Evolution of the Global Weather Enterprise

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What is the Global Weather Enterprise?

The value chain of activities of the public, private and academic sectors providing accurate, reliable and timely weather and climate related information

Contributing to the safety of life and property, poverty reduction, and the promotion of economic development (c.f., the Sustainable Development Goals and Agenda 2030)

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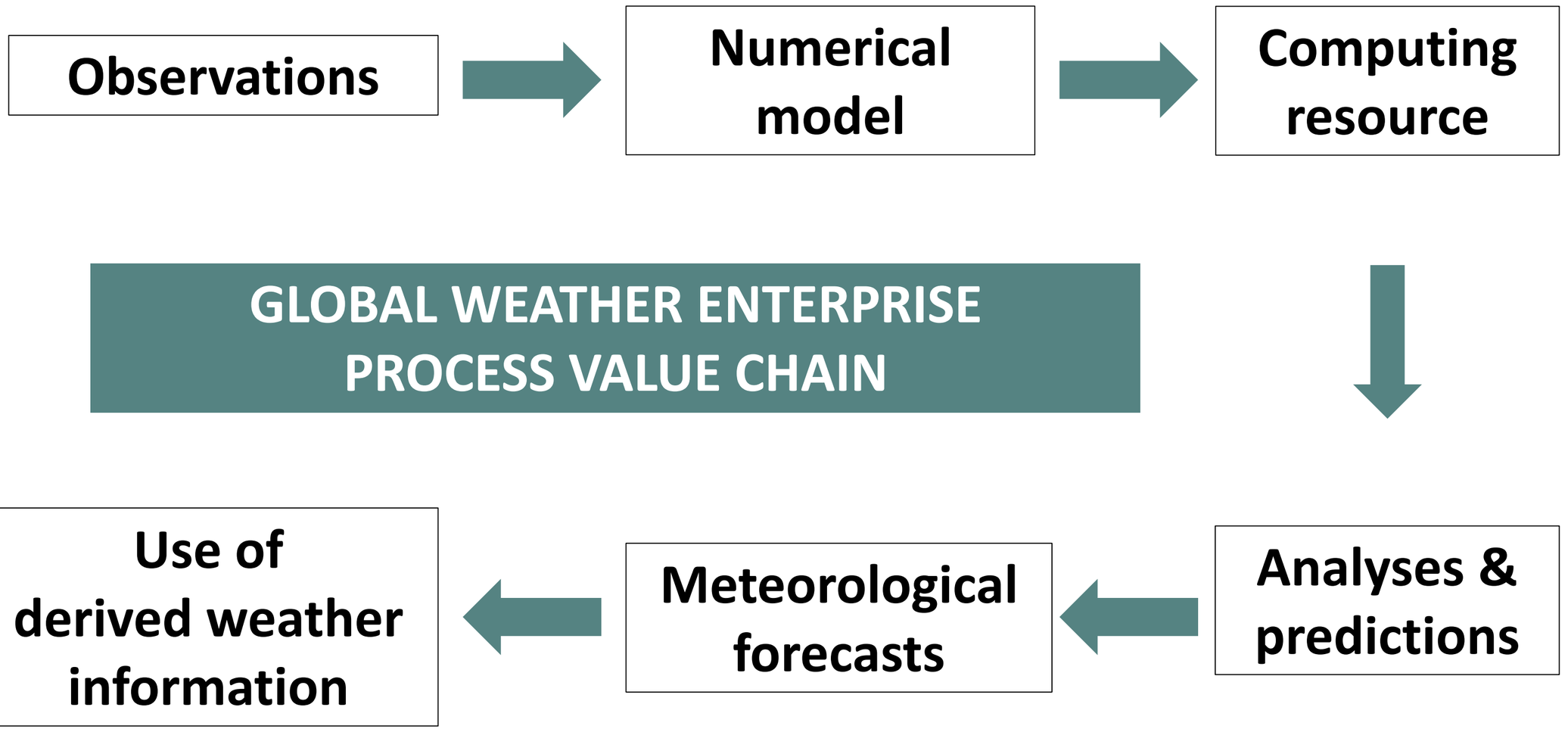

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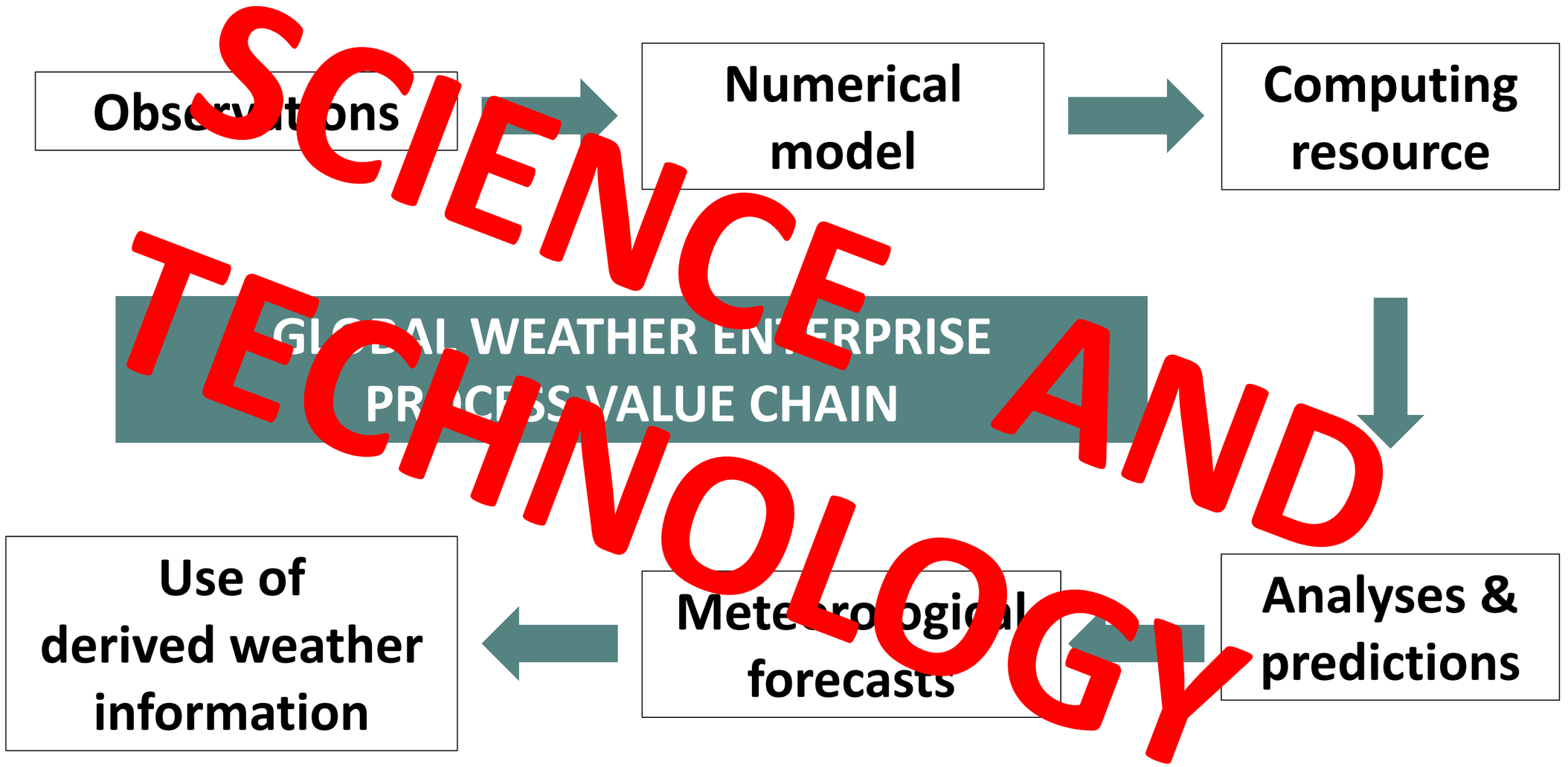

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Who does what?

Who? Key sectoral organisations:

Public: NMHS's, Private: Companies, Academic: Universities

What? Evolution in science & technology AND in their capabilities

Large disparities in regulatory environment between countries

Roles, competition and collaboration are hot topics!

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Key changes: Thorpe and Rogers, BAMS, 2018

- **Societal need for weather information is growing fast**
- **Science and technology innovation**
- **Increased appetite for, and benefits from, (many) more observations**
- **Growth of private sector capabilities**
- **NMHSs are under funding pressures**
- **Move from the provision of capital-based infrastructure to a service-based approach**
- **Weather information quality/standards, ownership principles and access need updating**
- **Changes in international financing**

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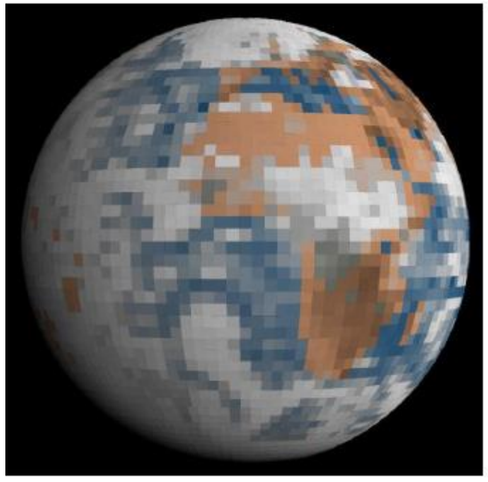
1979

~ 0.02 million daily active reports

~ 14 data sources



SYNOP - land

Aircraft

Buoys

Satellites

SYNOP - ship

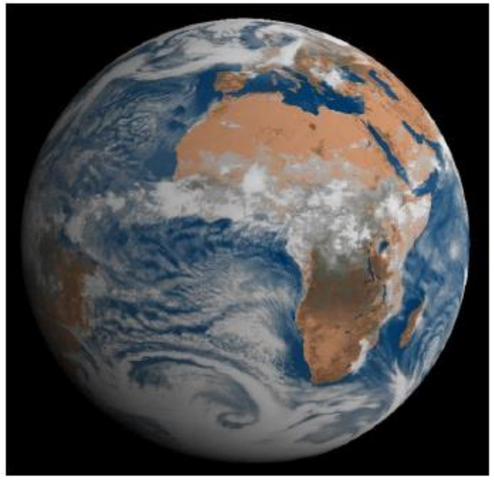
TEMP

PILOT

2019

~ 50 million daily active reports

~ 90 data sources



SYNOP - land

Aircraft

METAR

MWR

ALT

IR

Buoys - drifting

Satellites

O3

GEO

SYNOP - ship

SCAT

GPSRO

Profiler/RADAR wind

AMV

GPS

Buoys - moored

Dropsondes

PILOT

TEMP

Private sector capabilities

Observations: Design, manufacture and operation of instruments
Provision of data services
Example: constellation of commercial weather satellites

Computing: Design, manufacture and operation of computers
Provision of cloud computing services

Modelling: In-house Global and Regional weather models
Development of data analytics and machine learning

Operational: Value-added weather (and impacts) information services
Example: MeteoGroup

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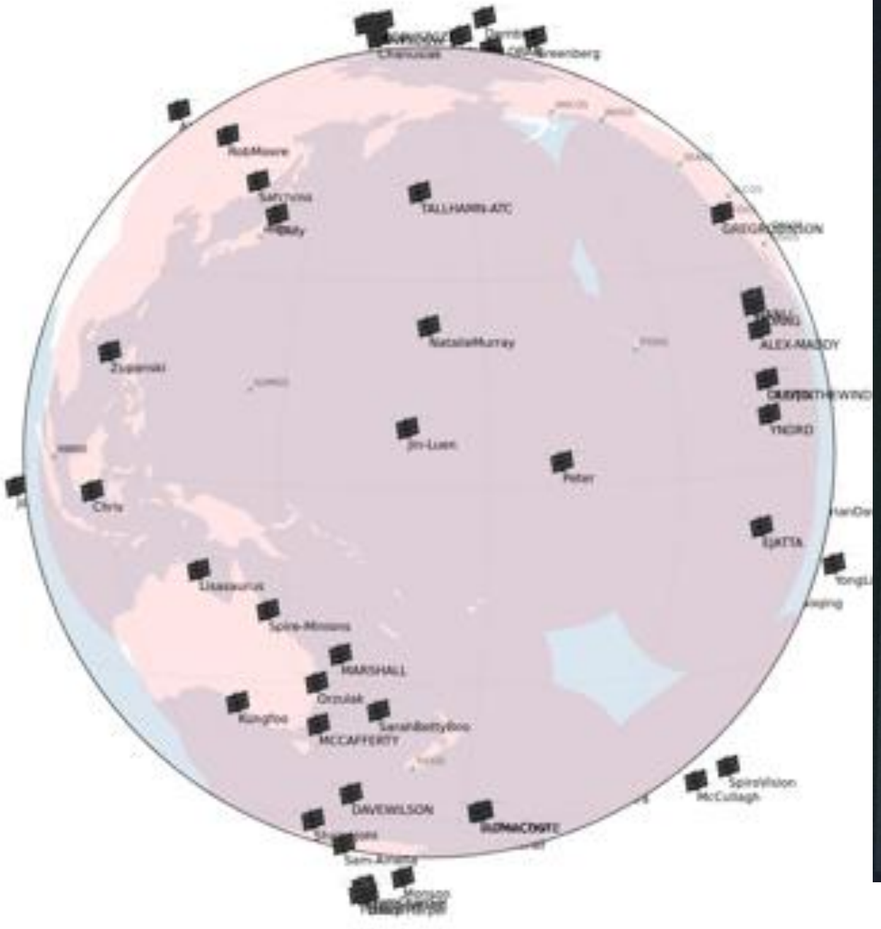
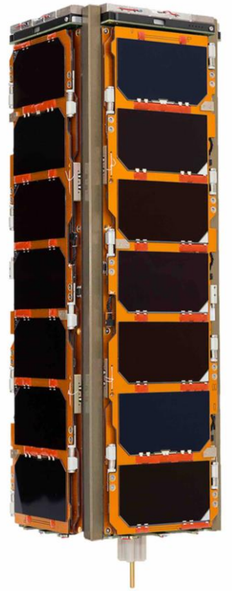
Constellation of CubeSats





> 80 satellites

> 5000/day GPS-RO temperature profiles

Forecasting services –

MeteoGroup
The global weather authority

Global reach. Hyper local availability

MeteoGroup, trusted partner of hundreds of government agencies, thousands of companies, and millions of consumers.

- Ultra-accurate forecasting built on the world's best weather models
- 120+ meteorologists delivering the highest quality and support
- 8 product suites increase efficiency for multiple industries
- State-of-the-art technology provides ultra-accurate forecasting

Weather Forecasts

For any location worldwide with hourly updates and up to 15 days ahead.

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Sectoral interdependencies

No one country or organisation can operate alone

Local weather depends on global interactions

Maximise value if research, modelling, observations, and highest quality weather information are shared as widely as possible

Relies on a “business model” that supports all sectors

Public investment acts as a vital stimulus

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So what's the problem?

Examples:

- data access and sharing
- quality assurance
- competition between the sectors
- roles and responsibilities
- sustainability of weather, climate and water services

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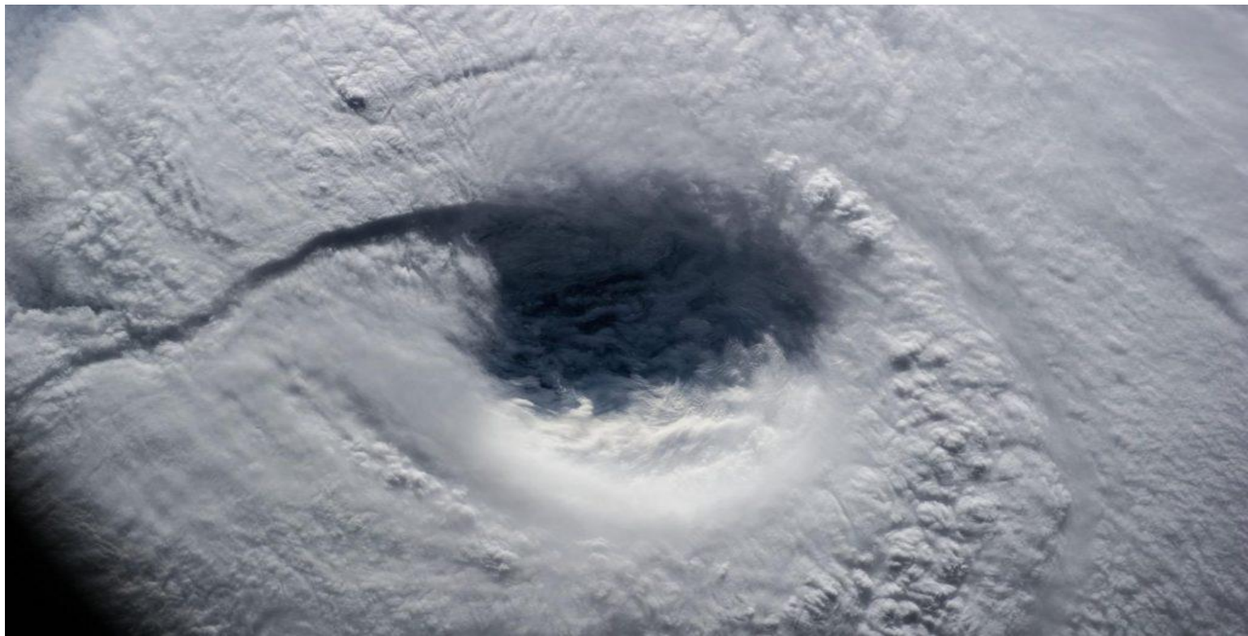
Global Weather Enterprise Forum

Goal: To create an open dialogue between the *public, private and academic sectors* in the global weather enterprise and pursue activities that test new ways to improve the delivery and sustainability of weather, climate and water services

Ways of working: mostly via online tools such as newsletters and discussion groups, and via volunteer expert teams

Membership: open

www.gweforum.org



"The Open Consultative Platform will serve as a relevant mechanism for engagement in WMO processes for all those who wish to contribute from all sectors"

ppe-openplatform.wmo.int

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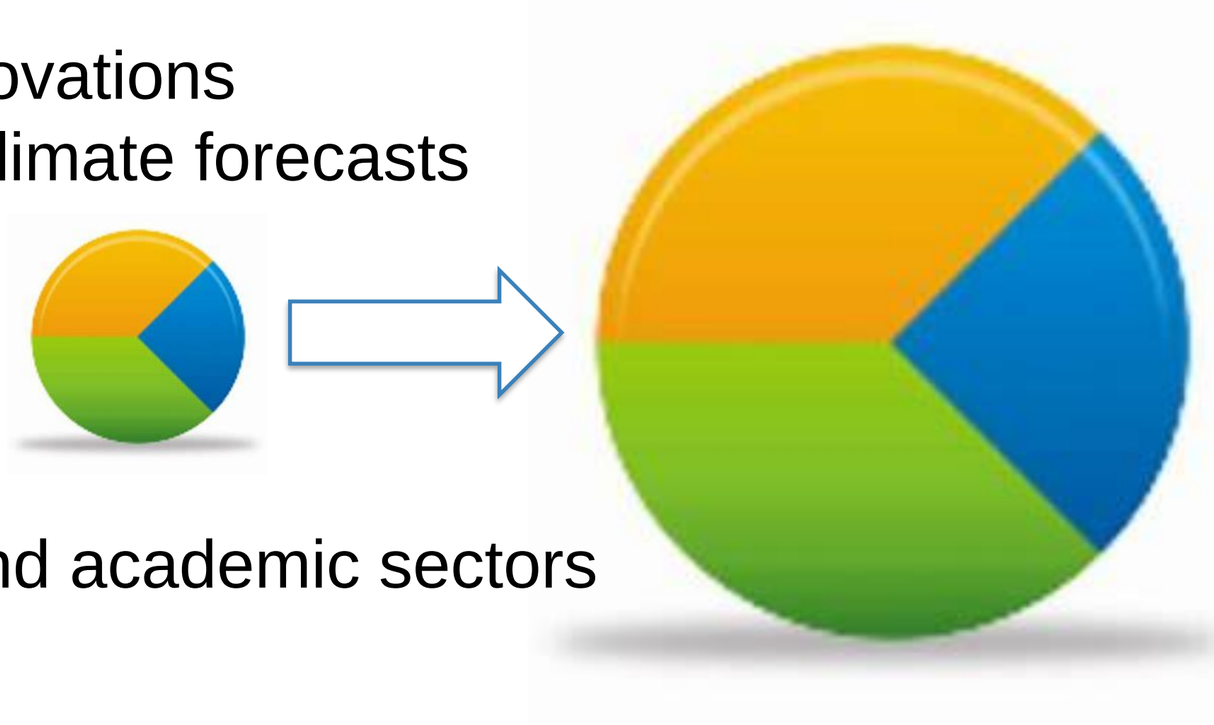
Take home messages

The future:

Ongoing science and technology innovations
Increased demand for weather and climate forecasts
Global weather enterprise growth



Evolution in roles of public, private and academic sectors

Requires:

Increasing dialogue and improved co-operation between the sectors

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