

Climate Data Records in Action: Use Cases of Earth Observation Aiding Decision-Making



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Use case objectives:

- Demonstrate the value of Climate Data Records (CDRs) for decision making, including agriculture, coastal/flood management, food security, mitigation/adaptation, disaster risk reduction, and protocol monitoring, etc.
- Optimize the use of CDRs in climate service relevant applications.
- Support capacity building by providing use cases for training activities and receiving use cases from them.
- Achieve a better understanding of the application needs.
- Provide an opportunity to examine the *Architecture for climate monitoring from space* in the reverse order to ensure the observing system is designed for purpose and is tailored for the application and decision-making needs.



Marine climate change and the impact on coastal regions

Information on sea level rise, storm surge, wind speed, wave heights derived using satellite altimetry and in-situ measurements are used to develop plan to protect coastal ecosystems and communities.



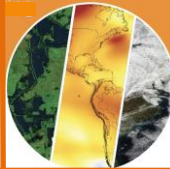
Developing a top-down carbon dioxide and methane inventory to aid the global stocktake

Comprehensive, spatially-resolved global CO₂ and CH₄ budgets are developed from space-based CO₂ and CH₄ measurements to support the global Stocktake.



Seasonal forecasts for food security analysis in Kenya

Satellite data are used for food security analysis through digital food balance sheets to inform Kenya's Ministry of Agriculture, Livestock, Fisheries, and Cooperatives to focus on areas where financial and food aid is needed.



Space-based weather and climate extremes monitoring

Satellite-based precipitation data are used to monitor heavy rainfall and drought conditions over Southeast Asia and Western Pacific area to improve preparedness for these extreme events.



We invite the Earth observation and the user communities to submit their use cases through <https://climatemonitoring.info/use-cases/> to demonstrate the value of Earth observation in climate monitoring/service, food security, agriculture, adaptation/mitigation, capacity building, etc. Please contact Wenyng.Su-1@nasa.gov if you have any questions.

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