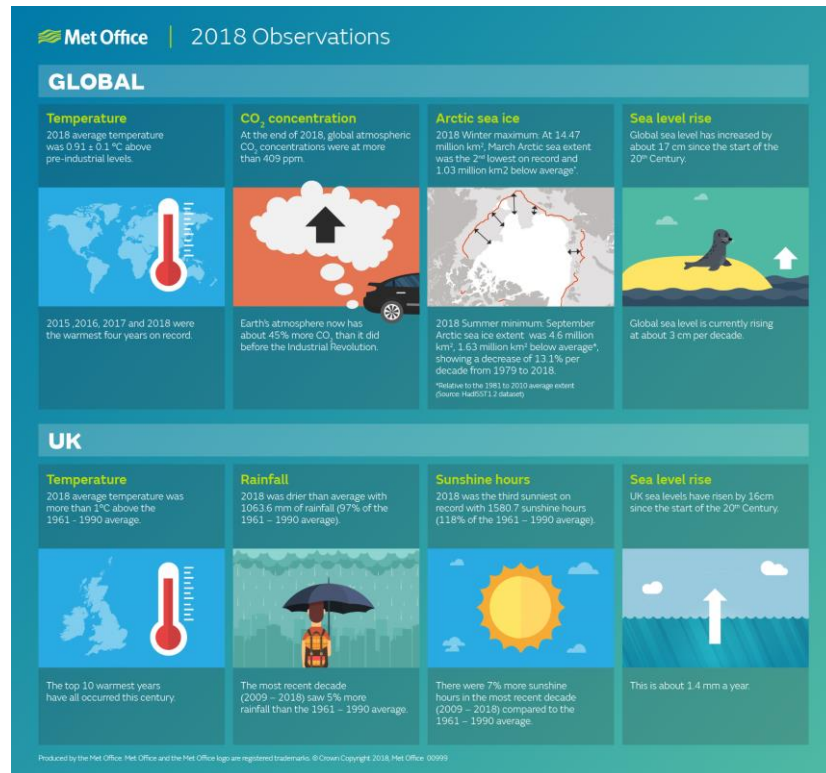


Responding to the challenge

Professor Stephen Belcher
Chief Scientist
Met Office

Emphasis in climate science shifting:

- Is the climate warming?
Warming of the climate system is unequivocal
- Is warming due to greenhouse gases?
Warming largely due to greenhouse gases
- Emphasis is now on *climate services*:
Actionable advice for decision makers



Drivers for weather and climate services

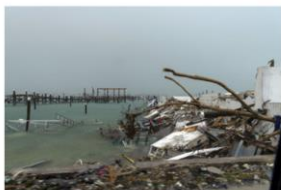
Typhoon Lekima: 28 dead and a million evacuated in China

© 11 August 2019

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Dramatic rescues after typhoon Lekima causes floods in China



UN Photo/OCHA/Mark Garten

In The Bahamas, Guterres sees impact of 'Category Hell' hurricane, 'powered by climate change'

14 September 2019 | Americas

The UN chief saw for himself the deadly power of Hurricane Dorian on the shattered islands of Abaco and Grand Bahama on Saturday, describing it as more like a "Category Hell" disaster, than the official Category 5 designation used by meteorologists.



17ª Brigada de Inf

Fani Threatens India



May 2, 2019

JPEG

As Tropical Cyclone Fani bore down on the eastern coast of India, the storm gained significant strength **over the past 24 hours**.

We are 'burning up our future', UN's Bachelet tells Human Rights Council

9 September 2019

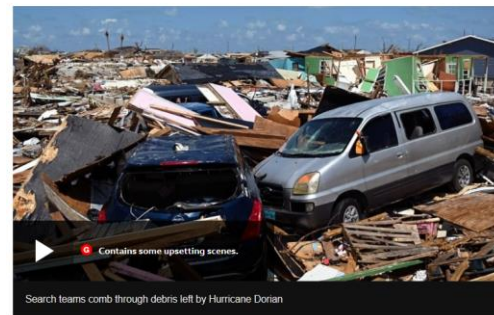
The Human Rights Council opened in Geneva on Monday with a warning from the UN's top rights official that, with forest fires raging in the Amazon, "we are burning up our future, literally".

Hurricane Dorian: Bahamas lists 2,500 people as missing

© 11 September 2019

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Hurricane Dorian



Contains some upsetting scenes.

Search teams comb through debris left by Hurricane Dorian



UNDP Chad/Jean Damascene Hakuzim

World food security increasingly at risk due to 'unprecedented' climate change impact, new UN report warns

8 August 2019

More than 500 million people today live in areas affected by erosion linked to climate change, the UN warned on Thursday, before urging all countries to commit to sustainable land use to help limit greenhouse gas emissions before it is too late.

▶ Audio - 10'41" ▶ Playlist

Drivers for weather and climate services

Sustainable Development Goals

UN's vision for the world in 2030 - apply to all countries



Drivers for weather and climate services

Sustainable Development Goals

UN's vision for the world in 2030 - apply to all countries

Weather and climate provide pervasive threats and hazards



Drivers for weather and climate services

Sustainable Development Goals

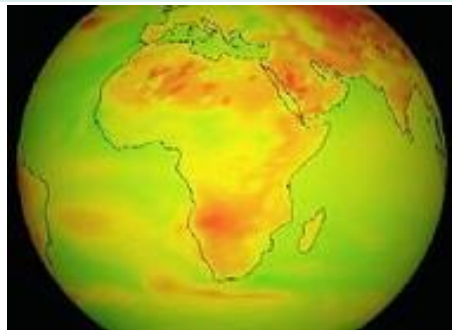
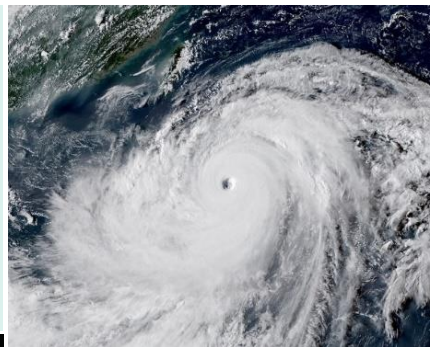
UN's vision for the world in 2030 - apply to all countries

Partnerships highlighted as part of solutions



A Global Network Centred on a Shared Challenge

The risks associated with weather and climate **transcend national boundaries** and require a network of domestic and international partnerships that draw together the expertise, knowledge and experience required to **accelerate progress** in addressing this **shared challenge**.



Our ability to tackle this challenge rests on our ability to **work collaboratively** towards a **shared goal**, deploying our skills, experience and resources to **accelerate scientific progress** and development of **innovative solutions**.



Weather and Climate Science for Service Partnership

Building the basis for services to support **climate and weather resilient economic development and social welfare** through strong strategic partnerships harnessing scientific expertise.

A global network of partnerships

Weather & Climate Science for Service Partnership Programme (WCSSP Programme)

CSSP China



WCSSP South Africa



CSSP Brazil



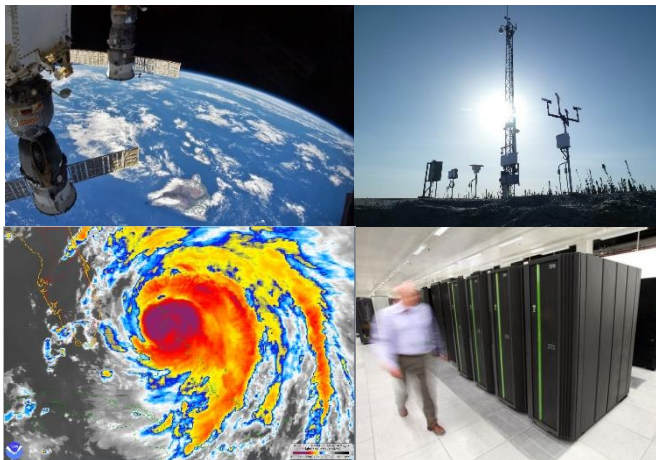
WCSSP SE Asia



WCSSP India

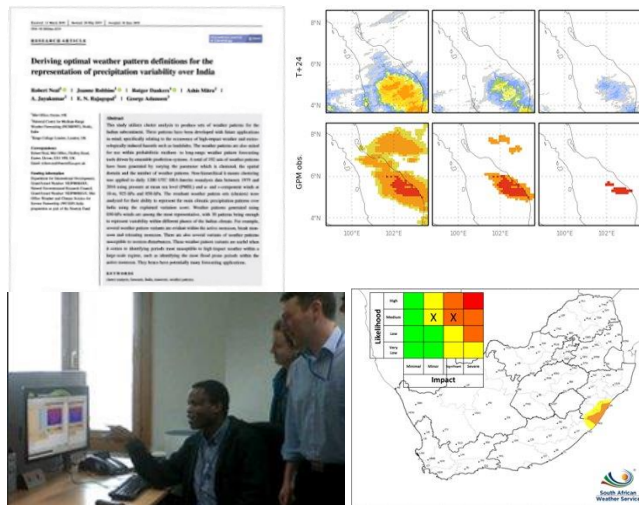


How **we** can tackle climate change...



Infrastructure

Regional Expertise

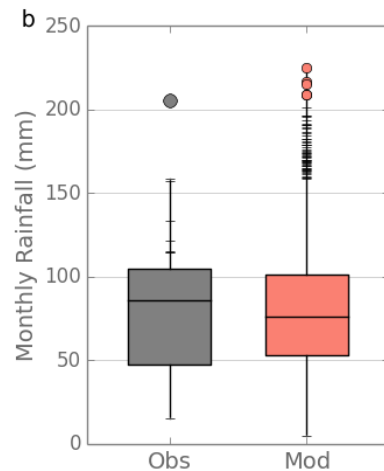
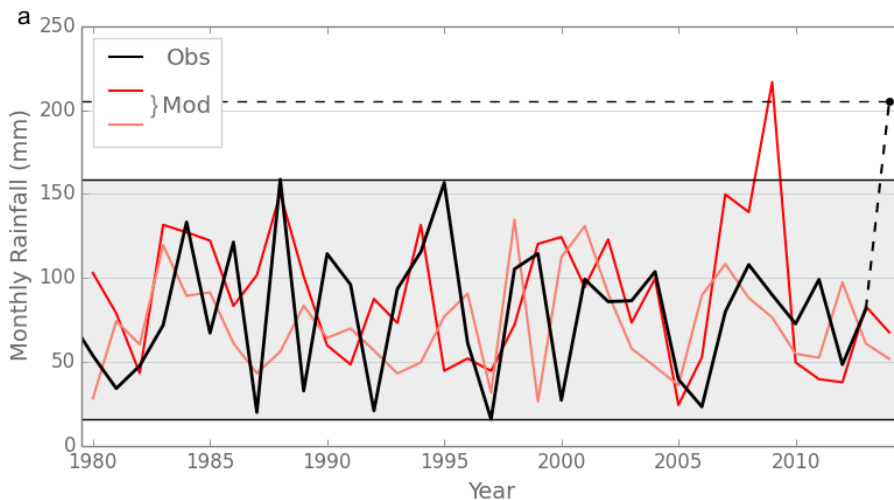
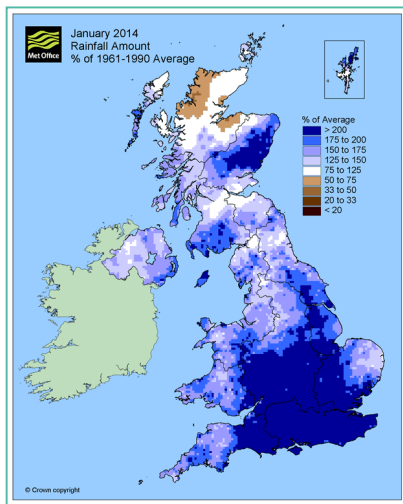


Working in Partnership

Establishing weather risk

In south east England, January 2014 saw the greatest monthly rainfall total on record

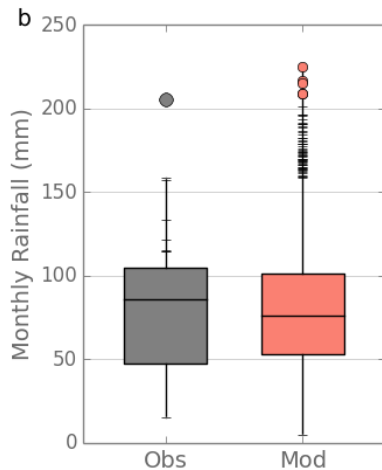
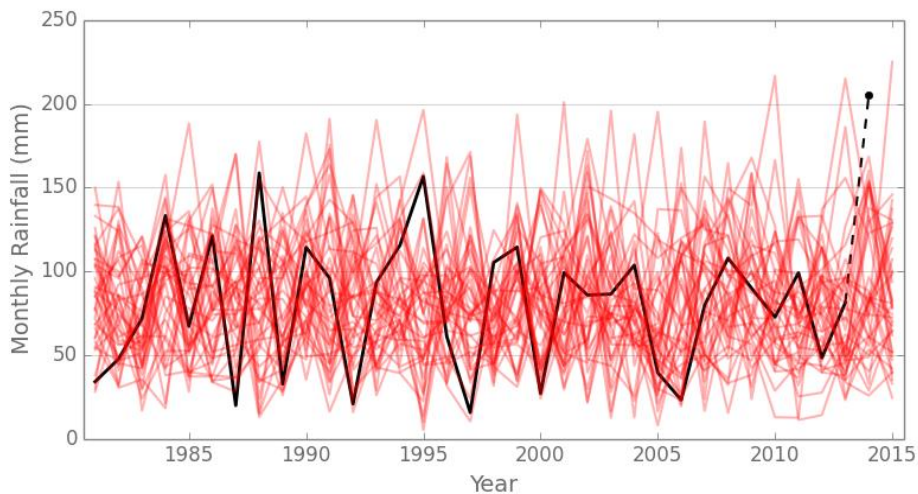
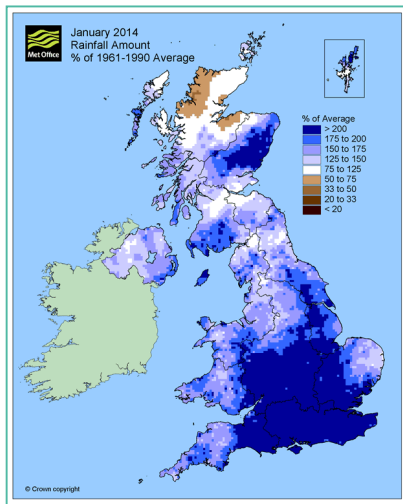
Could it have been even worse?



Establishing weather risk

In south east England, January 2014 saw the greatest monthly rainfall total on record

Could it have been even worse?





Met Office

Newton
Fund

Establishing impact risk: Risk to maize production

For several staple crops, global production is located in highly concentrated areas:

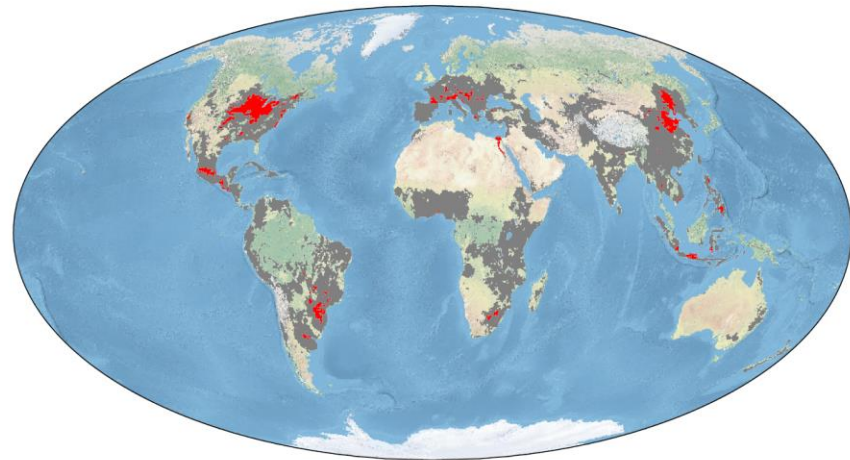
- local weather events can have global impacts

Simultaneous drought in China and USA:
multi-breadbasket failure

→ estimated **chance of up to 6% per decade**

→ risk assessments based solely on recent events may considerably underestimate the climate risk

Maize production in 2000



Smallest area needed to cover
99%, 50% global production

Purpose of this event

‘A Growing Community Around a Shared Challenge’

To bring together partners from across the Weather and Climate Science for Service Programme (WCSSP) to share **scientific highlights**, facilitate **knowledge sharing** and explore ways to **maximise the benefits and scientific advances** across the whole programme.



Objectives of this event

- Bring together the WCSSP community to share successes
- Consider future directions for WCSSP
- Explore cross cutting topics
 - Establishing weather risk
 - Climate attribution
 - Global weather patterns, e.g. El Nino
 - High impact events, e.g. heavy rainfall



Thank you

Professor Stephen Belcher
Chief Scientist
Met Office