18e forum international de la météo et du climat

#FIMC2021

MEDIA WORKSHOP

INTERNATIONAL COMMUNICATION ON CLIMATE CHANGE

17-18 JUNE 2021 – VIRTUAL MEETING

EVENT CO-ORGANISED WITH EUMETSAT

WORLD METEOROLOGICAL ORGANIZATION

ipcc INTERGOVERNMENTAL PANEL ON climate change

European Commission

Copernicus Europe's eyes on Earth

IMPLEMENTED BY ECMWF

Climate Change Service climate.copernicus.eu

Atmosphere Monitoring Service atmosphere.copernicus.eu

esa European Space Agency

18e forum international de la météo et du climat

FOCUS ON AFRICA
EUMETSAT and AFRICA

EUMETSAT

EUMETSAT & Africa

VINCENT GABAGLIO
INTERNATIONAL RELATIONS OFFICER

40+ YEARS OF METEOSAT

METEOSAT FIRST GENERATION

23 November
1977
Launch of
Meteosat-1

19 June
1981
Launch of
Meteosat-2

15 June
1988
Launch of
Meteosat-3

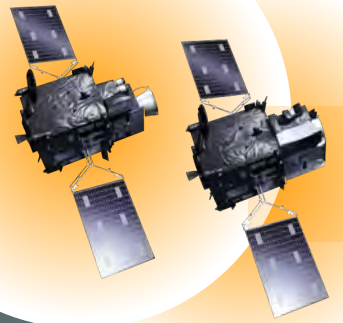
6 March
1989
Launch of
Meteosat-4

2 September
1997
Launch of
Meteosat-7

19 November
1993
Launch of
Meteosat-6

2 March
1991
Launch of
Meteosat-5

40+
Meteosat



METEOSAT THIRD GENERATION

15 July
2015
Launch of
Meteosat-11

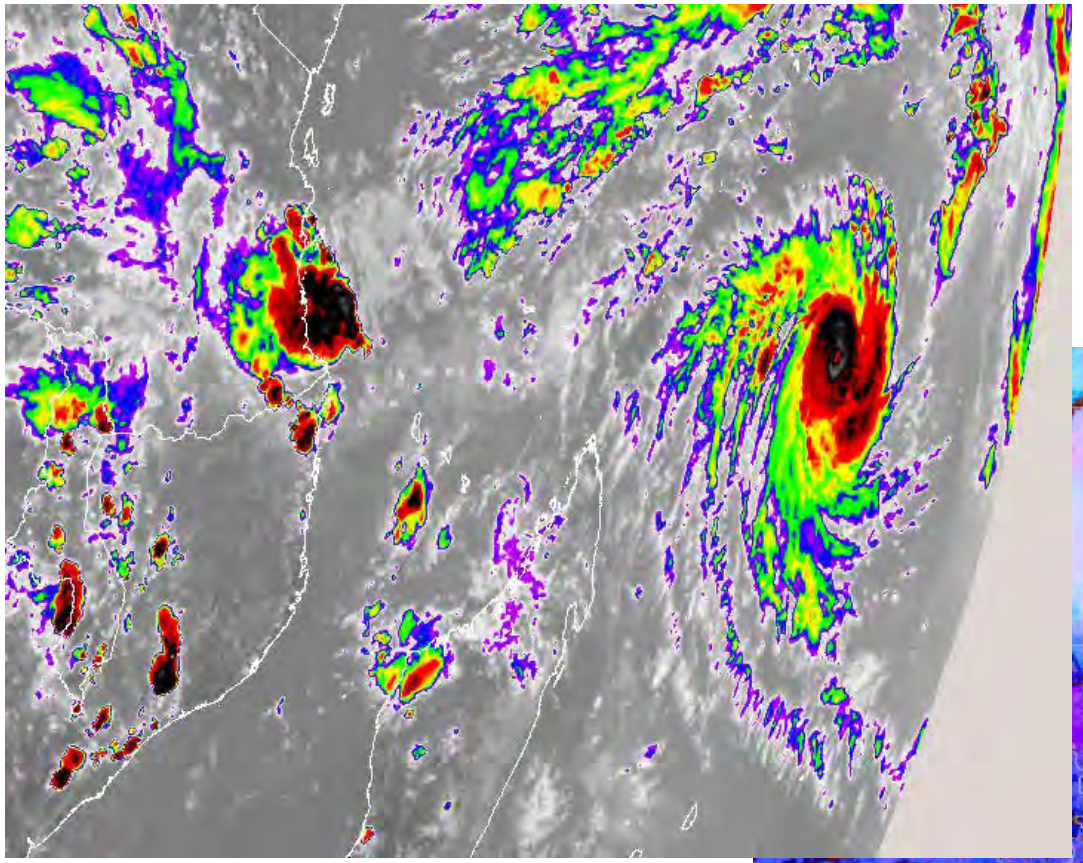
5 July
2012
Launch of
Meteosat-10

21 December
2005
Launch of
Meteosat-9

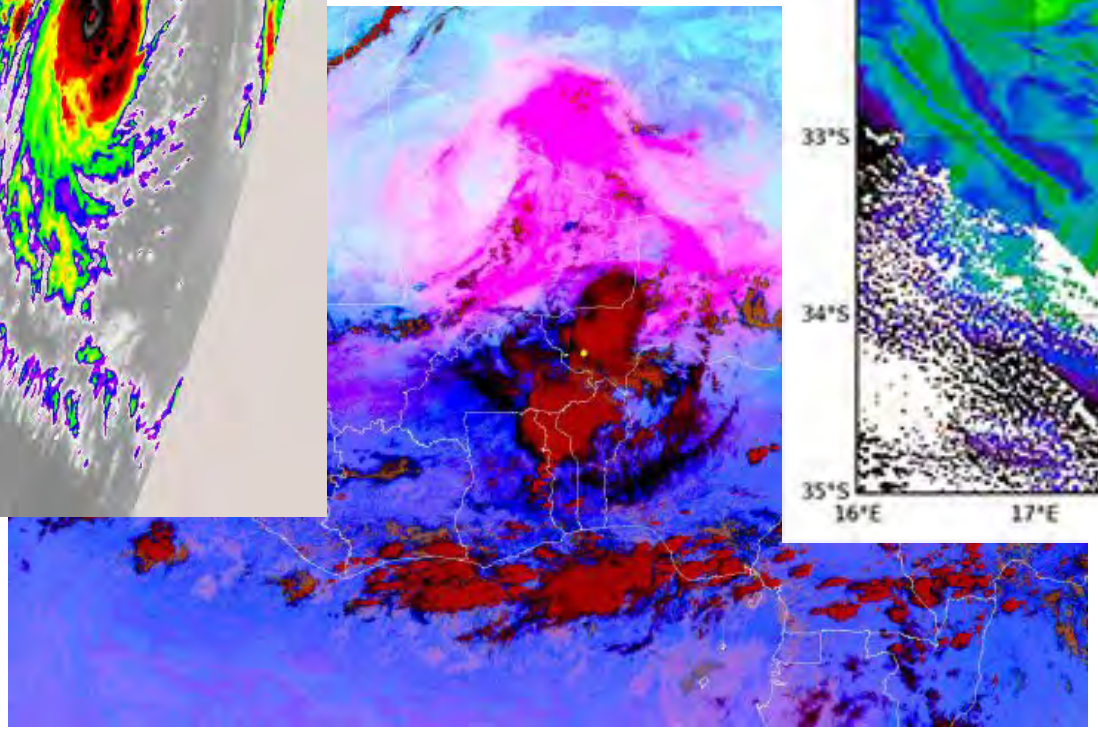
28 August
2002
Launch of
Meteosat-8

METEOSAT SECOND GENERATION

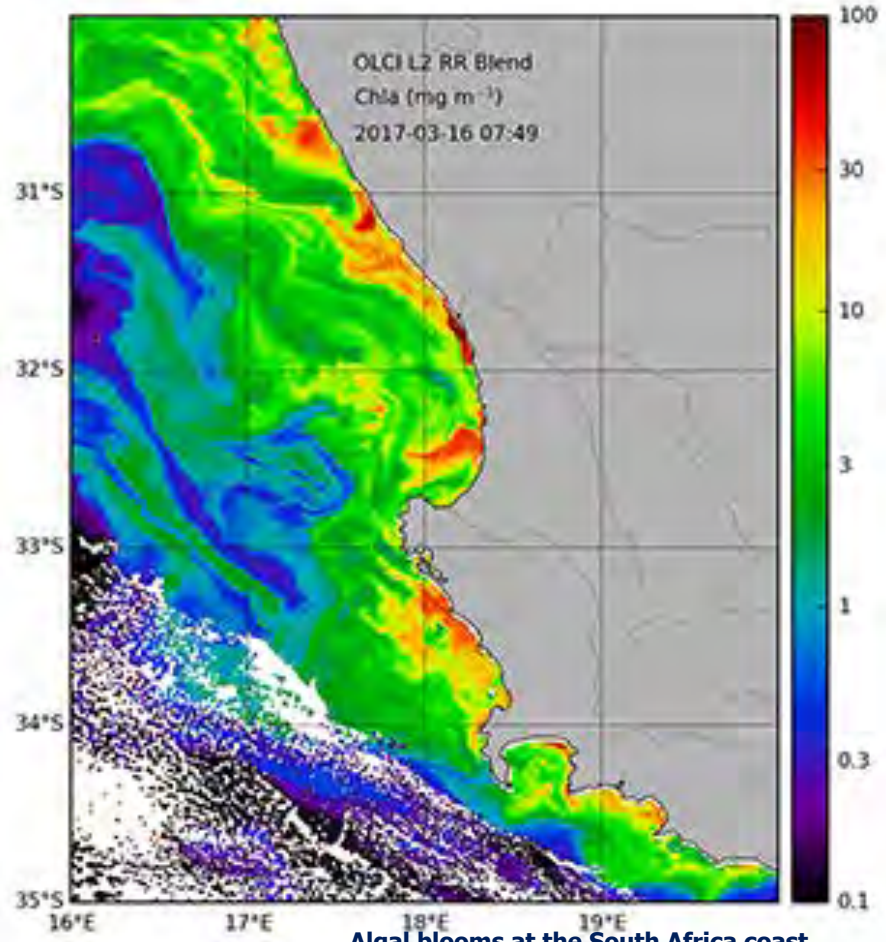
WHAT OUR SATELLITES SEE OVER AFRICA



Cyclone in the Indian Ocean



Dust storm (pink area)



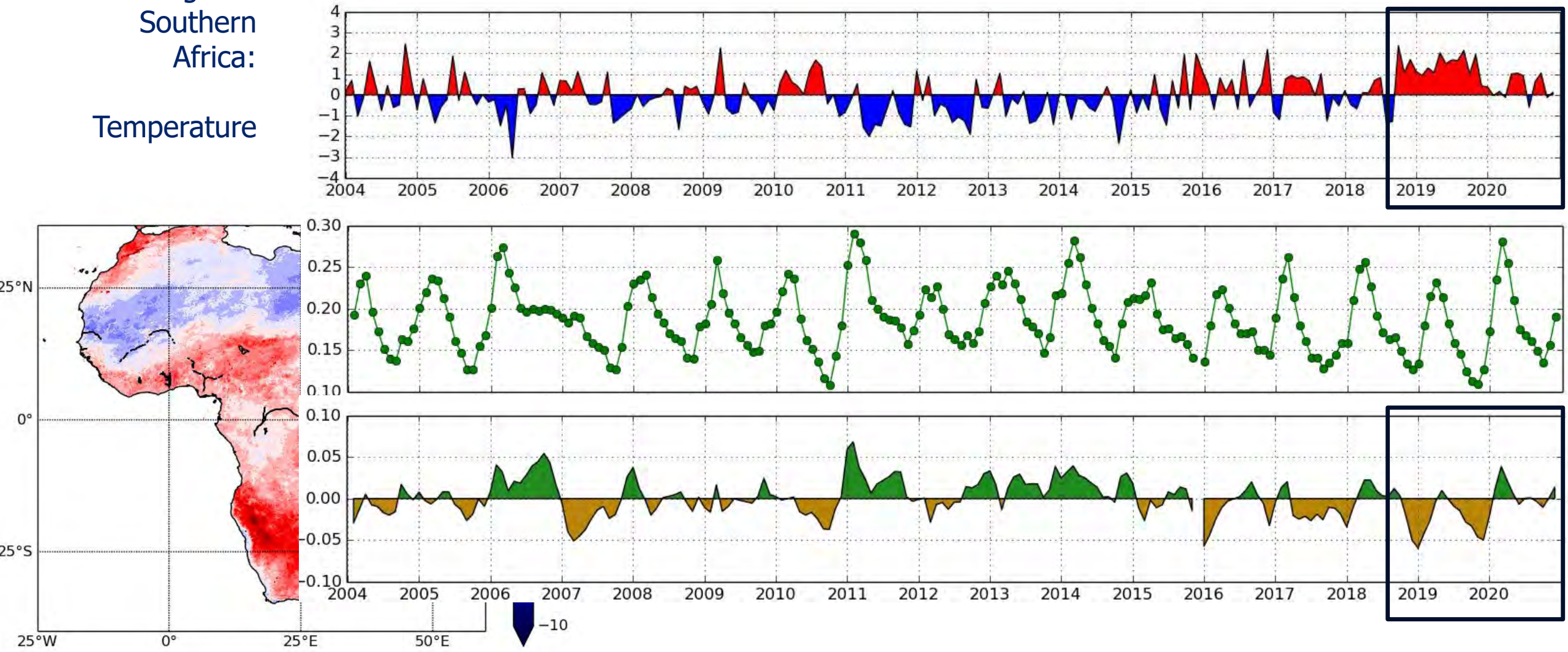
Algal blooms at the South Africa coast

EUMETSAT

WHAT OUR SATELLITE CAN SEE OVER AFRICA - CLIMATE

Zooming into Southern Africa:

Temperature



South Africa drought ~Oct 2018 - 2021

EUMETSAT

Main issues

1. How to access the data ?

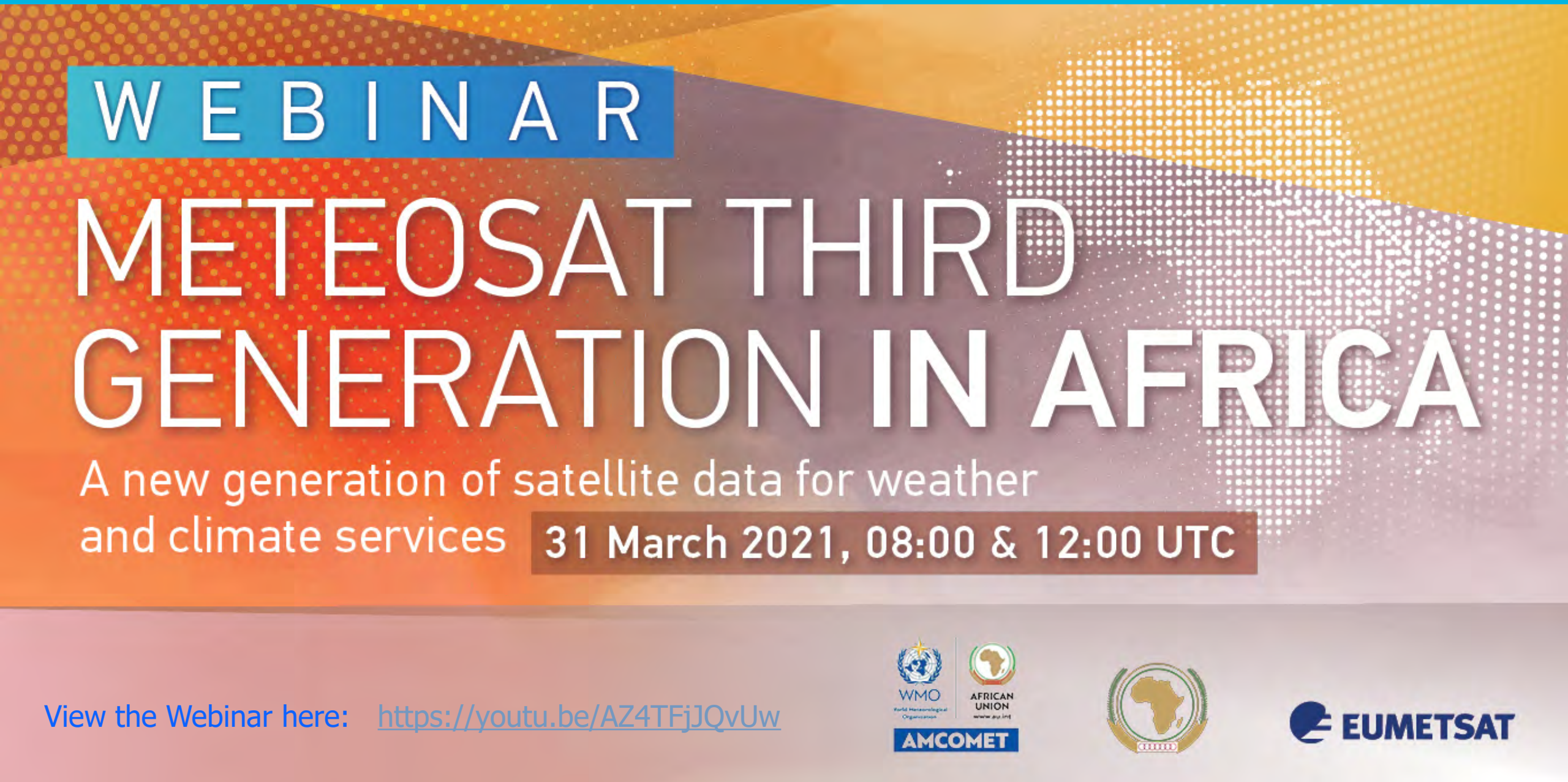
2. How to use the data ?

3. How to create
   added-value services ?

CHALLENGES

- Awareness (which data exist)
- Poor internet connectivity
- Need to receive the data in less than 5 minutes after observation

AWARENESS



View the Webinar here: https://youtu.be/AZ4TFjJQvUw

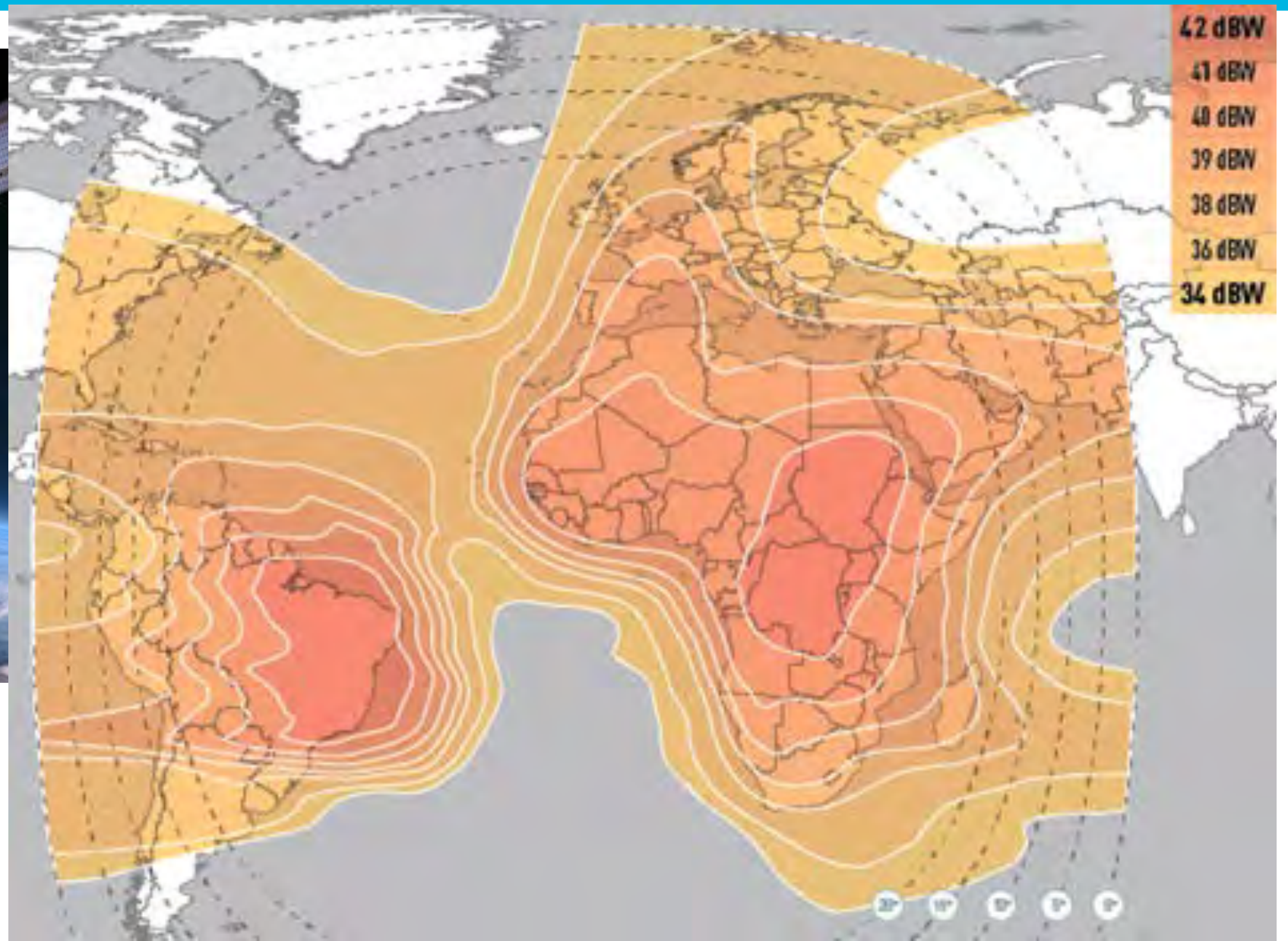
AWARENESS

WEBINAR
AFRICAN CLIMATE MONITORING FROM SPACE
7-8 JUNE 2021
08:00 -10:00 UTC
Supporting the Paris Agreement on Climate Change
ACMAD
EUMETSAT

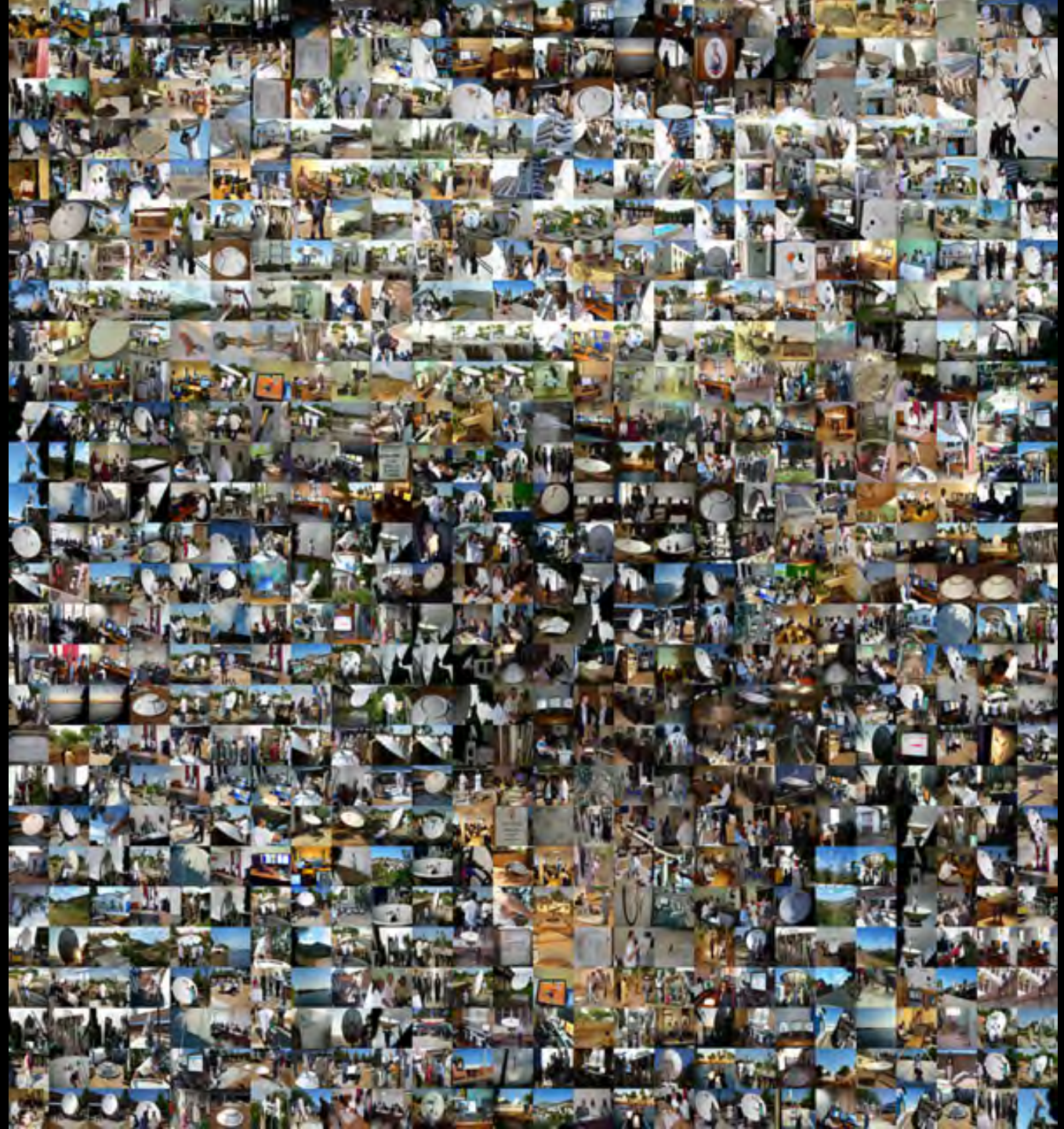
HELP DESK, USER FORUM, EXPERT GROUP

HOW TO ACCESS THE DATA ?

EUMETCAST



EUMETCAST STATION



TRAINING

HOW TO CREATE ADDED VALUE SERVICES?

PARTNERSHIP

Donor / policy

Regional priorities

Technical partners

54 NMHS

CONTRIBUTION TO EU-AFRICA PROJECTS – PAST PROJECTS

- PUMA – 2001-2006, 11M€ (8th EDF), implemented by KMD
  - 53 PUMA stations deployed at NMHS
  - 350 African NMHS technicians trained
  - Support to 6 Pilot Projects (Outlook activities) -> AMESD

- AMESD – 2007-2013, 21M€ (9th EDF), implemented by AUC
  - 110 PUMA and AMESD stations maintained and/or deployed
  - User Training (1000 experts trained)
  - Support to development of Meteorological and Environmental services

- MESA – 2013-2017, 37M€ (10th EDF), implemented by AUC
  - 180 PUMA and AMESD stations maintained and/or deployed
  - User Training (1600 experts trained)
  - Support to development of Meteorological, Environmental and Climate services

CONTRIBUTION TO EU-AFRICA PROJECTS - ON-GOING PROJECTS

- Disaster Resilience R3 - 2014-2020, 20M€ (10th EDF) implemented by AfDB (ended on 31 January 2021)
  - Access to Metop data for regional NWP
  - Support to set up of X/L band stations of RARS-Africa
  - HPC for several regional centres and support to NWP at national level

- GMES&Africa Phase I – 2017-2021, 26M€ (PANAF), by AUC
  - Maintenance of MESA stations, focus on Copernicus data
  - User Training programme
  - 12 regional grants for services implementation (Marine and Land monitoring)
- *GMES&Africa Phase II – 2022-2025, 25M€ (PANAF), by AUC*
  - *Consolidation of existing services*
  - *New aspects: digital technologies for data access and exploitation, knowledge management, private sector involvement, digital learning tool and gender sensitivity*

- Intra-ACP Climate Services – 2019-2024, 85M€ (11th EDF), implemented by ACP Sec, AUC and the regions
  - Support the upgrade of PUMA 2015 stations and new “climate stations”
  - User training and support to RCC for provision of regional services

SAND STORM: THE ISSUE

Effects of African Dust Storms on the Environment

Education by Demand Media

by Susan Revermann, Demand Media

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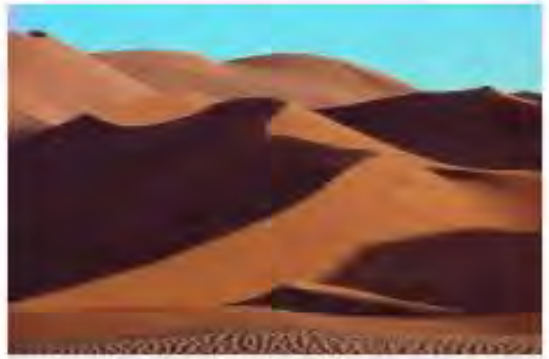


The miles of loose sand particles in the Sahara Desert are easily airborne during fierce winds.

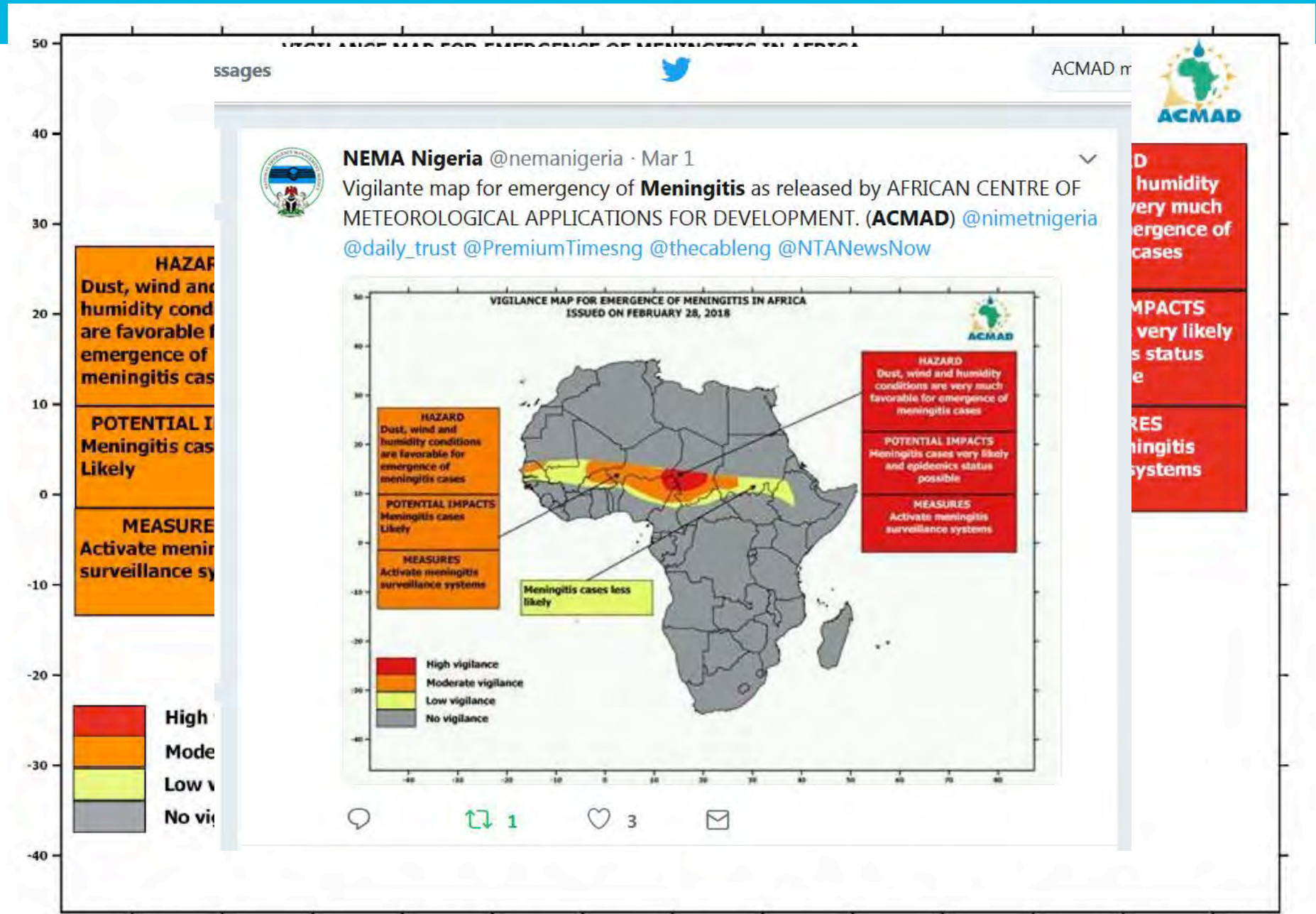
When a dust storm hits, the powerful winds loft loosely bound dust particles into the air and can transport them thousands of miles from the storm's origin. The American Society for Microbiology gives the estimated amount of displaced desert dust from dust storms on Earth as 0.5 billion to 5 billion tons annually, with the Sahara and Sahel regions of North Africa contributing 50 percent to 75 percent of that amount. This vast amount of airborne dust affects the environment in numerous ways.

Related Articles

What Molecules Can Pass Through

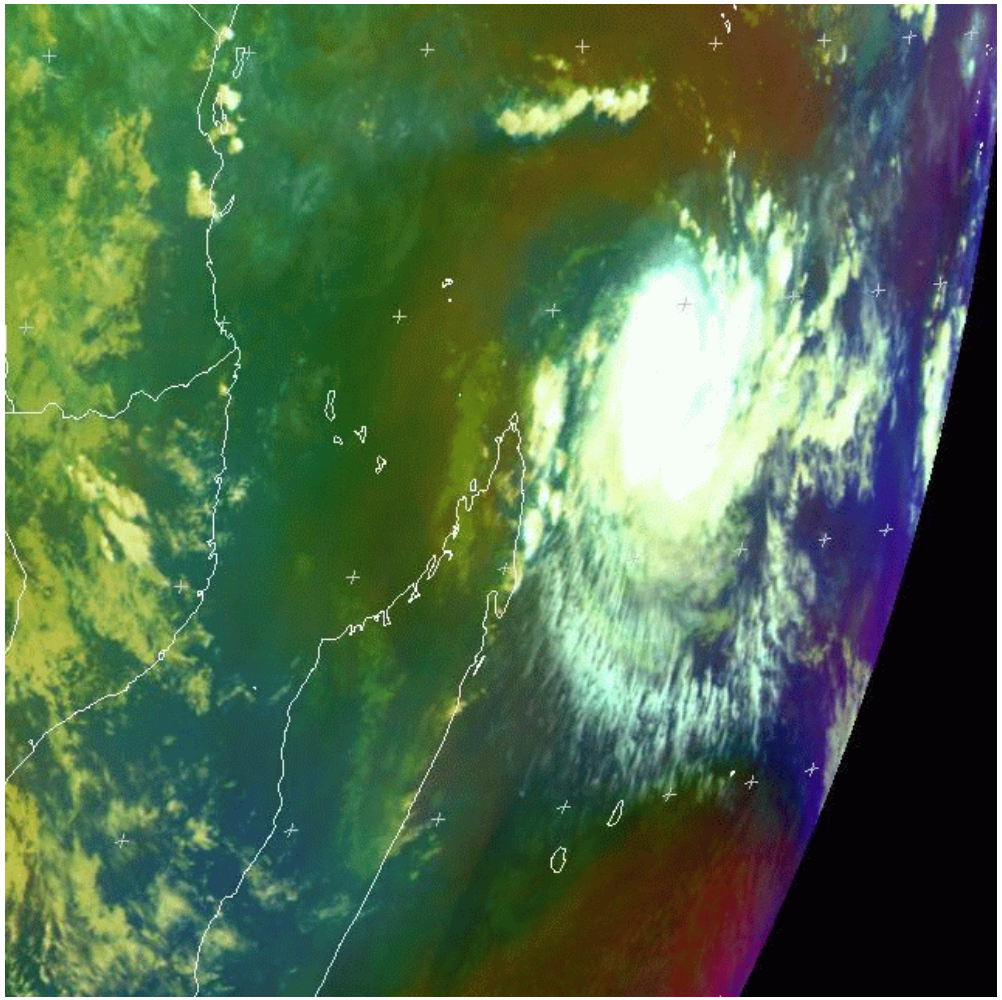
Sponsored Link

SAND STORM: THE VALUE-CHAIN

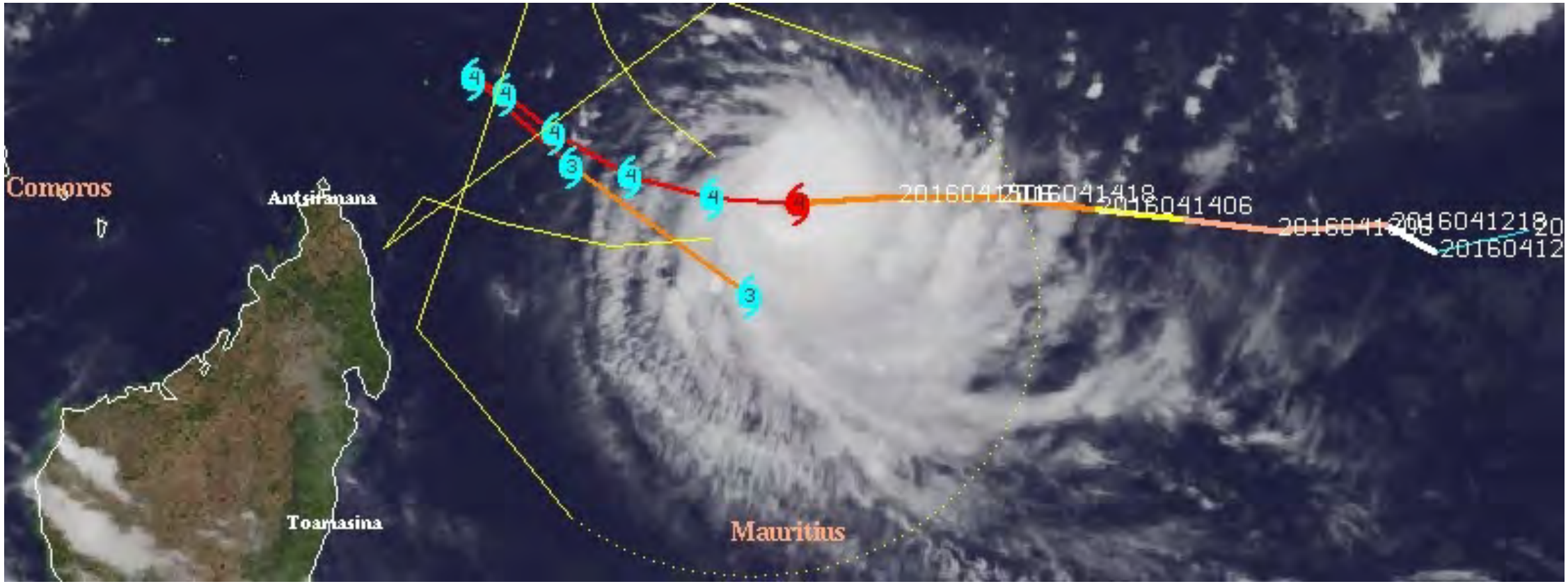


TROPICAL CYCLONE

Tropical Cyclone Fantala was a category 5 cyclone over the Indian Ocean in April 2016



FROM OBSERVATION TO FORECAST



What is a harmful

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At least fourteen dead after eating toxic fish in Madagascar

Thursday, April 7, 2011

More than 120 people remain ill from the sardines

At least fourteen people have died after eating toxic sardines in Madagascar. The deaths occurred in the town of Toliara, with another similar situation happening 130 km (80.8 mi) away in Sakaraha. The sardines the victims ate belong to the Clupeidae family. As well as the dead, around 120 people have been taken ill after eating the fish according to officials.

Dr Hery Raharisaina, Madagascar's fishing and aquatic resources minister, offered condolence to the families of the victims on behalf of the government. He added in his statement that the government would pay for the medical bills for those who are still hospitalized from the toxic fish and would also supply 100 mattresses to the city of Toliara, as the region's hospital is overcrowded.

Samples of the sardines have been sent to health officials at the Institut Pasteur de Madagascar in the capital city of Antananarivo. Incidents like this have happened before in which researchers have tracked the cause down to the fish eating poisonous seaweed. Madagascar has the third biggest coral system in the world.

Have an opinion on this story? Post it!

...ilating or even fatal.

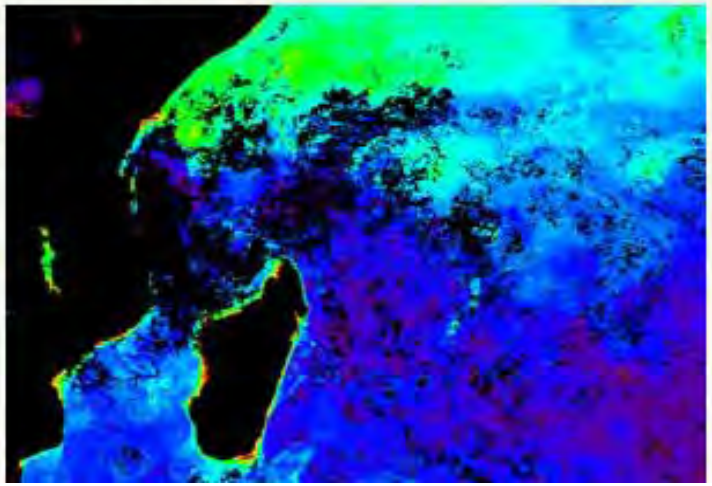
Satellite information for the surveillance and early warning of Harmful Algal Blooms (HAB) in Madagascar

Harmful Algal Blooms (HAB) is certain species of algae that form a mass occurrence and produce toxins. Toxins of HAB can kill human; cause death of fish on massive scale; contaminate seafood with toxins; and affect negatively marine ecosystems. Due to HAB three hundred people died and caused mass mortality of fish and marine life in south western Madagascar, in April 2011. It resulted in economic loss due to reduced tourism and fishing in Madagascar.

Using satellite based information, research and academic institutions in Madagascar conducted a retrospective study on the April 2011 HAB incident. The results showed that the intoxication of marine ecosystem occurred about 20 days after, favourable conditions for the HAB was observed. Based on the result of the study, Madagascar currently established a routine satellite monitoring, early warning and alert systems for the HAB.

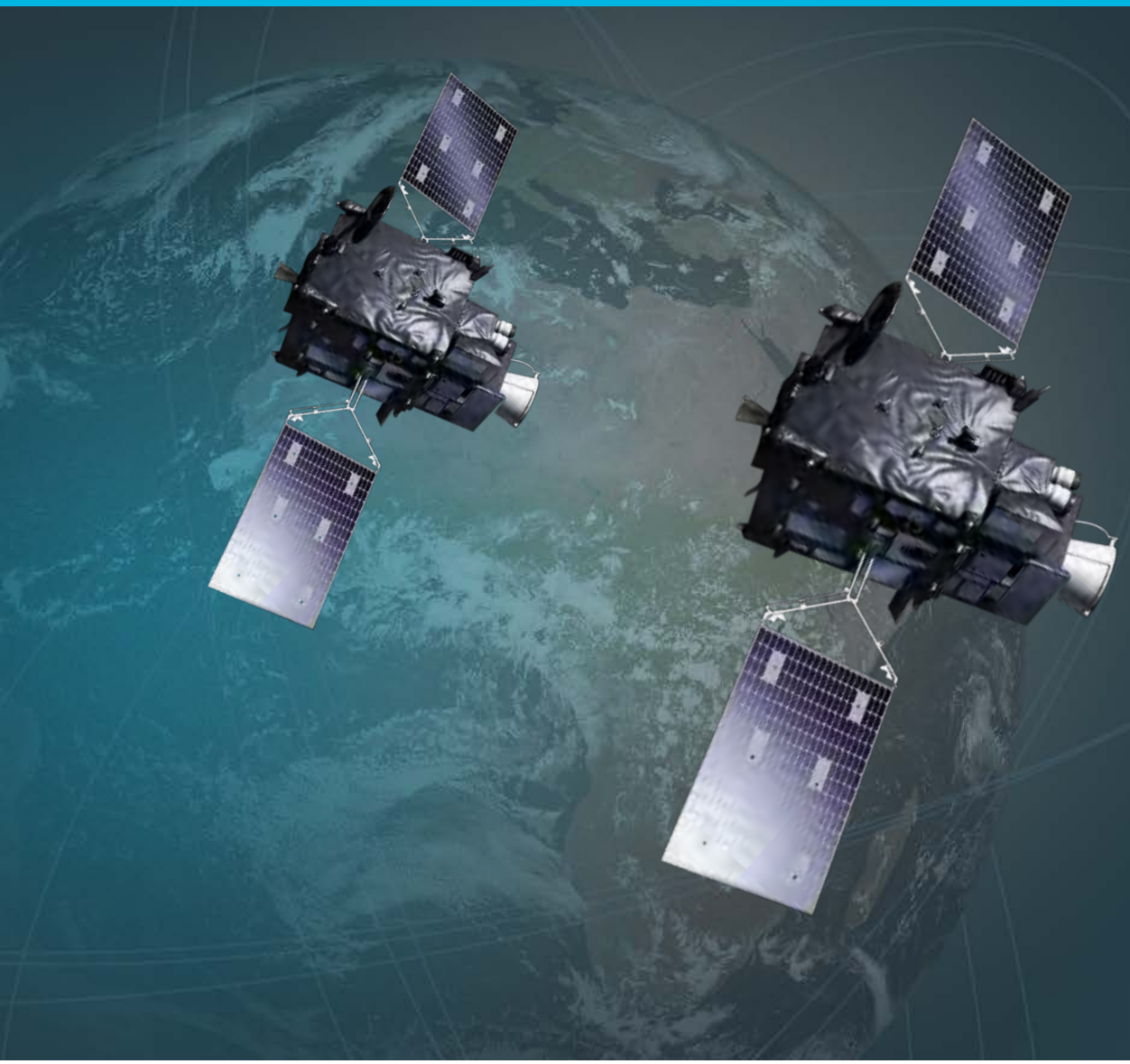
The Fisheries Institute of Marine Science of Toliara, Madagascar received an Earth Observation Station, within the framework of the AMESD Project (African Monitoring of Environment for Sustainable Development), and MESA (Monitoring for Environment and Security in Africa) Project.

The station provides high resolution satellites images in near real time basis. Madagascar is currently using derivative products of satellite information for the production of maps on Potential Fishing Zones (PFZ), as well as the monitoring, and alert system of Harmful Algal Blooms.



What’s next?

THE NEW **METEOSAT THIRD GENERATION (MTG)** IS ARRIVING



- Imagery mission implemented by two MTG-I satellites
- Flexible Combined Imager (FCI):
  - Full disc imagery every 10 minutes in 16 bands
- New Lightning Imager (LI)

- **Start of operations in 2023**
- **Operational exploitation: 2023-2042**

MTG - HIGHER RESOLUTION IMAGERY

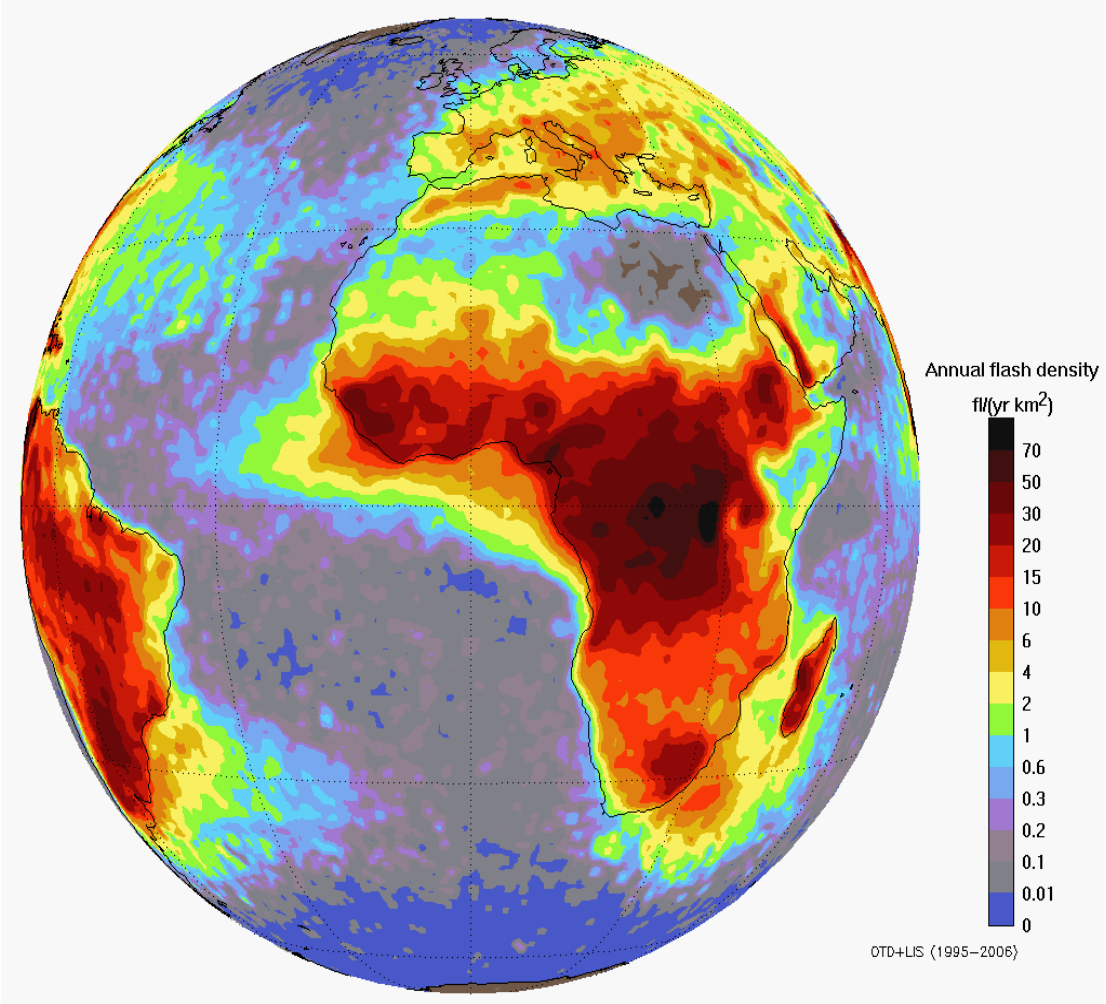
Natural colour RGB 3 km

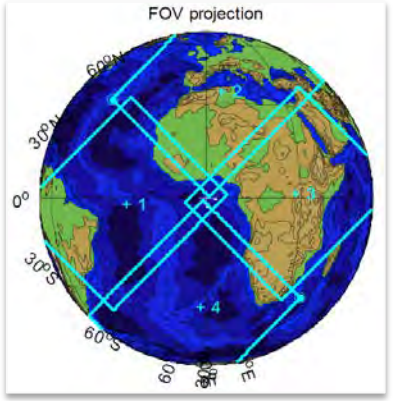
True colour RGB 1 km

Example of ash detection, SEVIRI Natural Colour RGB, 12:15 UTC, 26 November 2006 (left),
MODIS True Colour RGB, 12:20 UTC, 26 November 2006

MTG: LIGHTING IMAGING MISSION

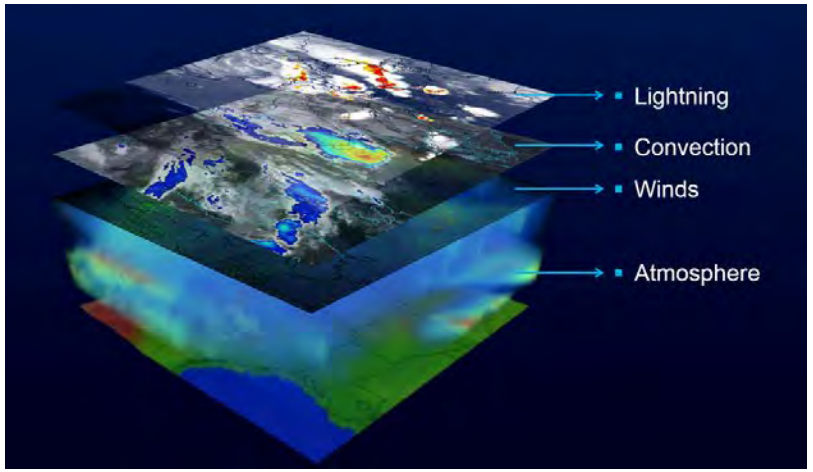
Flash density in the MTG LI field of view



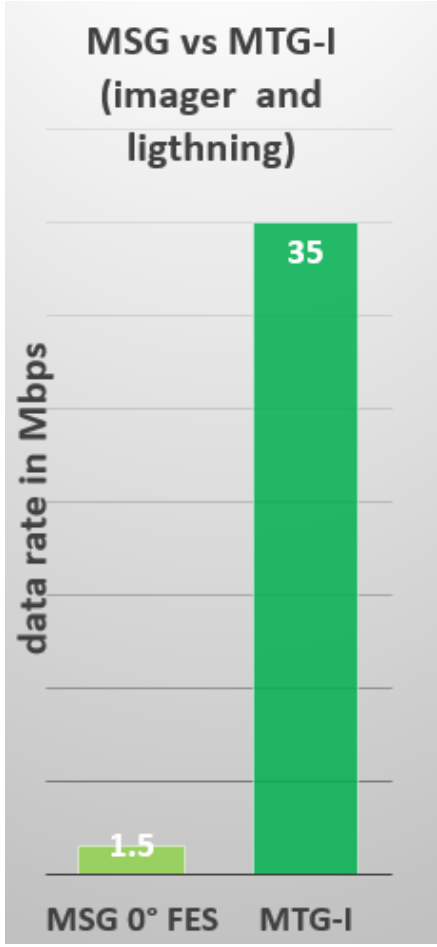


- Very high flash density over sub-Saharan Africa
- Total lightning can be a precursor of severe weather, with a lead time of tens of minutes
- MTG LI measures total lightning, whereas ground-based networks are mostly sensitive to cloud-to-ground lightning

METEOSAT THIRD GENERATION: FROM 2023 TO 2040



- Continuity with MSG
- Numerous additional capabilities:
  - Lightening imager (transport safety, etc)
  - Improved time and spatial resolution (fire, severe weather, etc)
- Discussion since 2016 with WMO RAIDEG on priorities
- Need for increased capacity in Africa (human and infrastructure)



ABIDJAN DECLARATION

- Call for strengthening of African capacities for MTG by the African Union Commission and several regional economic communities (RECs)

Thank you!
Merci!