Focal theme for the TechSprint: Use of data to improve the quality of green & sustainable loan and investment decisions through data and technology.

2021 is set to be a critical year in acting on urgent environmental challenges from climate change to biodiversity. With the COP 26 international climate negotiations hosted jointly by Italy and the United Kingdom in Glasgow, a unique window of opportunity exists in building momentum to solve these global challenges. It is in this context that the Italian G20 2021 Presidency, Banca d'Italia, and the Bank of International settlements are convening the G20 TechSprint 2021 to foster global innovation for sustainable financial markets.

The G20 TechSprint is focused on how financial institutions and large investors can better **collect, verify and analyse data** to understand whether their loan decisions and investments improve (or worsen) environment outcomes. The TechSprint asks private sector firms to develop technology solutions and techniques that enable financial institutions and investors to conduct environmental risk analysis (ERA) and (a) identify and measure the exposure of their current loans and investments to climate and transition risks, (b) make informed decisions about new green loans and investments, and (c) verify the impact of those new loans and investments using trusted and verifiable data and potentially also guide market assessment of ERA-adjusted asset and portfolio value. It is hoped this cycle of data collection, verification and analysis will improve the quality and impact of loan and investment decisions across the sector.

To raise the kinds of loans and investments that green finance requires, financial institutions and investment managers need to:

•   Understand how their existing portfolios are exposed to climate risks;

•   Make informed decisions about new green loans and investments;

•   Measure the impact of those new loans

Problem Statement 1:

Data Collection, Verification and Sharing: Presently, there is a perception of information asymmetry in the collection and sharing of environmental data. This stems from both a lack of consistent data methods and disclosure regimes, and a limited verification of self-reported returns which negatively affect confidence in the reliability of aggregated data sets.

Can technological solutions, such as, public web-scraping tools, blockchain, IoT, smart sensors and GPS and other kinds of non-traditional reporting data, contribute to a disclosure ecosystem that supports all stakeholders i.e. achieving timely, transparent and verifiable disclosure (including impact reporting), while reducing the disclosure workload and costs for corporates and other reporting entities and respecting data privacy policies in individual countries? Can technological solutions also be deployed to aid in better capturing and structuring relevant climate-related (meta)data digitally including reporting requirements as code, in a consistent, high quality, transparent comparable and standardised way, so as to enhance environmental risk analysis (ERA)?

Landscape

A range of technologies and approaches are emerging to capture verifiable and reliable environmental data. In the past, approaches to managing environmental and climate risks have been hindered by data gaps and an overreliance on self-reported data. The rapid advances in areas such as satellite and drone technology, remote sensors, artificial intelligence and machine learning, as well as various other data collection and processing technologies are rapidly changing the data landscape.

Key considerations for new data approaches to climate and environmental finance relate to the verification and standardization of data and its usefulness in decision-making as relates to the likelihoods of future returns and losses for financial institutions. Currently, there is a risk that forward looking impact data appears to be very precise, but potentially not very accurate. How can new solutions find a better balance between precision and accuracy? How can financial institutions make better investment decisions under radical uncertainty?

Suggested reading:

- **Caldecott, Ben. (2019). Fintechs and the ESG Data Challenge: a study of emerging technologies. BNP Paribas. https://spatialfinanceinitiative.com/wp-content/uploads/2019/09/WebPage.pdf** - The document provides a practical set of examples of innovative data solutions emerging in the sustainable finance space, including the application of technologies such as spatial finance, blockchain, and machine learning among others. Applicants can utilise the document as inspiration to draw on real world applications of the huge range of innovative approaches to data currently being explored and scaled.

- **Recommendations of the Taskforce on Climate-related Financial Disclosures. https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf** - The Recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) provide the key framework for understanding climate risks, regulatory expectations, and resulting industry data needs. Applicants should use the TCFD recommendations as the starting point for thinking about the problems the industry will require verifiable data to solve.

- **Catapult Satellite Applications. Sustainable Finance: An Introduction for the Space Industry. https://s3.eu-west-1.amazonaws.com/media.newsa.catapult/wp-content/uploads/2019/03/05164220/Sustainable-Finance-An-introduction-for-the-Space-Industry.pdf** - A summary of the sustainable finance market with a focus on data use cases including, including key terms, institutions, products, and industry data requirements. Applicants should use the document to think about the customer base and commercial viability of solutions in the context of the wider industry landscape.

- **Bingler, Julia Anna and Kraus, Mathias and Leippold, Markus, Cheap Talk and Cherry-Picking: What ClimateBert has to say on Corporate Climate Risk Disclosures (March 2, 2021). Available at SSRN: https://ssrn.com/abstract=3796152 or http://dx.doi.org/10.2139/ssrn.3796152** - An innovative example of the use of Natural Language Processing (NLP) and Machine Learning (ML) tools to evaluate corporate data disclosures. The paper illustrates a novel approach furthering climate and environmental data verification in line with TCFD requirements.