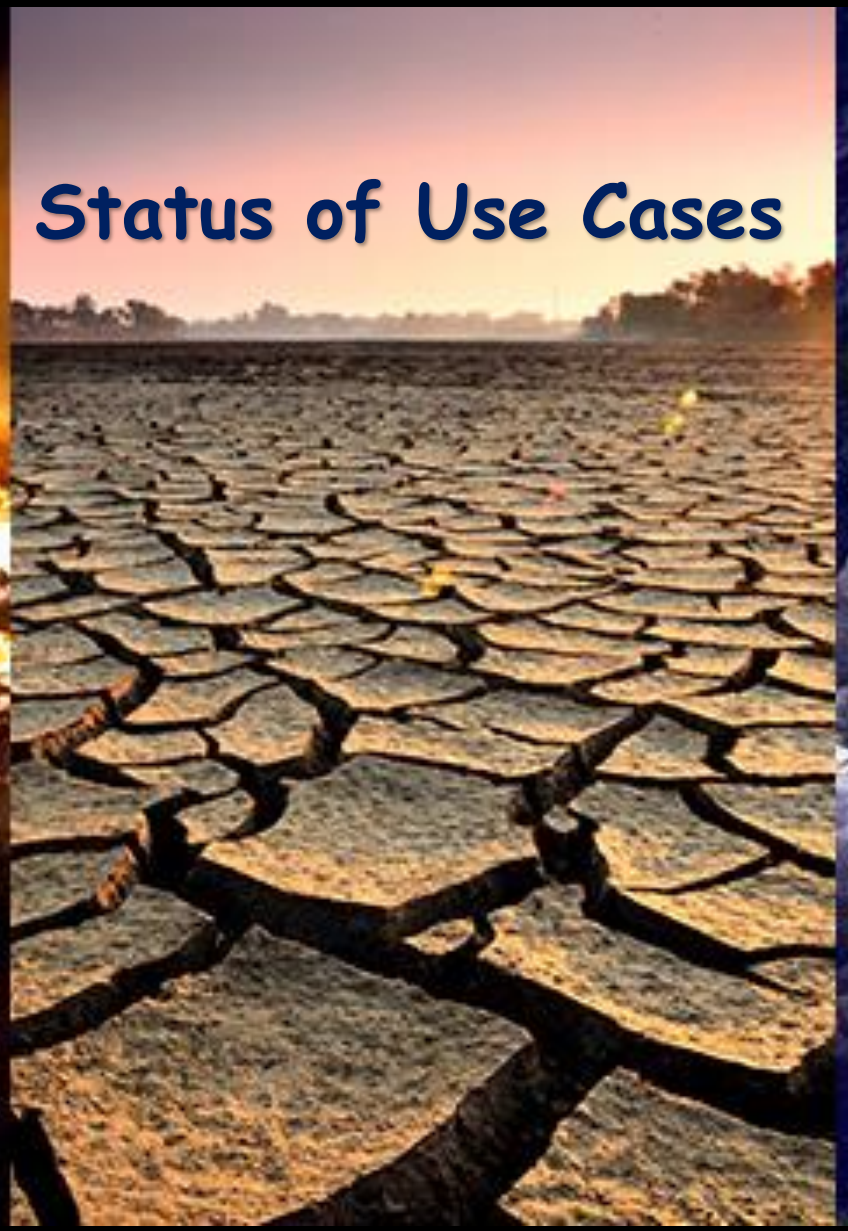
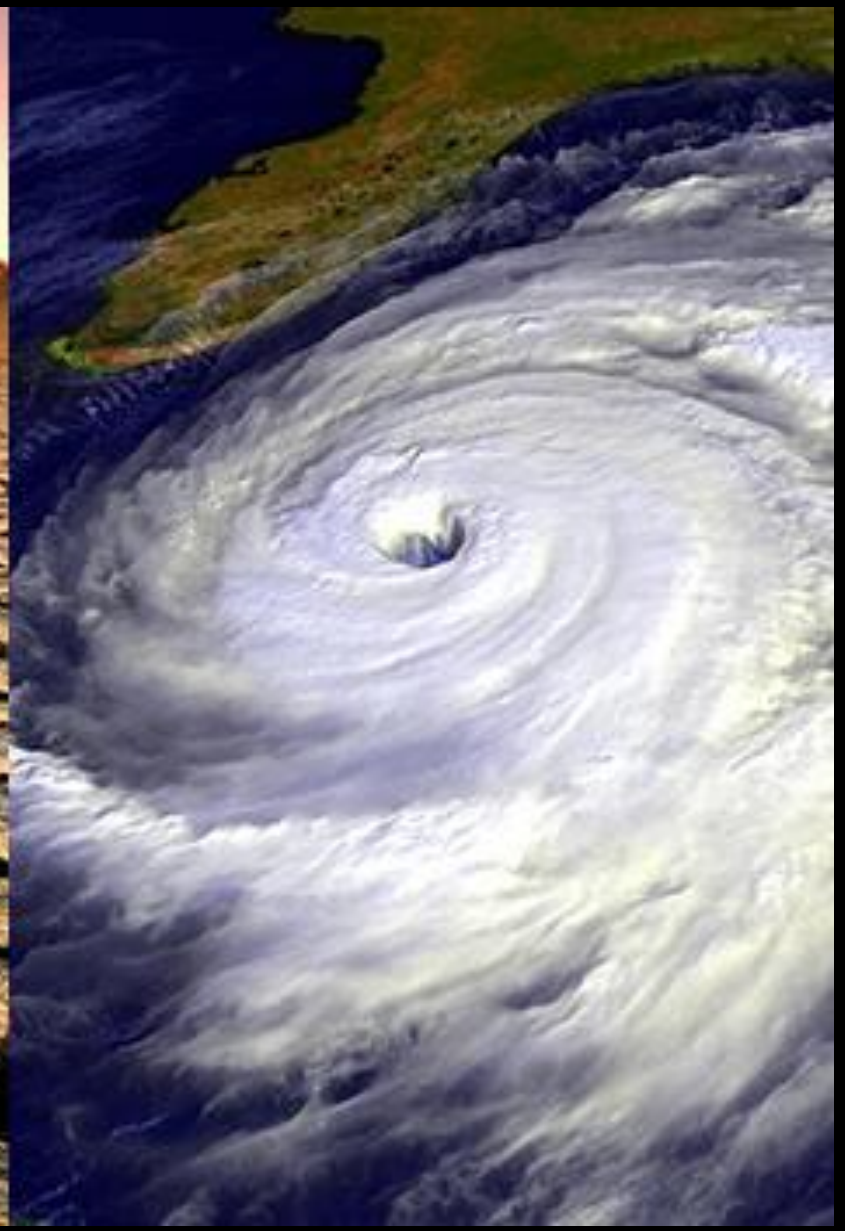
Status of Use Cases





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WGClimate #13
Oct. 14, 2020

WGClimate
The joint CEOS/CGMS Working Group on Climate

CEOS
CGMS

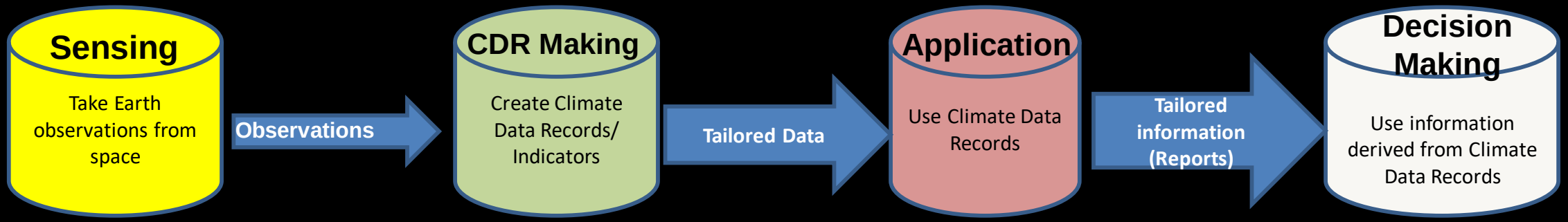
WORLD METEOROLOGICAL ORGANIZATION
WEATHER CLIMATE WATER

Use Cases for Climate Data Records

- WGClimate#12 in May 2020 decided to start a new routine activity on collecting use cases for climate data records.
- Use Case gathering tool, developed by WMO Space Programme Office, has been integrated into climate "Use Cases" web page (https://climatemonitoring.info/use-cases), which was opened on July 27, 2020 for submission with widespread distribution on social media.
- Use cases will be published on the web and selected use cases will become part of a special report issued by WMO in 2021/22.

Use Cases for Climate Data Records: Major Objectives

- Demonstrate the value of climate data records for decision/policy making, e.g., usage of satellite data in a use case with UNFCCC Parties to support the Global Stocktakes
- Understand the application needs to provide feedbacks towards quality improvements for the ECV requirements defined by GCOS
- Validate the top-down architecture for climate monitoring from space with a down-top approach ensuring traceability from usage to space-based observing system
- Optimize the use of climate data records in applications relevant for climate services and science
- Support capacity building by providing/receiving use cases for/from training activities, e.g., for developing countries (link to CGMS and CEOS capacity building activities)

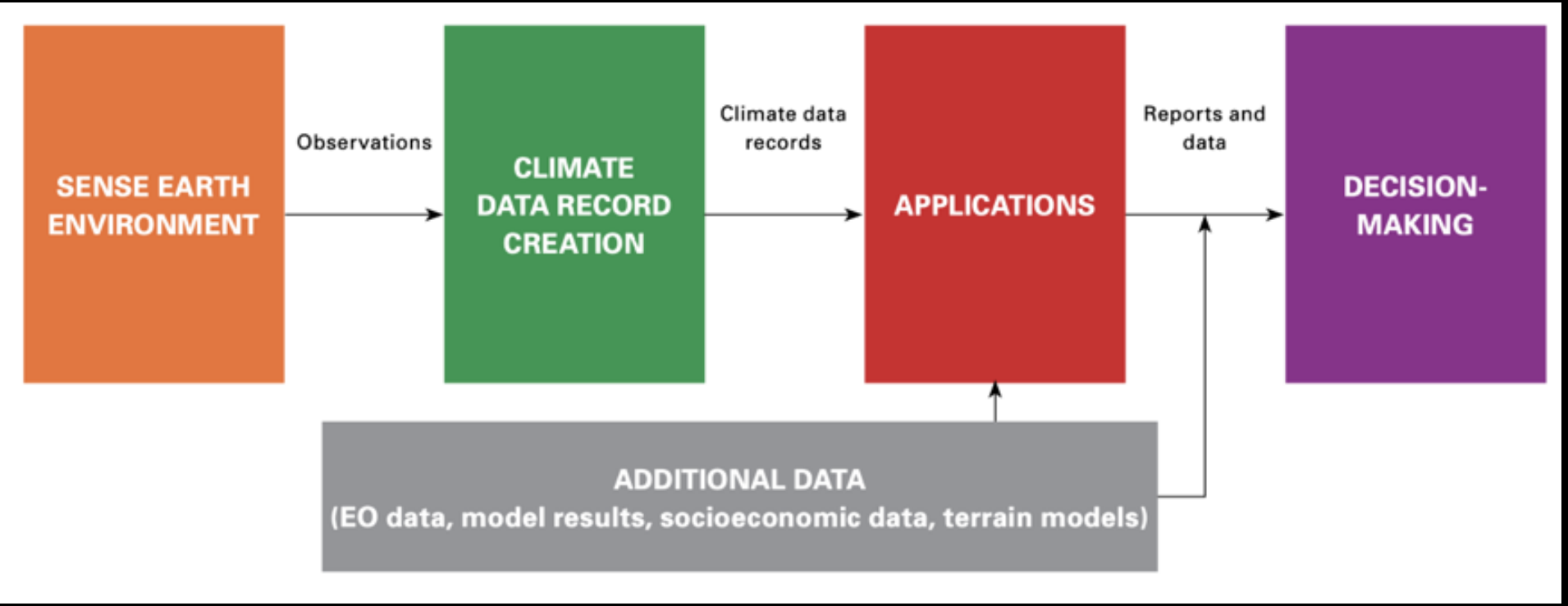


Submission of Use Case

- Organization, focal point name and email
- Title and short abstract
- Service/Thematic area(s) of the Use Case (i.e. adaptation, disaster risk reduction, food security, agriculture, coastal management, energy, adaptation, mitigation, etc.)
- End user category (i.e. government, public, researcher, policymaker, etc.)
- Intermediate users
- Use case applications
- GCOS ECVs used
- Models used
- Are the CDRs used already listed in the ECV Inventory
- CDRs used and their DOI
- Agencies/organizations produce the CDRs and the satellite obs. used
- Sustainability of the Use Case (demonstration, operational)
- Full description of the Use Case

Submission of Use Case

- Description of the four pillars defined in the Architecture for Climate monitoring from Space
- How the use case could be improved and what data/tools could help
- Four figures supporting the use case
- Additional information



Use Cases Received

- Coastal Risk Information Service (C_RISe)
  - Satellite-derived sea-level record, ocean surface wind speed/direction, currents and wave height are used to provide coastal risk information service for countries on the east coast of Africa.
  - Information on sea level rise and storm surge helps reducing the social and economic impact of coastal inundation and extreme weather through coastal zone management, infrastructure protection and development, operational planning, fishery support, etc.
- Parametric insurance for agricultural communities using weather and climate information
  - Satellite-derived precipitation, temperature, land cover, soil moisture, and leaf area index are used to provide real-time risk assessment profiles for insurance policies that are designed to protect individual farmers and agribusinesses against drought, flood, excess rainfall, heatwave, hail, cyclone, etc.
- Satellites remote sensing monitoring of the agricultural situation in the main producing region of winter wheat of China
  - Satellite-derived crop growth, snow cover, soil moisture, and land surface temperature are used to monitor wheat growing condition in China during winter

Use Cases Received

- NOAA Climate Data Record informs food security decisions to manage global famine
  - The Gridded Satellite (GridSat) B1 Climate Data Record (CDR) from NOAA provides homogenous satellite infrared brightness temperature data for the past 40 years. The data derived from meteorological geostationary satellite data is combined with in situ and model data to produce estimates of precipitation and surface temperature in data sparse regions, which help inform food security managers on the extent and severity of drought and famine.
- Alaska Disasters: Development of a Snowmelt Monitoring Tool Using NASA MODIS and NOAA Climate Data Records to Aid Wildfire Managers in Alaska
  - This project worked with the Alaska Interagency Coordination Center (AICC) and the National Weather Service Alaska Region to aid fire risk and monitoring efforts. The team also studied climatological trends in seasonal snow cover melt using NOAA's Snow Cover Extent - Climate Data Record (SCE-CDR) to provide end users with a better understanding of historic and expected changes in snowmelt, which can be correlated to wildfire probability.

Discussion

- How do we make the case ready for publication on climatemonitoring.info?
  - WGClimate review panels
  - Panel members can be WGClimate member or experts recommended by the members
  - Theme-based panels led by co-chairs
- How do we select use case for WMO publication in 2021?
  - Based on review panels' recommendation
  - Geographical representation of use cases
  - Balance among different service/thematic areas
  - Balance among different end users
- New proposals for case studies including from other CEOS WGs.
  - CEOS/CGMS agencies to communicate with their end users for inputs