Climate change is of utmost importance to all of us, as it poses a significant risk to our planet. Beyond its environmental impact, climate change represents an emerging source of systemic risk with the potential to destabilize the normal functioning of markets and the financial sector, leading to further negative implications for the real economy. Specifically, unless new policies are timely and effectively implemented to limit global warming, two scenarios could materialize. First, financial intermediaries exposed to industries and assets vulnerable to increasingly extreme weather events, such as floods, droughts, fires, and hurricanes, as well as rising sea levels, could face significant losses. This physical risk can severely impact both the financial sector and the real economy. Second, the potential introduction of delayed, strong, and abrupt regulatory corrective actions aimed at meeting climate targets could negatively impact certain carbon-intensive industries, often referred to as "brown sectors," as well as asset prices. This transition risk could trigger adverse effects in the financial sector and the broader economy.

The regulatory risk arising from the need to reduce greenhouse gas emissions can be particularly severe for companies covered by carbon taxes or participating in cap-and-trade systems. More ambitious reduction targets and rising CO_2 emission prices can directly affect their operating costs through elevated carbon-related expenses and energy prices. Additionally, these companies may need to implement costly investments in environmentally sustainable technologies, which can lead to higher levels of debt and increased financing costs. Consequently, impaired profitability and increased leverage during the transition to a low-carbon economy may generate heightened credit risk for banks, which provide significant funding to these companies.

While the literature on sustainable finance has grown rapidly in recent years, relatively little attention has been paid to how mechanisms for pricing greenhouse gas emissions can affect banks' stability through their exposure to firms sensitive to carbon costs. At this critical juncture, as global climate policies are being implemented at various international levels, it is essential for policymakers and supervisors to be aware of and prepared for the transformation risks facing the financial sector, which also plays a crucial role in financing the transition to a climate-neutral economy. By addressing existing gaps in the literature, this research will provide unique insights into the transmission channels of climate risk to the banking sector.

In addition to its scientific contribution, this project aims to foster cooperation between academics, regulatory bodies, and experts discussing policies to mitigate or adapt to climate change. We believe that the study's results may have important implications for policymakers, as an effective and timely response to the “tragedy of the horizon” depends crucially on a deep understanding of the sources and transmission channels of climate risk to banks. Enhancing our comprehension of this phenomenon will help fill gaps in the existing literature and provide valuable insights into how macroprudential and monetary policy should be developed in the context of climate risk.