

ESA's TIGER project safeguards Earth's precious water



ESA's Sentinel-1 satellite is part of TIGER, helping to track water levels in African countries

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Many of us take having clean water for granted, but it is a precious resource that can sometimes be in short supply. We need water to drink, stay clean, grow crops, farm animals, and to keep ourselves and our environment healthy. Unfortunately, some water supplies are being used too quickly, while others are being polluted. ESA is determined to use its satellite technology and a project called TIGER to help!

One of the biggest challenges faced by people is the need for freshwater (not salty water from oceans) for farming. In fact, 70% of the freshwater we use is needed to grow food. As the human population on Earth is increasing, there are more people to feed, making it very important that we face this problem. If we do not, people will go hungry. This is a particular problem for African countries due to hot temperatures, climate change, and quickly rising populations.



See how water levels in the Theewaterskloof Dam changed over a year. Copyright: contains modified Copernicus Sentinel data (2017–18), processed by ESA, CC BY-SA 3.0 IGO.

ESA satellites orbiting Earth can look down on our planet and keep track of water supplies, pollution levels, flooding, evaporation, and even moisture in the soil. ESA's TIGER project is working with African partners, and others all around the world, to give this vital information to people making decisions about water use.

For example, water has been in short supply in the Western Cape Province of South Africa. The Theewaterskloof Dam is the biggest source of water for people, farms, and animals in the area, including the city of Cape Town. Lack of water has meant that farmers have grown 36% less grain than usual, which means there is less food for people to eat. Now as part of the TIGER project, ESA satellites are monitoring the situation and helping people to manage the water supply carefully, making the best use of what there is.



See how ESA satellites help to manage precious water supplies. Copyright: EO4SD-Water consortium.

Do you have fresh, clean water whenever you need it? If so, what do you think life would be like if you did not?

Cool fact: TIGER is using the high-tech ESA satellites Sentinel-1 and Sentinel-2 to monitor water levels in African countries.