Exploring space technologies for sustainable development and the benefits of international research collaboration
Advancing justice in Earth’s complex systems using designs enabled by space
Six space technologies currently support the Sustainable Development Goals:

- Satellite Earth Observation
- Satellite Positioning & Navigation
- Human Space Flight & Microgravity Research
- Satellite Communication
- Space Technology Transfer
- Research Infrastructure
Space Enabled employs six research methods in support of the Sustainable Development Goals.

- Design
- Art
- Social Science
- Complex Systems Modeling
- Satellite Engineering
- Data Science
Space Enabled applies the six space technologies in collaboration with development organizations at four levels:

1. International Development Organizations
2. National and Local Governments
3. Universities and Non-Governmental Organizations
4. Entrepreneurial companies
Cotonou
City in Benin

Cotonou is a large port city on the south coast of Benin, in West Africa. At the eastern end of central Boulevard St. Michel is the huge Dantokpa Market.
A Flower Against Pollution
How we are collaborating with Green Keeper Africa to monitor an invasive plant that is used to clean oil-based waste

Green Keeper Africa
Green Keeper Africa is an entrepreneurial company based in Cotonou, Benin. They pay local community members to harvest the invasive water hyacinth plant and convert it into kits that absorb oil pollution caused by industry. Their work improves the environment and creates a new eco-friendly source of income. Green Keeper Africa has invited Space Enabled to work together to create an Observation System for Invasive Plants to monitor the water hyacinth and its impact on the community.

Satellite Earth Observation
Space Enabled is working with Green Keeper Africa to use imagery and measurements from earth observation satellites to monitor the water hyacinth. We are combining information from government and commercial satellites that show how the water hyacinth grows and drifts through rivers and lakes.

Aerial Earth Observation
Space Enabled is exploring with Green Keeper Africa how they might use cameras mounted on radio controlled planes, drones, solar air balloons or kites to track the growth of the invasive water hyacinth plant.

Measuring
The growth of the invasive water hyacinth plant is impacted by environmental factors such as the temperature, salinity and nutrient content of the water as well as local weather patterns. Space Enabled is working with Green Keeper Africa to explore how they can use sensors placed in local water ways to measure environmental changes. In the long term, these measurements may help Green Keeper Africa predict where the invasive water hyacinth plant will bloom.
What can we learn from indigenous communities about space?

Prathima Muniyappa, Danielle Wood
Exploring wax as a fuel for small satellites

Javier Stober, Juliet Wanyiri, Christine Joseph, Miles Lifson, Daniel Erkel, Danielle Wood

Space Enabled Student Research Assistants
0.6V at 120 RPM
Microgravity research after the International Space Station

Researchers say new facilities in space should be available to scientists from any country.
Thailand
United Arab Emirates