

# COMMERCIALISATION GATEWAY

**Space for Business | Business for Space**

ESA Commercialisation Gateway

# What Does Green Finance Mean?



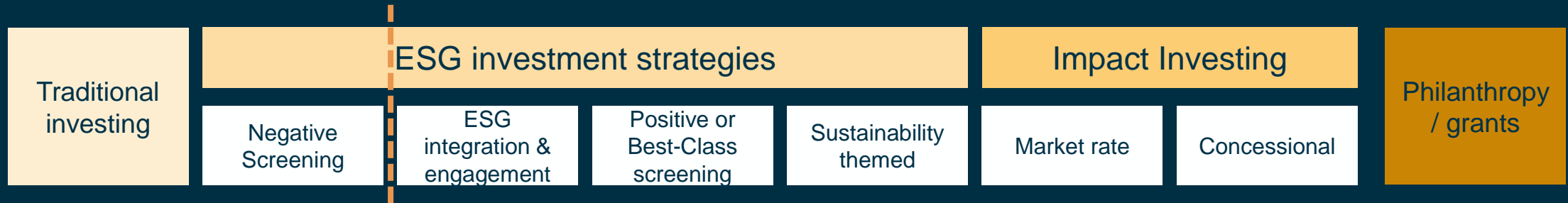
# Why is ESG Relevant?



Environmental

Social

Governance



- Bloomberg predicts ESG assets under management could climb to more than a third (up to USD 50tr) by 2025
- 90% of S&P 500 companies publish ESG reports
- Driven by social pressure and changing legislations such as the EU taxonomy, but also on national level
- No unique definition, but various disclosure frameworks and approaches exist
- “Group of five” have taken impactful steps on developing common standard + investor principles



# How Does the Ecosystem Look Like?



- Information asymmetry between investors and corporates: FIs, but also companies lack processes to report on how their operations or investments impact or depend on nature
- Main sources of company-level ESG data are voluntary disclosures with potential issues around accuracy, coverage, and granularity
- Alternative data sources: News, social media, NLP, ML, satellite information (direct or estimations)



# Which are the Commercial Opportunities for Space?



## Emerging Needs

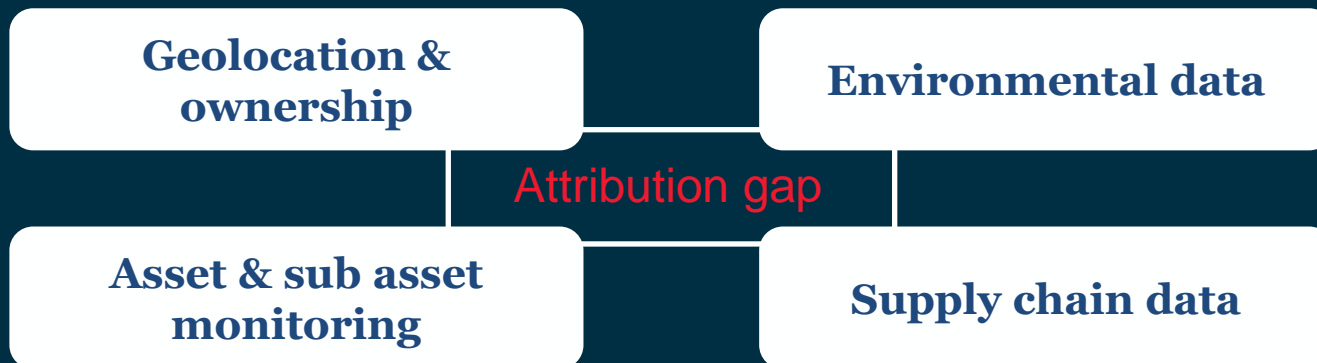
- Comparable, science-based, timely and practical approaches in data collection, fusion and interpretation

## Main Use Cases

### Environmental Monitoring

- GHG measurements
- Air pollution (non-GHG)
- Deforestation
- Biodiversity
- Water Stress
- Blue Economy

## Opportunities



### ESG related Use Cases

- ESG investments
- Green-bonds & loans
- KPI- and sustainability linked instruments
- Policy initiatives (carbon markets (ETS) & taxes, carbon boarder tax, supply chain transparency)

# How are Space Companies Already Involved?



Europe  
Other

### Data Generators

Tyvak

e-geos

KSAT

VanderSat

BLACK|SKY

Capella Space

GeoOptics

planet.

PLANETIQ

MAXAR

spire

DAURIA AEROSPACE

RS Metrics

NovaWurks

urthecast

### Data Processors/Modelers

gsi

CREODIAS

south pole

Global Canopy

Geollect

Rezatec

FOREST 500

SPOTT

UP42

Asset Resolution

e-geos

THOM

ecometrica

SAR VISION

RepRisk

DHI GRAS

SATELLIGENCE

GeoVille

KAYRROS

20tree.ai

agrottools

ACCLIMATISE

RS Metrics

GLOBAL FOREST WATCH

GranularAI

indigo

GHGSAT

AQUEDUCT

Orbital Insight

Capella Space

Bluefield

spire

KPLER

urthecast

URSA

BLACK|SKY

GENSCAPE

MAXAR

### Research

The Alan Turing Institute

Green Finance Institute

CATAPULT

EUROPEAN COMMISSION

EARS

europa graphics

trase

HeiGIT

eit

Climate-KIC

SPATIAL FINANCE INITIATIVE

THE WORLD BANK

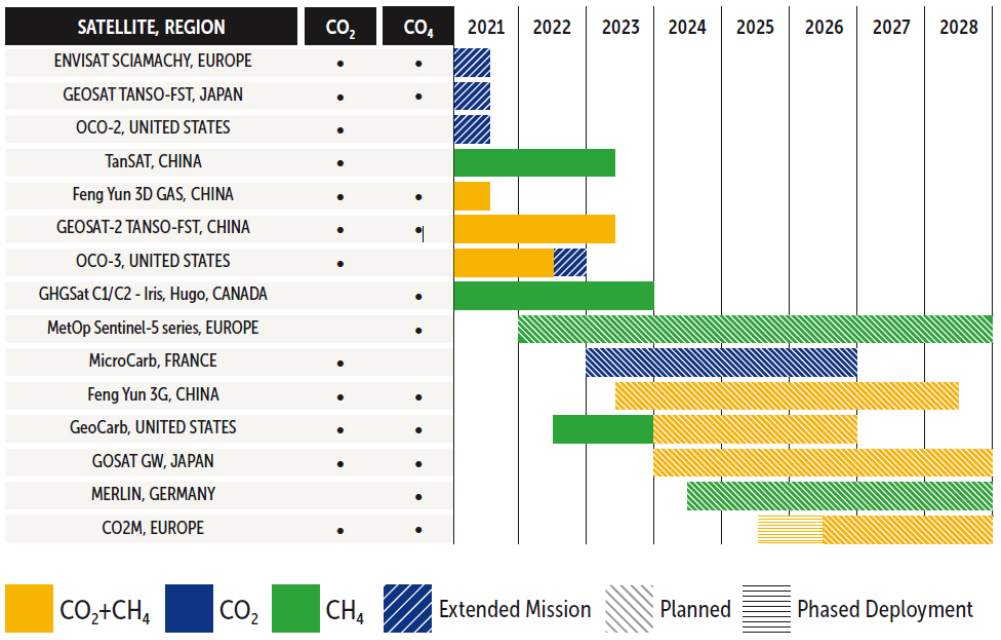
WWF

WORLD RESOURCES INSTITUTE

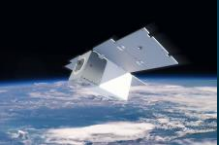
CHAIN REACTION RESEARCH

OCEAN DATA ALLIANCE

OGC



<https://www.spacenewsbusiness.net/SNDE/0260a6cad5a99f07076ff69026ca0d599174cc31.pdf>



Carbon Mapper: California, NASA, Michael Bloomberg, and Planet plan to launch its first two satellites in 2023 to locate, quantify, and track methane and CO2 emissions

# What About Climate Related Risks and Hazards?



- Shift from short-term transition risks to mid- and long-term horizons of physical risks



Coastal flood



Tropical cyclone



Drought



Extreme precipitation



Wildfire



Extreme heat



Landslide



Water scarcity and stress



Flood

## 1 Physical Risk

- Changing climate conditions
- Extreme weather events



**Direct damage to assets, properties or production processes**

- Production process
- Lower asset values
- Increased insurance claims
- Supply chain disruptions

## 2 Transition Risk

- Policy changes
- Technological innovation
- Social adaptation



**Disruptions from adjustments to low-carbon economy**

- Impacts on pricing and demand
- Stranded assets
- Defaults on loans

# For Whom is this Relevant?

Country level

Macroeconomic modelling

Central Banks

Financial stability

FI Portfolio /  
company

Scenario analysis and stress testing

Investment and lending decision

Asset

Exposure Quantification

Standards



Data providers



Models +  
Scenarios

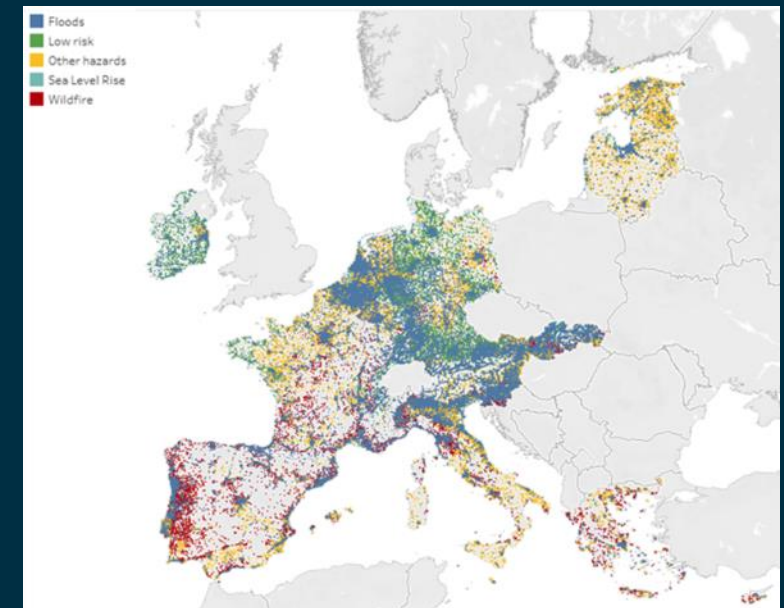
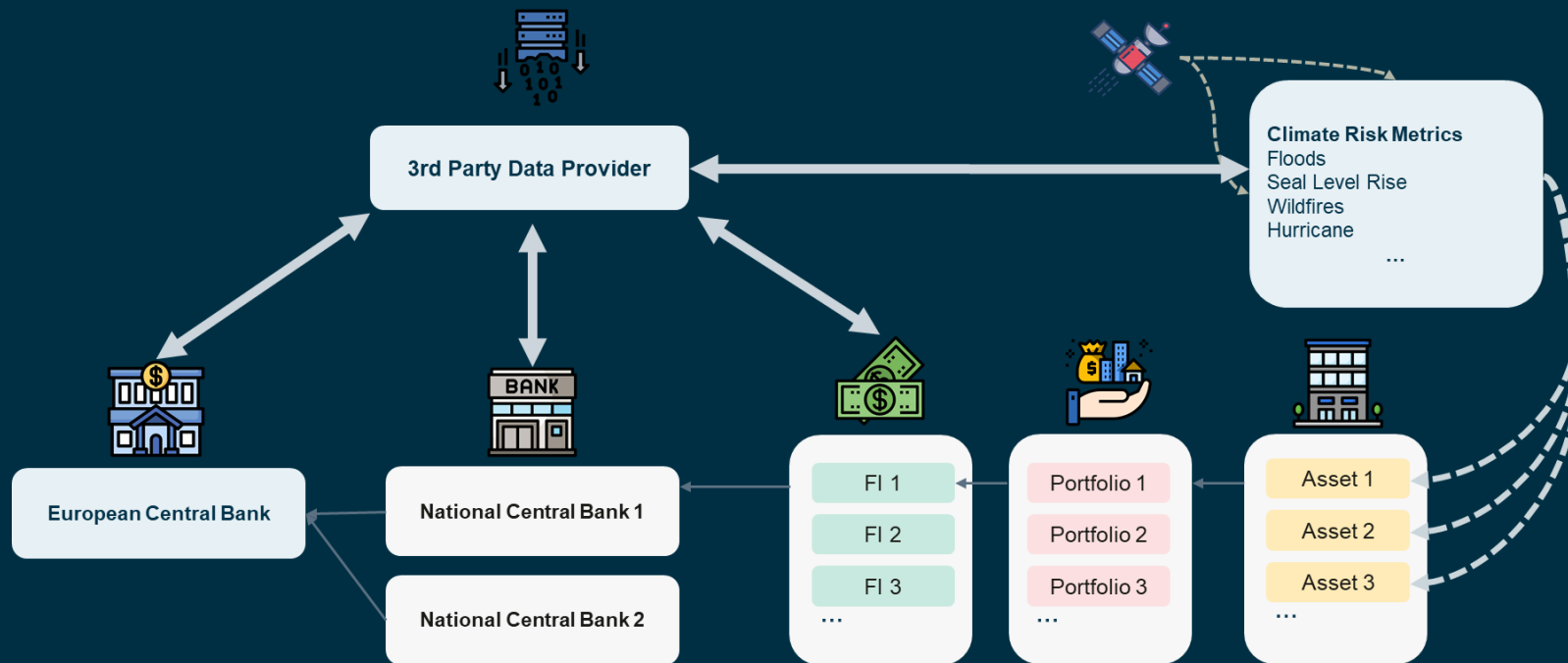




# How Does Climate Related Stress Testing Work?



In the euro area in 2019, economic losses because of extreme weather events amounted to 1% of GDP



Source: [https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202105\\_02~d05518fc6b.en.html](https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202105_02~d05518fc6b.en.html)

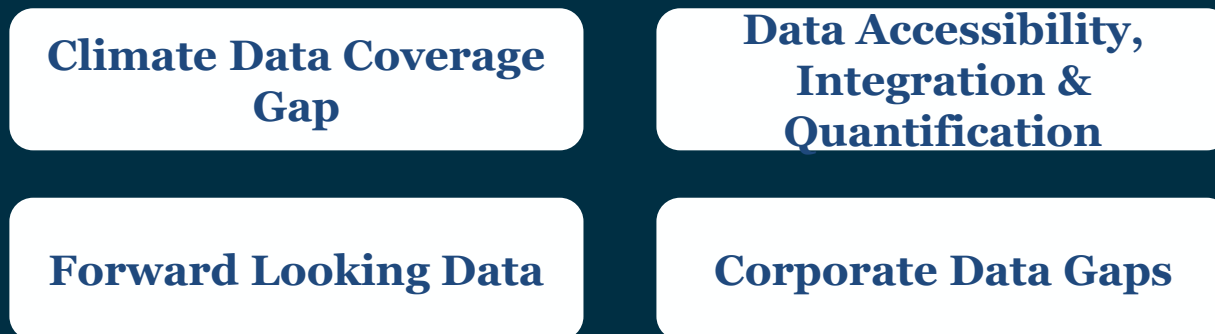
# Which are the Commercial Opportunities for Space?



## Value Chain



## Opportunities



### Climate Change

- Contribution to the ECV databases as inputs for climate scenarios
- 21 ECVs cover the whole world (thirty years timeline)
- General Circular Models and Regional Climate Models

### Natural hazards & disaster

#### Data on

- Coast floods & sea level rise
- Tropical cyclone
- Droughts
- Extreme precipitation
- Wildfire
- Extreme heat
- Landslide water scarcity
- Floods



# Thank You For Your Attention



Space For Finance Workshop