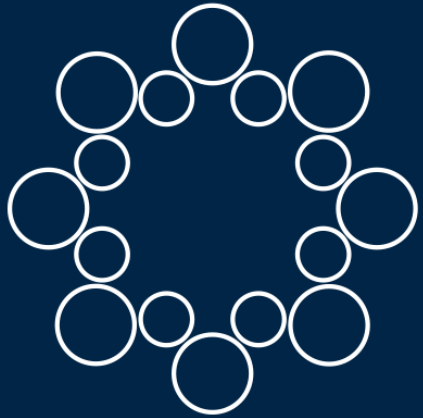


iCLIMATE INTERDISCIPLINARY CENTRE FOR CLIMATE CHANGE



iCLIMATE INTERDISCIPLINARY CENTRE FOR CLIMATE CHANGE

**Jørgen Brandt, Professor
Centre Director**

Climate change – the never ending story

Sort rekord: Drivhusgasser er eksplodert

Koncentrationen procent mere en

2017 på vei i top 3 over varmes

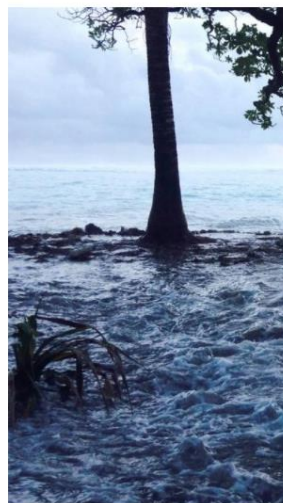
Og det kan blive spiller en rolle.



Klimaforskeres nye rettesnor:

"Hvor gal

Politikerne har brugt temperaturer og van



Hvad styrer vores klima?

Jordens klima er ikke forandring, såsom være naturlige, eller skelner man mellem

Videnskab.dk

ForskerZonen

For skoler Nyhedsbrev Om Videnskab.dk



ForskerZonen



Spørg Videnskaben



Fremsyn kan drage klimaudford

Virksomheder, der ser for klimændringer møde den nye verden



Danmark overlever

FORSIDE

PREMIUM

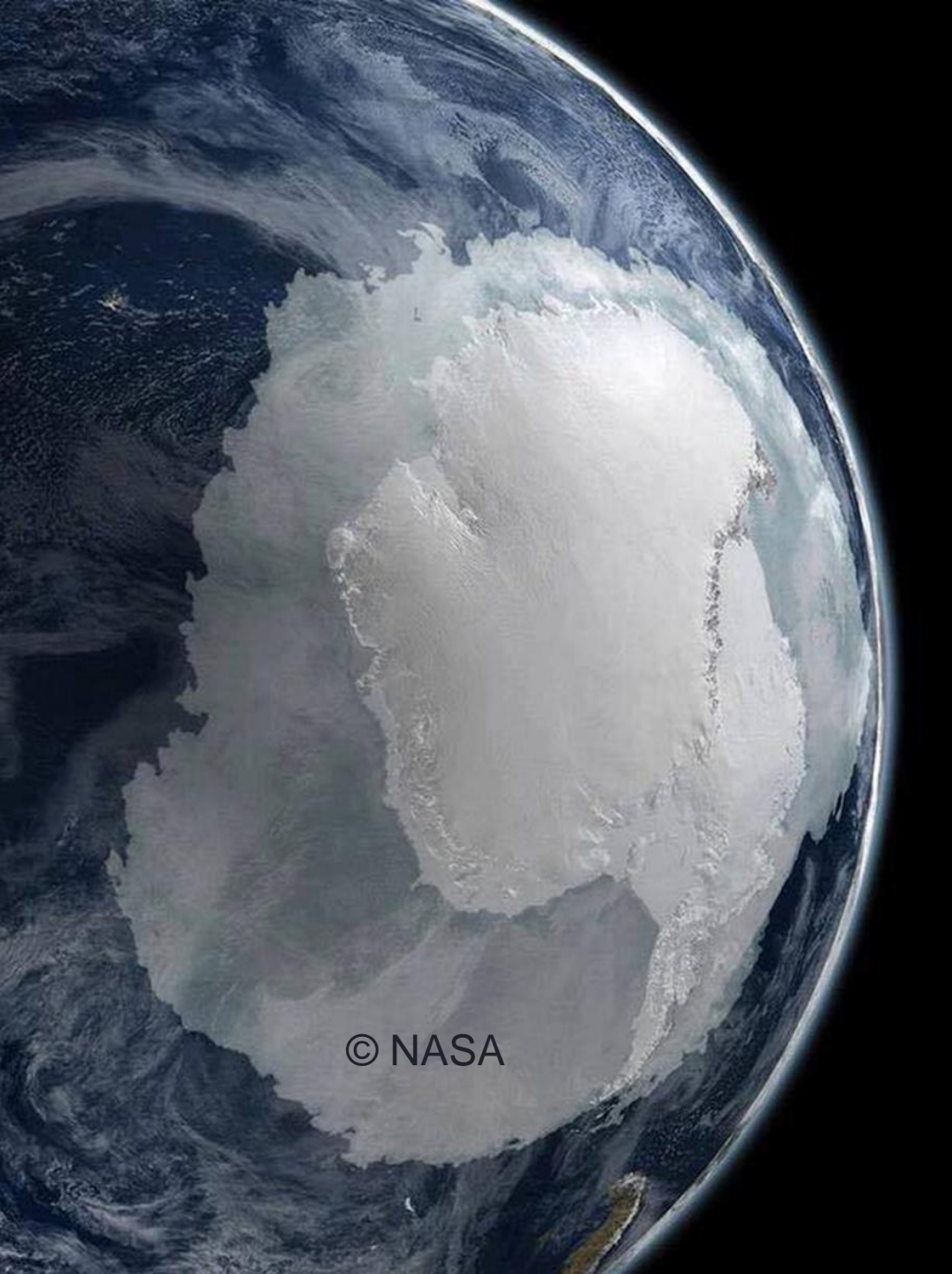
International

15.000 forskere fra hele verden udsender advarsel til menneskeheden: »Snart vil det være for sent at skifte kurs«

En amerikansk lande er på klima

Det er næsten kun blevet værre, siden internationale forskere for 25 år siden advarede om fremtiden, lyder det i et åbent brev.





© NASA

Main questions

~~Is climate change actually happening?~~

**How?, how fast? and how much?
will climate change?**

Who and what will be affected?

What can we do about it?

How can we adapt, adjust, mitigate?

Can we find new solutions by joined forces?

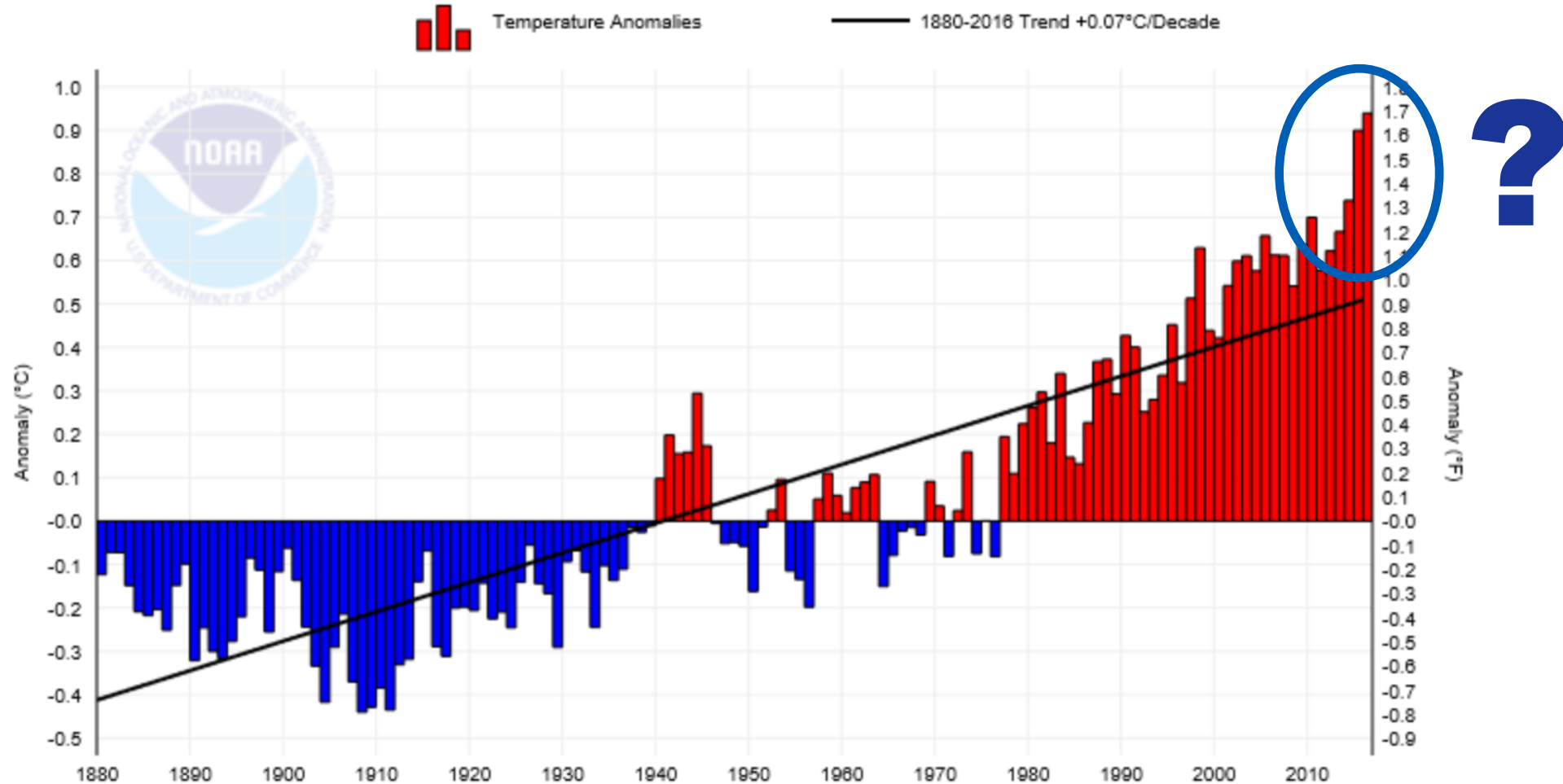


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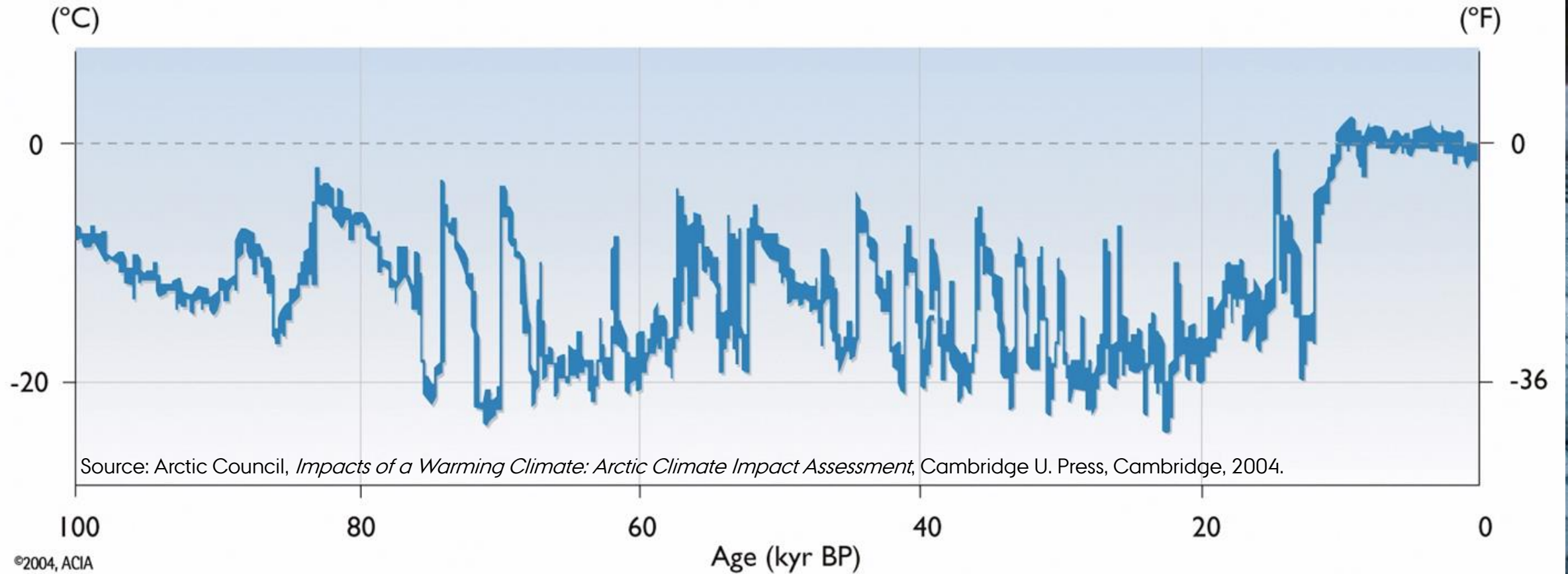
The basic challenge

Global Land and Ocean Temperature Anomalies, January-December



Source: https://www.ncdc.noaa.gov/cag/time-series/global/globe/land_ocean/ytd/12/1880-2017?trend=true&trend_base=10&firsttrendyear=1880&lasttrendyear=2017

Chaos and tipping points



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Lake Minnewanka, Canada
Photo by Paul Zizka/Caters News

A question of risk

Two events in the mid-1980s:

The Danish parliamentary decision in 1985:
no nuclear power

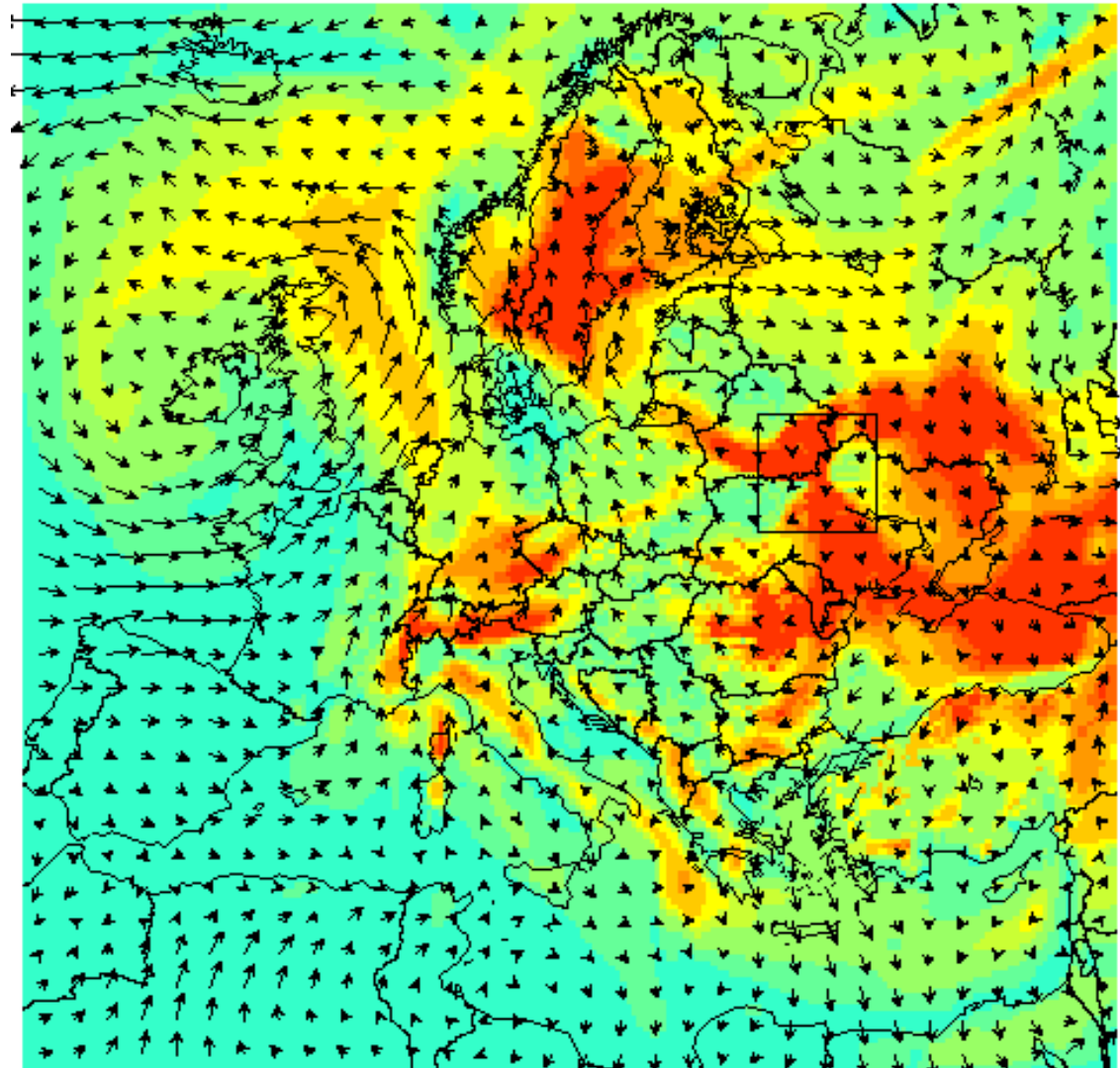
Chernobyl accident in April 1986

Nuclear power	Climate change
Low risk	High risk
Sudden change	Slow until tipping point
Enormous consequences	

Decision making based on
most probable scenario for 2100?
Risk of worst case scenario in 2100?
Precautionary principle?

Units: Bq/m³

10 m/s: →





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Climate change is one of the
major global challenges
defined by the United Nations

Climate change affects both
human life conditions and the
natural environment

The other major global challenges
are closely linked to climate
change

Therefore the climate change
challenges can only be solved by
interdisciplinary
research and innovation



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION



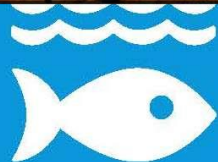
7 AFFORDABLE AND CLEAN ENERGY



2 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



SUSTAINABLE DEVELOPMENT GOALS



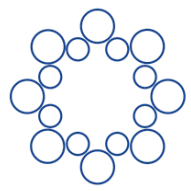
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Climate services & solutions for the climate-change-related grand challenges

based on an **integration** of basic and
applied natural, engineering and social
science research

in close **interaction** with private
companies and public authorities.





iCLIMATE - interdisciplinary research and innovations

Climate Drivers

To understand the forcing and drivers of the climate system

Understand the human interaction with the climate system

Arctic Climate

To understand the special processes in Arctic

The feedback mechanisms that accelerate Arctic warming and the interaction between Arctic and global climate change

Agriculture & Climate

To understand the interaction between agriculture and climate change

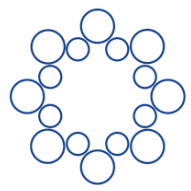
Understand how the agricultural sector can be a part of the solution

Climate Services & Solutions

To link the grand challenges to grand solutions

Focus on energy systems, urban systems, carbon neutral production systems, incl. agriculture

Collaboration with international research groups and national and international public authorities and private companies



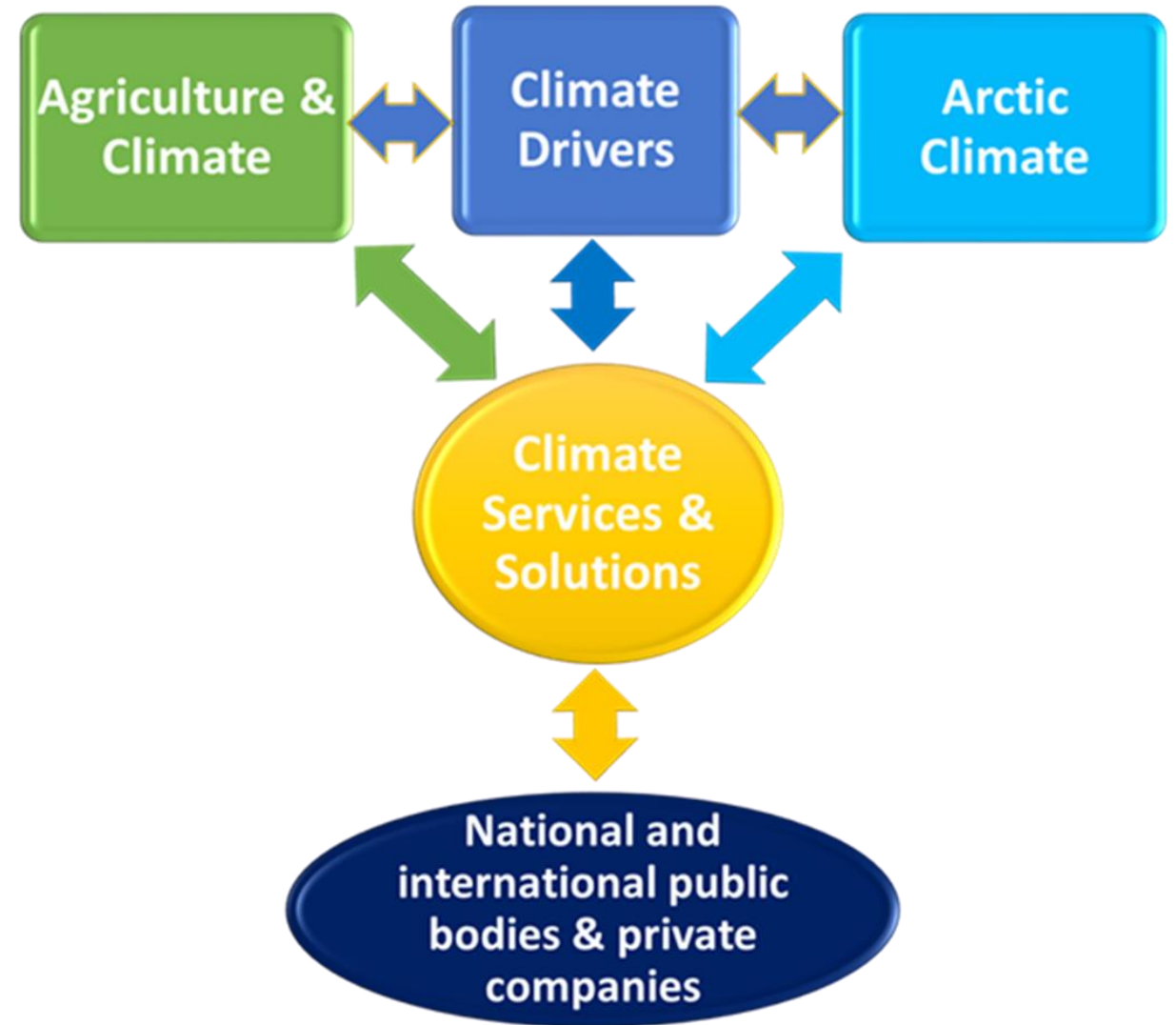
iCLIMATE - interdisciplinary research and innovations

Vision

To provide a **better understanding** the climate system, climate changes as well as interactions between climate drivers and related impacts to form the basis for **sustainable services and solutions** to the grand societal challenges within **climate, food, energy, health and environment**.

Mission

To establish an **excellent nationally and internationally unique interdisciplinary research environment and experimental facilities** for understanding the climate system, climate change, the human and climate interactions and to provide **services and solutions to the private and public sectors**.





iCLIMATE INTERDISCIPLINARY CENTRE FOR CLIMATE CHANGE

State of the art atmospheric physics and chemistry modeling tools

Atmospheric processes: physics, chemistry, biology and aerosol formation

Field experiments, laboratory experiments, measurements and monitoring data of chemistry, physics and biology

Past climate and dynamics

iClimate

Improved quantification of agricultural greenhouse gas emissions and mitigation options

Effect of climate change on agricultural production and associated environmental impacts and the possibilities for adaptation

Future energy optimization modelling and the transition to renewable energy sources

Climate solutions both for the private and the public sectors for decision support and policy development, based on combined research from natural and social sciences

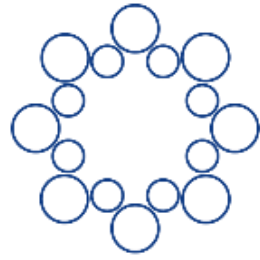




The climate change challenges
require interdisciplinary solutions

Do join us!

iClimate - Interdisciplinary Centre
for Climate Change will provide
basic and applied knowledge
and Climate Services and Solutions
to society



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Parallel sessions

Climate drivers: D1.46 (red)

Arctic Climate: Canteen (blue)

Agriculture and Climate: C2.05 (Green)

Climate Services and Solutions: Pavilion (orange/yellow)

*"I think calling it climate change is rather limiting.
I would rather call it the everything change."*

- Margaret Atwood, Canadian author, 2015