cover specifically helps address indicators under SDG 15: Life on Land. The Earth Observations for the Sustainable Development Goals (EO4SDG) Initiative highlights uses of satellite and geospatial data that help calculate SDG progress. SDG 15 has been a primary focus for EO4SDG because of the variety of existing data and tools which help monitor and protect land ecosystems.

PROCEDURE

- 1 Download the GLOBE Observer app and learn more about monitoring land cover at: <https://bit.ly/GLOBE-land-cover>.
 - a. Watch this video tutorial on the GLOBE Observer Land Cover tool: <https://bit.ly/GLOBE-land-tutorial>.
 - b. Locate an area to take land cover data and stand at the center of it.
 - c. Take a land cover observation by recording surface conditions and pictures in the GLOBE Observer app.
 - d. Collect land cover data at your site each season or more frequently depending upon changes that may be happening there.
- 2 To see how concerns related to land cover changes are monitored, visit the Sustainable Development Report at: <https://dashboards.sdindex.org/map>.
 - a. Study the legend to see the overall progress toward all SDGs.
 - b. Click on the tile for SDG 15 at the bottom of the screen and notice how the map changes.
 - c. Study the legend and analyze the map to determine global progress toward achieving SDG 15.
 - d. On the left side of the screen, read the specific Indicators (sub-goals) for SDG 15.
 - e. Click on countries of interest for more information on their given ratings.
 - f. Click on each Indicator to see the level of performance toward it.

ANALYSIS

- 1 What other data might you collect or analyze to study factors that influence changes in land cover and/or how changes in land cover affect the environment or human life?
- 2 How does land cover data collected on the GLOBE Observer app relate to SDG 15’s



Credit: The GLOBE Program

- Indicators? What other data could be collected to monitor progress on SDG 15?
- 3 Explore the performance of other SDGs.
 - a. How does progress toward SDG 15 compare to the other SDG progress?
 - b. Choose a goal that interests you. What data could you collect or look for to help monitor progress toward this goal?

FURTHER STEPS

Explore national data at the USGS National Land Cover Database: <https://www.usgs.gov/centers/eros/science/national-land-cover-database>.

NGSS CONNECTIONS

SEP: Analyzing and Interpreting Data
DCI: ESS3.C: Human Impacts on Earth Systems
CCC: Cause and Effect; Stability and Change

SDG CONNECTIONS

15: Life on Land
17: Partnerships for the Goals



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EARTH OBSERVATIONS FOR THE
SUSTAINABLE DEVELOPMENT GOALS

Source: Earth Science Information Partners Education Committee based on material from the Institute for Global Environmental Strategies and Earth Observations for the Sustainable Development Goals.

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