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Climate Risk – User's Perspectives

European Commission

EUSPA European Union Agency for the Space Programme

UE23 PRESIDENCIA ESPAÑOLA CONSEJO DE LA UNIÓN EUROPEA

Climate Risk

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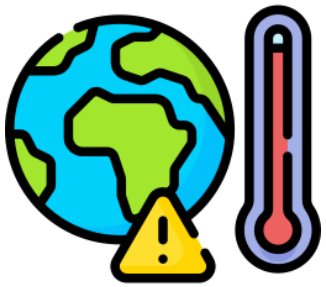
Climate Risk – User's Perspectives

Environmental Risks



Physical Climate Risk
Linked to climate change events acute or Chronic.

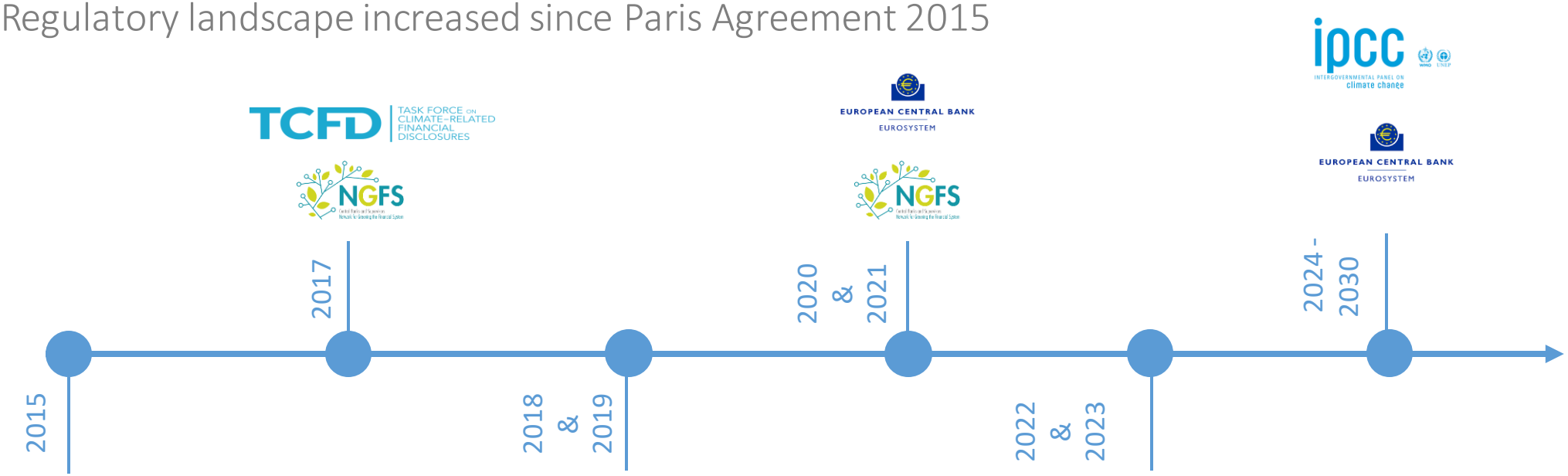
Transition Risk
Linked to the transformation towards a low carbon economy

Other Environmental Risk
Stemming from dependency and impact on natural capital

Regulation

The combination of the weight of scientific evidence and the dynamics of the financial system suggest that, in the fullness of time, climate change will threaten financial resilience and longer term prosperity. "Mark Carney, 2015)

- Regulatory landscape increased since Paris Agreement 2015



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Earth Observation Advantages

- Spatial Coverage:
  - Remote sensing allows monitoring of large areas, enabling collection of data on a regional or global scale.
- Frequency:
  - Remote sensing provides rapid data acquisition, allowing for real-time or near real-time monitoring of environmental changes, natural disasters, land use, infrastructure
- Cost Effective:
  - It is a cost-effective method compared to traditional field surveys and data collection.
- Technology growth:
  - Evolution of sensors and technology will allow to increase data availability in the future.

Earth Observation Disadvantages

- Accuracy / precision
  - Open data resolution is low for some types of use such as building types classification
  - Imagery may be obscured or diminished in locations with extensive vegetation, tall structures, or steep terrain
  - Certain weather conditions could reduce accuracy or precision depending on the type of sensor.
- Accessibility
  - Remote sensing data access is difficult due to outdated webpages, multiple steps for data downloading.
  - Multiple formats depending on type of satellite and sensor.
- Technical Expertise
  - Remote sensing data analysis can be complex. This complexity can pose a barrier for non-experts or those without access to advanced software or processing capabilities.
  - Lack of internal knowledge that does not allow use cases reducing demand from some economic sectors.

User Recommendations

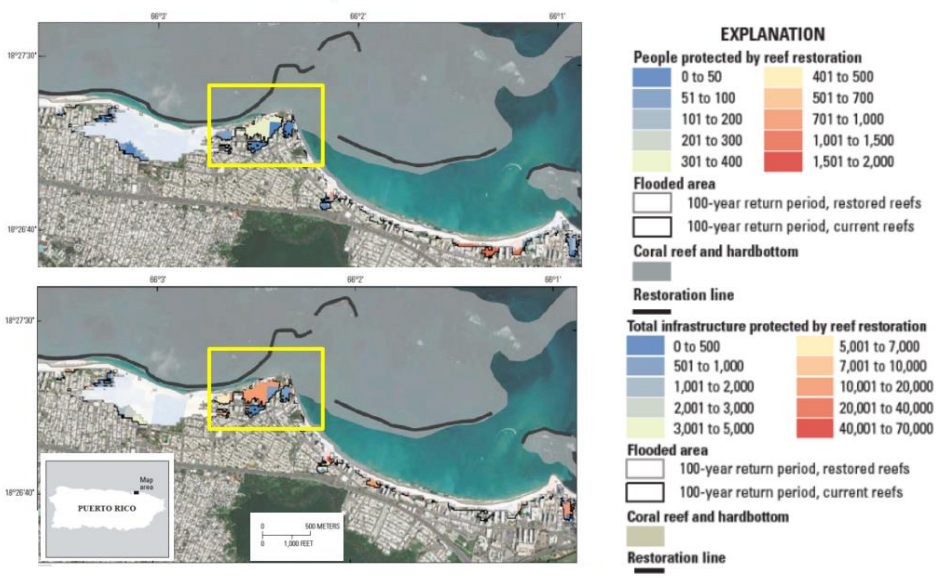
- **User Friendly Platform:**
  - Providing simple and intuitive interfaces allowing users with different levels of expertise to access and analyse data easily, without the need for extensive technical knowledge.
- **Products & Training:**
  - Products focused on user's needs and training for different economic sectors to find opportunities.
- **Central Point of Access:**
  - Providing a central point of access to all the remote sensing data available would allow users to improve and increase the usage of this type of data.
- **Open Data Standard:**
  - Provide a geospatial format standard for all satellite imagery and available to use with common geospatial software and databases. This would increase interoperability between types of data and analysis.

Use Case – Ecosystem Services

- Data
  - Ecosystem Condition:
    - Phenology, NDVI, Leaf Surface, NPP, Slope, Elevation
  - Ecosystem Structure (LiDAR,SAR)
    - Vegetation Height (Limited Standardized products, one for boreal forest)
- Results
  - Habitat Extent, Woody Biomass, Canopy Structure, Primarily productivity, Carbon Storage.
- **Example 1:** The Coral Reef Ecosystem Goods and Services Valuation - NOAA
  - Spalding et al (2017) estimated the total global value of coral reefs for tourism at $36 billion per year.
  - In the US, the touristic value of coral reefs alone is estimated to be ~$1.2 billion per year.

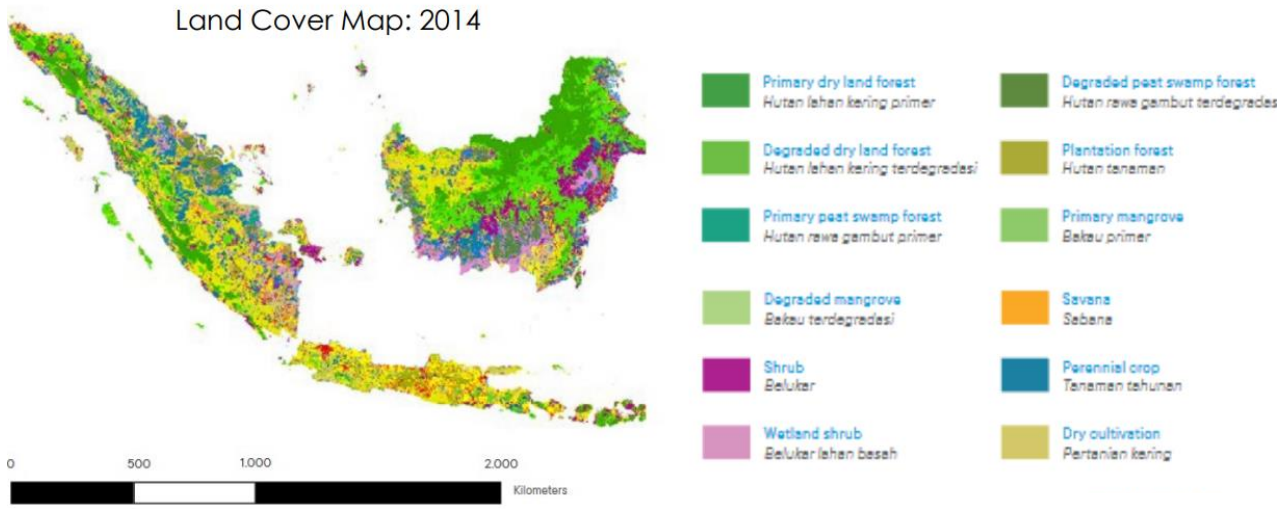
- **Example 2:** Wealth Accounting and the Valuation of Ecosystem Services (WAVES) in Indonesia
  - Indonesia lost about 33 million ha of its natural forests (about 17% of Indonesian land area) from 1990 to 2014
  - Perennial crops, which are currently dominated by oil palm plantation, were rapidly expanding from 1990 to 2014.

The Coral Reef Ecosystem Goods and Services Valuation - NOAA



Credit:Storlazzi et al (2021). NASA ARSET

Wealth Accounting and the Valuation of Ecosystem Services (WAVES) in Indonesia



Credit:World Bank. NASA ARSET

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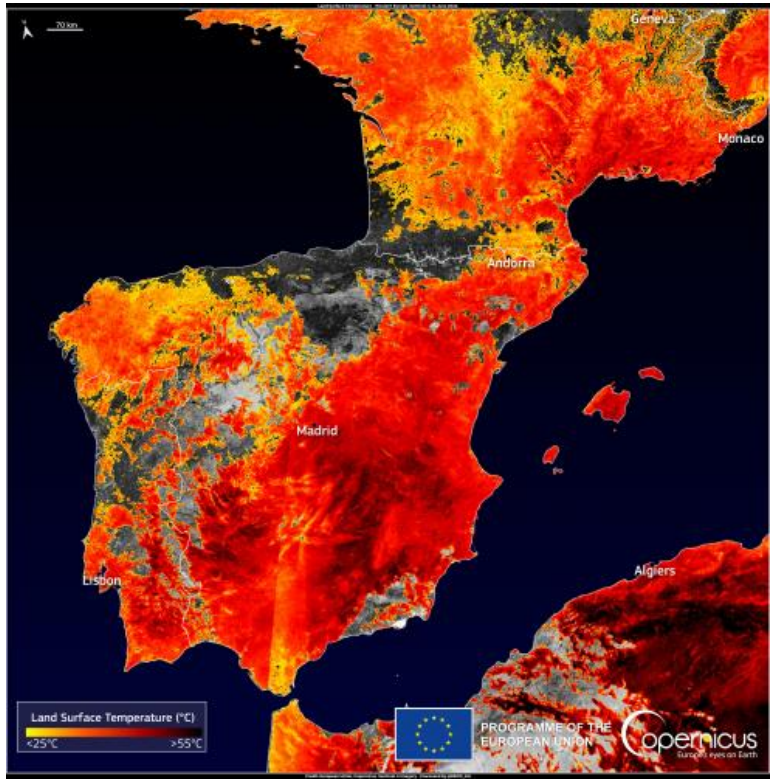
THANK YOU / GRACIAS



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