THE ADAPTATION OF SUSTAINABLE FINANCE DRIVEN BY THE PARIS AGREEMENT AND THE 2018 EU SUSTAINABLE FINANCE ACTION PLAN AND REGULATIONS

Challenges and Opportunities of Climate Targets for Banks in Finland

Lappeenranta–Lahti University of Technology LUT

Master's Programme in International Business and Entrepreneurship, Master's thesis

2023

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ABSTRACT

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Master's thesis
2023
92 pages, 2 figures, 4 tables and 2 appendices
Examiners: Professor Laura Albareda and Postdoctoral Researcher Sanne Bor

Keywords: Sustainable Finance, Corporate Finance, ESG investment, European Green Deal, EU taxonomy, Corporate responsibility, CSR reporting, Climate change, Climate targets.

Sustainable finance plays an important role as a tool in the fight against climate change, and financial markets need to implement the related regulation in their policies. This field of finance takes into account environmental, social, and governance (ESG) factors in financial decision-making. Since 2018, the European Union has been implementing the EU Sustainable Finance Plan, which aims to mobilize private capital for sustainable investments, promote transparency and disclosure of ESG information, and establish a common framework for sustainable finance across the EU member states. The EU Taxonomy, introduced as part of the EU Sustainable Finance Plan, defines environmentally sustainable economic activities, providing clarity and consistency on what can be considered as environmentally sustainable investments. The accelerating climate change and increasing EU regulations are putting increasing pressure on banks. The purpose of this research paper is to find out what the current state of sustainable finance is in Finland, and, on the other hand, what opportunities and challenges climate-related targets pose for Finnish banks. Five experts from five different Finnish banks are interviewed for this study. In addition to providing an in-depth picture of the variables related to sustainable finance in Finland, the study also brings practical contribution to corporations acquiring finance in circumstances where green parameters are becoming the new norm.

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TIIVISTELMÄ

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KESTÄVÄN RAHOITUKSEN MUKAUTTAMINEN PARIISIIN SOPIMUKSEN SEKÄ EU:N VUODEN 2018 KESTÄVÄN RAHOITUKSEN TOIMINTASUUNNITELMAN JA -ASETUSTEN MUKAAN

Ilmastotavoitteiden haasteet ja mahdollisuudet pankeille Suomessa

Kauppatieteiden pro gradu -tutkielma
2023
92 sivua, 2 kuvaa, 4 taulukkoa ja 2 liitettä
Tarkastajat: Professori Laura Albareda ja Tohtoritutkija Sanne Bor

Avainsanat: Kestävä rahoitus, yritysrahoitus, ESG, European Green Deal, EU taksonomia, Yritysvastuu, Yritysvastuuraportointi, Ilmastonmuutos, Ilmastotavoitteet

Kiihtyvä ilmastonmuutos ja siihen liittyvät EU-säädökset lisäävät pankkeihin kohdistuvia paineita. Kestävällä rahoituksella on väitetty olevan tärkeä rooli ilmastonmuutoksen torjunnan välineenä, ja rahoitusmarkkinoiden on enenevissä määrin huomioitava siihen liittyvä sääntely toiminnassaan. Kestävä rahoitus ottaa huomioon ympäristöön, yhteiskuntaan ja hallintoon (ESG) liittyvät tekijät taloudellisessa päätöksenteossa. Vuodesta 2018 lähtien Euroopan Unioni on toteuttanut EU:n kestävän rahoituksen suunnitelmaa, jonka tavoitteena on saada yksityistä pääomaa kestäviin investointeihin, edistää ESG-tietojen läpinäkyvyyttä ja julkistamista sekä luoda yhteiset puitteet kestävälle rahoitukselle kaikissa EU-maissa. EU Taksonomia, joka otettiin käyttöön osana EU:n kestävää rahoitussuunnitelmaa, määrittelee ympäristön kannalta kestävät taloudelliset toiminnot, mikä antaa selkeyttä ja johdonmukaisuutta sen suhteen, mitä voidaan pitää ympäristön kannalta kestävinä investointeina. Tämän tutkimuksen tarkoituksena on selvittää, mikä on kestävään rahoitukseen liittyvän sääntelyn nykytila Suomessa, ja mitä mahdollisuuksia ja haasteita ilmastoon liittyvät tavoitteet tuovat pankeille. Tätä tutkimusta varten haastatellaan viittä asiantuntijaa viidestä suomalaisesta pankista. Sen lisäksi, että tutkimus antaa syvällisen kuvan kestävään rahoitukseen liittyvästä sääntelystä Suomessa, se tuottaa myös käytännön informaatiota yrityksille, jotka hankkivat rahoitusta olosuhteissa, joissa vihreät parametrit ovat uusi normaali.

ACKNOWLEDGEMENTS

This thesis was created to stitch together my international business studies, my work experience, and my personal interest in sustainable development. Sustainable development is a very current topic in today's ever-changing world. Environmental stress, the COVID-19 pandemic and geopolitical crises have competed for the attention of decision-makers in the 2020s. Especially in the fight against climate change, the international pressure has recently been concentrated on the banks. Climate change has been studied and regulated a lot, but not so much its effects on banking. The purpose of this study is to find out what kind of threats or opportunities climate change and related regulation pose to banks.

I would especially like to express my gratitude for the financial professionals who participated in my research. I received a lot of insightful information from the respondents for my research analysis. The subject is broad and professionals who are oriented towards it are passionate about it. Due to this, the interview situations were prone to spread outside the core area. However, the broader discussions significantly improved my understanding of the topic, without jeopardizing the actual goals of the interviews.

In addition, I would like to thank my thesis supervisors, Laura Albareda and Sanne Bor, for giving me guidance and support as the research progressed and for challenging my views, enabling the completion of a more coherent research project.

ABBREVIATIONS

Abbreviations	
COP	Conference of the Parties
ESG	Environment, Social, Governance
EU	European Union
EC	European Commission
ECB	European Central Bank
Finsif	Finland’s Sustainable Investment Forum
FSFF	The Finnish Sustainable Finance Forum
IPCC	Intergovernmental Panel on Climate Change
NGFS	The Network for Greening the Financial System
OECD	The Organisation for Economic Co-operation and Development
PRI	Principles for Responsible Investment
SDG	Sustainable Development Goals
SDR	Sustainable Development Report
SFDR	Sustainable Finance Disclosure Regulation
SRI	Socially responsible investment
SSE	The Sustainable Stock Exchanges Initiative
TCFD	Task force on climate-related financial disclosures
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change

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Appendices

1 Introduction

> "Global warming is the worst market failure that the world has seen – Nicholas Stern" (Urry & Vainonen, 2013).

The climate is warming naturally, but the fact that climate change is largely caused by human activity has been scientifically and almost irrefutably proven (Flannery & Rekiaro, 2006). Climate change causes global warming and is thus a significant threat to humanity and the environment. In 2015, 187 countries signed the Paris Agreement, according to which the global temperature rise should be limited to well below 2 degrees Celsius above pre-industrial levels (United Nations, 2015b). This agreement serves as the basis for global climate work and regulation. The climate is warming despite mitigation measures, so we also must adapt to the change and ensure sustainable future.

The concept of *Sustainable Development* was originally introduced on the report *Our Common Future,* commonly known as the Brundtland Report in 1987 published by the United Nations World Commission on Environment and Development. The report included a definition of "sustainable development" which is now widely used. Sustainability means ensuring current development supports present needs while preserving future generations to meet their needs (Brundtland, 1987; Armstrong, 2020). Business sustainability can be conceptualized through the "triple bottom line" approach, which involves managing a company's financial, social and environmental risks (Armstrong, 2020).

The Paris Agreement, adopted in 2015, is an international treaty aimed at combatting climate change. It sets out the goal of limiting global warming to well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius. To achieve these objectives, the Paris Agreement calls for a shift towards low-carbon and climate-resilient economies. (United Nations, 2015b)

Building upon the goals of the Paris Agreement, the European Union launched the European Green Deal in 2019. This comprehensive policy framework aims to make Europe the world's first climate-neutral continent by 2050. It sets ambitious targets for reducing greenhouse gas emissions, promoting sustainable energy, and transitioning to a circular and sustainable economy. (European Commission, 2021.)

In support of the European Green Deal, the EU also developed the EU Sustainable Finance Strategy. Introduced in 2018, this strategy seeks to mobilize private capital flows towards sustainable investments and ensure that financial markets contribute to sustainable and inclusive growth. The strategy includes various initiatives, such as the EU Taxonomy for sustainable activities, the EU Green Bond Standard, and requirements for integrating sustainability factors into financial decision-making. (European Commission, 2018b.)

According to the EU, *Sustainable finance* means taking into account aspects related to society and the environment in investments. This kind of consideration would bring more investments in long-term sustainable operations (Pacces, A.M., 2021). In 2018, an expert group under the EU defined the concept with two imperatives:

> ” (1) improving the contribution of finance to sustainable and inclusive growth by funding society’s long-term needs and (2) strengthening financial stability by incorporating environmental, social and governance (ESG) factors into investment decision-making.” (Pacces, A.M., 2021).

Sustainable finance refers to business activities in the financial sector that promote the goals of sustainable development, in line with the United Nations’ 17 sustainable development goals (SDGs) (Financial Supervisory Authority, 2022b; Armstrong, 2020). The focus in sustainable finance is on integrating *environmental, social and governance* (ESG) factors into financial decision-making, and this has gained significant attention in recent years (Armstrong, 2020). The ESG measures are considered to influence corporate behavior in investment decisions by increasing the awareness of climate change (environment), the impact of corporate activities on the communities (social), as well as business ethics and risk management (governance) (Armstrong, 2020). Environmental factors encompass various aspects, such as addressing climate change through mitigation and adaptation efforts, preserving biodiversity, preventing pollution, and promoting a circular economy (Armstrong, 2020). Social factors demonstrate issues of equity, inclusivity, labor relations, investments in human resources and communities, as well as upholding human rights (Armstrong, 2020). The governance of both public and private institutions, including management practices, employee relationships, and executive compensation, plays a crucial role in integrating social and environmental considerations into the decision-making process (Armstrong, 2020).

As the global community grapples with the challenges of climate change and the need for a more sustainable future, the role of finance and banking in driving positive change has become increasingly crucial. The adoption of climate-related targets and the implementation of EU regulations have further shaped the landscape of sustainable finance, creating both challenges and opportunities for banks worldwide. Especially at the EU level, climate-regulation has increased significantly in recent years. In 2018, the European Commission published a Sustainable Finance Action Plan, which focuses on reorienting capital flows towards sustainable investment, mainstreaming sustainability into risk management and fostering transparency and long-termism in financial and economic activity (PRI, 2022; PRI 2018).

The EU has released several tools to support the implementation of the Sustainable Finance Action Plan and the transition to a low-carbon economy, that are aligned with the goals of the Paris Agreement (2015), the EU Taxonomy being one of them. The EU Taxonomy provides a classification system that defines what economic activities can be considered environmentally sustainable (Regulation (EU) 2020/852, 2020). Taxonomy not only allows banks to better manage decision-making and analyze data, but also helps to comply with regulations and reporting requirements (Gaia, 2021).

1.1 Research context

This research aims to explore the challenges and opportunities that sustainable finance based on climate-related targets and EU regulation poses for Finnish banks. Finland, like many other countries, is striving to align its financial system with sustainability objectives and contribute to global climate change mitigation efforts. By understanding how the challenges and opportunities related to sustainable finance are experienced within Finnish banks, this study seeks to shed light on the practical aspects and implications of integrating climate targets into financing processes.

Banks are adapting not only to the increasing climate regulations, but also to the changing of new EU Sustainable Finance Regulation, based on the disclosure of the preferences of investors and other stakeholders. The development of the current EU Sustainable Finance Strategy can be traced back to the commitments and objectives outlined in the Paris Agreement (2015), which aims to combat climate change and achieve global sustainability goals. Additionally, the EU Green Deal, with its focus on a sustainable and inclusive economy, has played a significant role in shaping the direction and priorities of the EU's sustainable finance initiatives (European Commission, 2021).

Investing is no longer solely focused on gaining financial returns, but the investors seek to be more aware of the ethical considerations of the investments. Sustainable finance has thus become an important field of finance, as it takes into account the ESG factors in investment decisions (Virtanen & Rohweder, 2011). Therefore, it is of great importance for the financial sector to carry out the transition, but also to motivate other economic actors to take part in climate work.

According to the IPCC's sixth assessment report (AR6/2022), the urgency of the financial sector's actions has been recently emphasized, since finance for climate change mitigation would have to be three to six times higher by 2030, to limit global warming below 2°C (IPCC, 2022). This indicates that the pressure on the financial sector is likely to intensify and the banks need to be clear about how to tackle potential challenges and identify new opportunities.

The role and significance of banks have been underscored also in the past when global threats jeopardized national stability. Economic and social shocks, such as the recessions of the 1990s and the global financial crisis of 2008, tested the resilience of banks and their ability to assist customers in navigating challenging times (Kauppi, 2022). The events of 2008 highlighted the risks associated with economies overly reliant on the financial sector and underscored the need for collective action, as states intervened to prevent or mitigate certain events (Urry & Vainonen, 2013).

Financial institutions are again called upon to play multiple roles in addressing climate change, just as they have done with previous societal issues. Banks have the power to influence and reduce their own organizational emissions, thereby contributing to environmental sustainability. In addition, through their products, especially loans and investment schemes, they can significantly influence by (a) demanding or requiring businesses and individuals to adopt measures that mitigate climate change, even refusing to finance environmentally harmful industries, and (b) promoting and supporting the development of products that reduce climate change impacts or enhance societal resilience to its effects.

By acknowledging these multiple roles, and identifying the related challenges and opportunities, it becomes evident that financial institutions possess the capacity to effect meaningful change within their own operations and leverage their influence to drive sustainable practices across industries. As we stand on the edge of irreversible climate change, states are once again striving to establish common frameworks to guide collective action. Both public and private financiers must carry a new responsibility in the face of this pressing societal issue. This research explores the novel challenges and opportunities that climate change, and climate-related regulations, present for Finnish banks.

Regulatory drivers of the climate transition

The Paris Agreement, the European Green Deal, the EU Sustainable Finance Action Plan are the main policy and regulatory drivers for the financial sector to change. The Paris Agreement has been a catalyst for the EU's sustainable finance policy and regulation, leading to a greater focus on sustainability in the financial sector and the development of new tools and initiatives to support the transition to a low-carbon economy.

The Paris Agreement (2015) is a legally binding international treaty on climate change. The agreement was negotiated in Paris in 2015 and entered into force in 2016 (United Nations, 2015b). The main goal of the agreement is to limit global warming to two degrees compared to pre-industrial levels - however, aiming to limit warming to 1.5 degrees Celsius (United Nations, 2015b). Climate neutrality is aimed for by 2050 (United Nations, 2015b). The agreement represents the initial effort to unify nations in addressing the worldwide climate predicament. It also reinforces the idea that developed nations should bear the responsibility of providing monetary aid to countries that are economically disadvantaged and more susceptible (United Nations, 2023). Furthermore, the agreement marks the first instance of encouraging voluntary contributions by other entities. Sustainable finance is essential to mitigate the issue since it necessitates substantial investments to considerably decrease emissions. Adaptation also requires substantial financial resources to mitigate the unfavorable effects and the impact of a changing climate (IPCC, 2022).

The Sustainable Finance Action Plan is a set of guidelines for the integration of sustainability risks and opportunities into the risk management processes of financial institutions. The measures adopted by the European Commission in 2018 aim to mobilize private finance to support sustainable economic growth in the European Union and is seen as a key step towards redirecting private finance towards sustainable investments and supporting the transition to a more sustainable and low-carbon economy in the EU (EC, 2018a). The EU Sustainable Finance Action Plan includes a set of building blocks.

First, a key building block of the Action Plan is the creation of the EU Taxonomy for sustainable activities, which aims to provide a standardized classification system for environmentally sustainable economic activities (EC, 2018a). The EU Taxonomy will help investors identify sustainable investments and promote the growth of sustainable finance and is closely aligned with the goals of the Paris Agreement and helps to facilitate the transition to a low-carbon economy.

Second, the Action Plan also includes proposals for new disclosure requirements for financial institutions to ensure that investors have access to accurate and comprehensive information on the ESG risks and opportunities associated with their investments. For example, climate change, with its potential for extreme weather events and resource scarcity, represents an ESG risk, whereas investing in renewable energy projects and clean technologies exemplifies an ESG opportunity. The disclosures help to ensure that investments are made in a sustainable manner and that the financial sector is aligned with the goals of the Paris Agreement. Re-orienting investments towards sustainable technologies and businesses is the core of sustainable finance, which constitutes a crucial aspect of the

European Green Deal. To attain climate neutrality by 2050, significant investment from both the public and private sectors is necessary to make the financial system sustainable. (European Commission, 2021.)

The Green Bond Standard is another component of the EU Sustainable Finance Action Plan. It establishes a framework for issuing and verifying green bonds, which are financial instruments specifically designed to fund environmentally sustainable projects. The standard aims to provide clarity, credibility, and transparency to investors and issuers by setting out specific criteria and requirements that a bond must meet to be considered "green." It helps ensure that the proceeds from green bonds are allocated towards projects that contribute to climate change mitigation, adaptation, or other environmental objectives. By promoting the issuance of green bonds, the standard encourages investments in sustainable initiatives and facilitates the flow of capital towards a more environmentally friendly economy. (KPMG, 2023.)

Sustainable Finance Disclosure Regulation (SFDR): The SFDR is a regulatory framework also introduced under the EU Sustainable Finance Action Plan. It requires financial market participants, such as asset managers, insurers, and pension funds, to disclose information regarding the integration of sustainability risks and the consideration of adverse sustainability impacts in their investment decision-making processes. The SFDR aims to enhance transparency and enable investors to make more informed decisions by providing them with clear and comparable information on how sustainability factors are incorporated into investment products. (Regulation EU 2019/2088, 2019)

1.2 Research gap

The banking industry is heavily regulated in Finland, and EU regulation on combating climate change has also increased significantly in recent years. However, it is not yet fully explored how the massive regulation and ambitious target setting will actually affect the operating conditions and internal processes of banks. In addition, the impact on Finnish bank of the new EU Sustainable Finance Action Plan has not been studied in detail. Previous research has identified that the implementation of sustainable finance poses both threats and opportunities for banks (Rantsi, 2020). Sundqvist's research (2022) focused especially on the effects and implementation of the EU Taxonomy. Ozili Peterson (2022) developed new theories on sustainable finance, which also recognized potential disruptions of sustainable finance. The research at hand complements the previous research by finding out in more detail how regulation related to climate change is experienced in Finnish banks and creates insights on potential challenges and opportunities that follow from the implementation of climate regulation.

As the literature review (Chapter 2) will show and discuss in detail, regulation plays a significant role in shaping the landscape of sustainable finance and its implementation in the financial sector. These impacts highlight both the challenges and opportunities that arise in the context of sustainable finance based on climate-related targets and EU Sustainable Finance regulation. The key findings highlight the complex and evolving nature of regulation in sustainable finance and its impact on Finnish banks. While challenges arise in compliance and interpretation, opportunities exist for banks to demonstrate their commitment to sustainability, enhance transparency, and contribute to global climate goals. Understanding these findings is essential for Finnish banks to navigate the regulatory landscape effectively and capitalize on the potential benefits of sustainable finance practices.

Studying the effects of the EU Sustainable Finance regulation guided by global climate regulation and climate targets on banking is important because banks play a crucial role in financing the global economy, and their lending and investment decisions can have a significant impact on greenhouse gas emissions and climate change. As such, understanding the impact of climate policies on banks is crucial to achieving the goals of the Paris Agreement and addressing climate change more broadly. This study focuses on the challenges and opportunities that arise from the regulation and helps financial professionals to understand potential challenges and steps to mitigate them, as well as identify new opportunities and thus position themselves for success. The primary objective of this research is to identify and analyze the specific challenges and opportunities that Finnish banks encounter when integrating sustainable finance practices and regulations into their operations. By examining the experiences and perspectives of experts within these banks, valuable insights can be gained into the practical considerations and implications of sustainable finance in the Finnish context.

1.3 Research question

Throughout the qualitative research, the management of the project was guided by the research question **Q1: "What kind of challenges and opportunities do EU sustainable finance strategy and regulation based on climate-related targets for Finnish banks**?" The purpose of this question is to create an understanding of how the various aspects of EU Sustainable Finance Strategy and related regulation is experienced in Finnish banks, as well as to show what it takes to implement the climate targets into the financing processes.

As presented in the research findings (chapter 4), the study found that EU sustainable finance based on climate-related targets poses both challenges and opportunities for Finnish banks, as it requires proactivity and adjustment on banks' operations and objectives. In terms of climate change mitigation, the special country characteristics of Finland were also discussed in the study. At its best, the work provides practical contribution by helping financial professionals and entrepreneurs understand the new standards for more sustainable processes.

1.4 Research method

This research focuses specifically on Finnish banks and their experiences with sustainable finance based on EU regulation and climate-related targets developed after the Paris Agreement (2015). To understand this phenomenon from the perspective of the participants, a grounded theory approach with an inductive methodology was chosen. This approach involves developing theories and ideas based on qualitative data collected (Mantere & Ketokivi, 2013). The research is qualitative due to its exploratory nature.

To gather primary data, semi-structured interviews were conducted using virtual communication tools. The choice of semi-structured interviews was made to allow for flexibility in exploring various aspects related to EU sustainable finance. Five financial experts from different Finnish banks were selected as participants to provide insights into the challenges and opportunities they experience in implementing EU sustainable finance regulation and practices. The selection of these experts was based on their expertise and experience in the field, ensuring a comprehensive understanding of the research topic.

Secondary data was collected from industry literature, reports, articles, and webpages, focusing specifically on EU regulations, climate targets, sustainable finance, and corporate responsibility. These sources were valuable in providing a broader context and background information to support the findings from the interviews.

The interviews were recorded and transcribed with the permission of the participants, allowing for accurate analysis and interpretation of the data. To analyze the data, the Gioia codification methodology was adopted. The codification methodology offers a systematic and transparent approach to qualitative research and has been widely used in previous studies (Gioia et al., 2013). The analysis process involved a qualitative codification process, consisting of three levels of codification: first-order descriptive codes, second-order codes, and third-order thematic codes (Gioia et al., 2013). These codes were utilized to identify patterns, themes, and categories within the data, leading to a deeper understanding of the research topic.

By employing this methodology, the research aimed to gather new insights from the participants and the existing literature to address the research question. The findings derived from the analysis were then used to develop an explanation of the phenomenon of sustainable finance based on climate-related targets and discuss the challenges and opportunities identified in the subsequent chapter (Chapter 4).

1.5 Theoretical framework

Ozili Peterson (2022), recently developed new theories for the study of sustainable finance, after recognizing that the equations of economical actors and sustainable finance need to be better understood. For this thesis, *the Ozili's system disruption theory of sustainable finance* (2022) is adopted. According to the system disruption theory of sustainable finance, the transition to sustainable finance and the related goals will disrupt the structures of the traditional finance system and thus also the operational possibilities of companies seeking finance (Ozili, 2022).

The system disruption theory recognizes that transitioning to sustainable finance can disrupt the existing financial system (Ozili, 2022). By employing this theory, the thesis acknowledges and explores the potential disruptions that may arise in the Finnish banking sector during the transition to sustainable finance. This provides a realistic and nuanced understanding of the challenges involved. The theory also helps to understand how sustainable finance in Finland can be integrated into the existing banking landscape through exploring potential synergies, challenges, and opportunities arising from the coexistence of sustainable finance and traditional finance models. The thesis aims to extend the theory by investigating the role of policy and regulatory frameworks in addressing the challenges and supporting the opportunities of sustainable banking. The theory will be explained in detail in chapter 2.

The conceptual framework below (Figure 1) illustrates the studied concepts and theories that help to answer the research questions and the connection between them. Climate change is increasingly recognized as a pressing global challenge, leading to the implementation of new regulations across various sectors. The urgency to address climate change has prompted governments and international bodies to enact policies and regulations aimed at mitigating greenhouse gas emissions, promoting sustainable practices, and transitioning towards a low-carbon economy.

The Paris Agreement, European Green Deal, and the EU Sustainable Finance Action Plan are the main drivers of the ongoing change in financial sector, and therefore studied in this context. These regulations have significant implications for banks as they increasingly face the need to assess and disclose climate-related risks, align their lending and investment portfolios with sustainability goals, and incorporate environmental considerations into their decision-making processes. The EU Sustainable Finance Action Plan is a comprehensive and ambitious initiative developed by the European Commission. It sets out a roadmap and a series of actions to channel private capital towards sustainable investments, integrate sustainability considerations into financial decision-making, and support the transition to a sustainable economy, through the EU Taxonomy, Sustainability-related disclosures, the Green Bond Standard and the SFDR. (EC, 2018a.)

The conceptual framework (Figure 1) illustrates the interconnectedness between climate targets, regulatory measures, and the emergence of new tools that facilitate the advancement of sustainable finance. Climate targets set the overarching goals and objectives for addressing climate change. In response to these targets, regulations are developed to create a supportive policy environment and drive the transition towards a more sustainable economy. These regulations, in turn, stimulate the creation of innovative tools and mechanisms that enable the implementation and promotion of sustainable finance practices. Thus, the conceptual framework demonstrates how climate targets serve as a catalyst for the development of regulations, which in turn foster the emergence of tools that support the growth of sustainable finance.

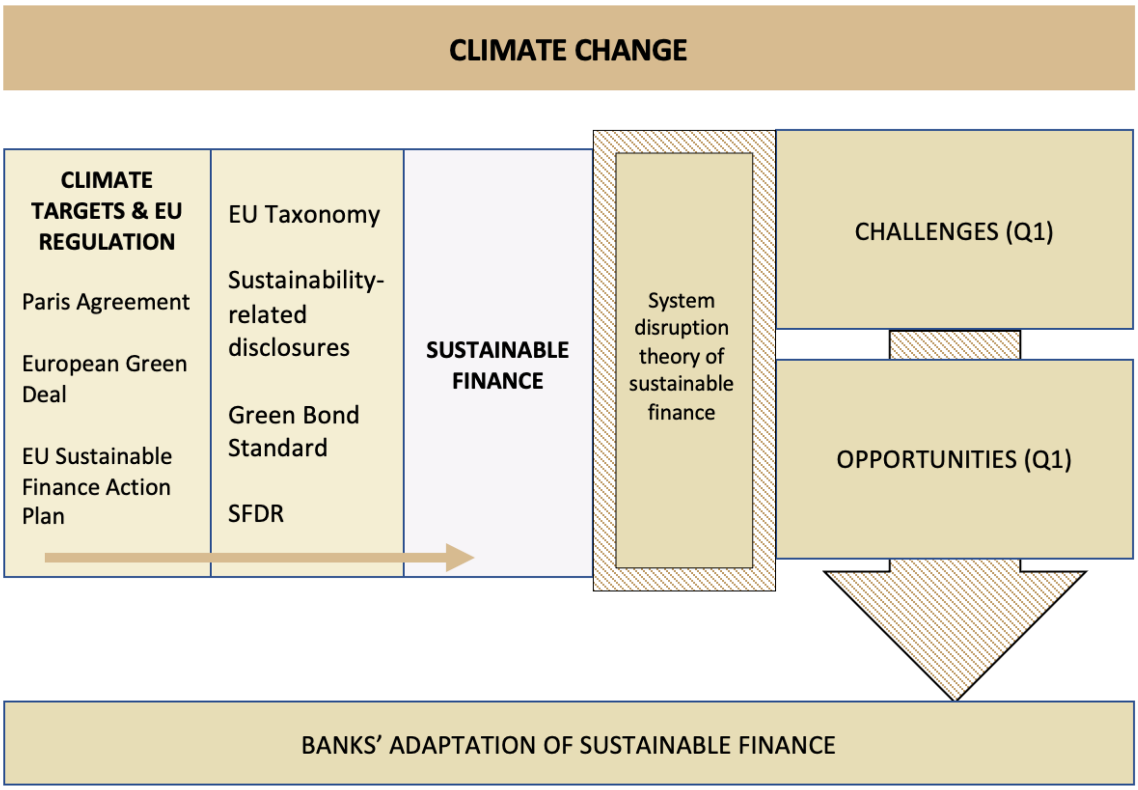

Figure 1. Conceptual framework of the thesis

The framework also demonstrates that analyzing the regulations through the lens of the system disruption theory, the potential disruptions to the financial system and the corresponding challenges faced by the financial sector in transitioning to sustainable finance can be identified. Simultaneously, this analysis reveals the opportunities arising from aligning financial activities with sustainability objectives, such as accessing new products and services, enhancing reputation, and attracting socially conscious investors. Understanding how the financial sector experts experience the issues related to sustainable finance within the context of climate regulations and the system disruption theory provides insights into the financial sector's resilience, innovation, and ability to seize opportunities in a changing landscape, ultimately informing strategies for a successful transition to sustainable finance.

1.6 Definitions

With the phenomenon of climate change, new concepts have reached industries that do not yet have a precise universal definition for all of them. In order for the concepts related to the research topic to be properly understood in this context, the following concepts are discussed in this section: sustainable finance, climate targets and corporate responsibility.

Sustainable finance is a field of finance that takes into account environmental, social, and governance (ESG) factors in investment decisions in a way that meets the long-term needs of the economy (Ozili, 2022; Virtanen & Rohweder, 2011). In this thesis, sustainable finance is defined as a framework encompassing regulatory-based standards and objectives that Finnish banks are expected to adhere to and actively participate in. According to the United Nations Environment Programme (UNEP), sustainable finance is developed to meet the

> “long-term needs of a sustainable and inclusive economy along all dimensions relevant to achieving those needs, including economic, social, and environmental issues” (United Nations, 2022).

A financing activity can be characterized as sustainable when it offers financial support to projects and activities that generate positive effects on both society and the environment, while considering the financial risks and returns associated with the investments. The goal of sustainable finance is to create long-term value for stakeholders, and to contribute to the transition to a more sustainable future. Sustainable finance deals with a wide range of activities, including financing for renewable energy projects, funding for sustainable infrastructure, and investing in companies that prioritize environmental and social responsibility (United Nations, 2022). Sustainable finance has become an increasingly important field in financial sector, as the impact of climate change and other environmental and social issues has come to the forefront of global concerns. The related regulations also provide a way for financial institutions to align their investment decisions with their values and to support the green transition.

Climate targets are goals that are set with the aim of mitigating the impacts of climate change, global warming and reducing greenhouse gas emissions (Knittel & Jones, 2021). The targets are often set as part of international agreements or national climate action plans and are used to guide and track progress towards a more sustainable and low-carbon future through metrics that are based on a variety of factors, including nationally determined contributions (NDCs), scientific evidence, economic analysis, and political considerations (Caneurope, 2022). The research at hand focuses on climate targets that are by public institutions, mainly by the European Union and United Nations. The Paris Agreement set 2 °C threshold as a temperature target for global warming (2015). This climate target is also the main driver of the regulations studied in this thesis. To contribute to the Paris Agreement, the Science Based Targets Initiative (SBTi) was developed. The SBTi, promoted by a collaborative effort between several organizations, including CDP (formerly Carbon Disclosure Project), the United Nations Global Compact (UNGC), the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF), supports climate action in the private sector by enabling organizations to set science-based emissions reduction targets (Science Based Targets, 2023a). The targets are considered as ‘science-based’ if they are

> “in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement” (Science Based Targets, 2023a).

The targets can be put into practice through different means, such as by setting a target for the percentage of renewable energy that should be used in a particular region or corporation

(Science Based Targets, 2023a). The climate targets outlined in international agreements and national climate action plans inform the financial sector's actions and decisions and guide the banks' practices towards achieving sustainability and reducing greenhouse gas emissions. These targets serve as benchmarks to measure progress and drive action in transitioning to a more sustainable and low-carbon future.

The SBTi identified challenges in setting climate targets and addressing climate impacts in the financial sector, such as the maturity of emissions accounting, coverage thresholds, availability of sector-specific methods, inclusion/exclusion of certain financial activities, and managing assets. To overcome these challenges, the SBTi is evolving a framework to enable more financial institutions worldwide to set climate targets aligned with scientific principles and promote real economy emission reductions. The framework provides guidance and support for banks to set robust climate targets and align their investments and lending activities with net-zero goals. (Science Based Targets, 2023b.)

Corporate responsibility, also known as corporate social responsibility (CSR), refers to the voluntary efforts undertaken by a company to operate in an ethical and sustainable manner. This can involve a wide range of activities, including protecting the environment, social development, and good governance. The goal of corporate responsibility is to create long-term value for both the company and its stakeholders, including employees, customers, shareholders, and the broader community. This can be achieved through a variety of means, such as reducing the company's environmental impact, supporting community development, and promoting ethical business practices. Corporate responsibility also involves transparency and accountability, including the reporting of a company's CSR strategy and efforts, and the disclosure of information about its operations and impacts. Some companies may also seek certification or recognition for their CSR efforts, such as through a sustainability reporting framework or a third-party rating system. (Koipijärvi & Kuvaja, 2020.)

A company's responsibility strategy can be analyzed through "inside out" (the company understands the climate effects of its operations) and "outside in" (the company understands what stakeholders, legislation and the agreement require) approach (Morse, G., 2007). This analysis not only helps to implement climate objectives into the strategy, but also improves companies' risk management related to climate change. Defining guidelines and adopting a strategy alone is not enough, but advanced reporting is also required from the company.

Socially responsible investment (SRI) refers to an investment approach that takes into account both financial returns and the social and environmental impact of investment decisions and involves the consideration of ESG factors alongside traditional financial analysis when selecting investments (Sparkes, 2002). The goal of socially responsible investment is to align investment portfolios with the values and objectives of investors who seek to promote positive social and environmental outcomes (Berry & Junkus, 2013). SRI strategies can involve investing in companies that demonstrate responsible business practices, prioritize sustainability, support social justice, or contribute to community development, but it may also include avoiding investments in industries or companies involved in activities deemed harmful, such as fossil fuels, tobacco, or weapons production (Sparkes, 2002). The primary aim of socially responsible investment is to generate long-term sustainable returns while making a positive impact on society and the planet, which is especially highlighted in the latest strategy of the Finnish Financial Supervisory Authority (Financial Supervisory Authority, 2022b).

1.7 Limitations

The qualitative research method itself is often subjective, as it relies on the researcher's interpretation and understanding of the data (Metsämuuronen, 2006). This can lead to potential biases and perspectives that may influence the results of the research. Banks have recently received a lot of media attention about their role in influencing climate change, and this may provoke survey respondents to be cautious in their responses. Sustainable development, and climate change in particular, is vulnerable to the impact of individuals' personal opinions. In addition, the interview situation as a data collection method, also creates a setting in which personal tendencies can be emphasized in the responses (Hirsjärvi et al., 2009). This limitation could potentially skew the data towards more positive or socially desirable responses, while downplaying challenges or alternative perspectives. To minimize the impact on the outcome, the researcher decided to ensure confidentiality through anonymity, and thus encourage honest responses. The interview settings appeared to foster an atmosphere of openness and non-judgment, allowing the interviewees to respond candidly and generously. Hence, the identified limitation does not overshadow the research findings significantly.

In addition. the researcher's strong advocacy for climate-friendly solutions may introduce a bias that leans towards highlighting the positive impacts and opportunities of sustainable finance in addressing climate change. To mitigate the potential biases, the researcher utilized the triangulation method (Bhandari, 2022). Self-reflection, utilization of multiple data sources and comparing findings with existing literature helped to ensure consistency and minimized the influence of the advocacy.

Furthermore, it is important to acknowledge that language poses a limitation to both the research process and the resulting findings. The literature review was conducted using English- and Finnish-language sources, while the empirical research was carried out in Finnish and subsequently translated into English. Due to the translated quotes, the potential for interpretation errors cannot be entirely ruled out.

1.8 Structure of the Thesis

The contents of this master's thesis are divided into five different chapters. The purpose of the arrangement is to first familiarize the reader with the concept and regulation related to the phenomenon, as well as the research methodology. Finally, the findings and conclusions of the study will be reviewed.

Chapter two comprehensively explains the topic of sustainable finance through a literature review, focusing on what is already known about the studied phenomenon and how it affects the operations and processes in banks. The purpose of the section is to facilitate the understanding of the research context, as well as the related regulation.

Chapter three provides a detailed description of the design and methods of the study. The section briefly introduces the research context, and in more detail the data-collection and analysis methods. In addition, the Gioia methodology used in the study is presented. Finally, the chapter evaluates the validity and reliability of the research, as well as the course of the research process.

In the fourth chapter the research findings are discussed. The chapter comprehensively reviews the results of the research analysis and explains their origin. The identified challenges and opportunities are discussed and explained in detail.

Finally, chapter five focuses on the comparison of literature and research findings and the conclusions drawn from them. In addition, the results are compared to previous research and the theory presented in chapter two, is extended. The section contains a summary of factors that aim to comprehensively answer the research questions. In addition, recommendations for future research are given.

2 Literature review

This chapter is divided into a context of analysis and a literature review. The context of analysis creates a thorough comprehension of the background and context of climate change and related regulations. Delving into the regulatory landscape surrounding climate change is paramount for comprehending the specific challenges and opportunities encountered by banks. The reference to prominent policy initiatives such as the UN Paris Agreement (2015), the European Green Deal, the EU Action Plan, and the Sustainable Finance Package underscores the regulatory drivers shaping the expectations and requirements for banks in tackling climate change. Understanding these policy frameworks allows the reader to grasp the broader context within which banks operate and make informed decisions. It also helps the reader to understand the significance of the findings presented in the thesis.

The literature review section focuses on the current status of sustainable finance in Finland. It covers the most relevant sustainable finance theories and an examination of previous studies that have explored the challenges and opportunities associated with implementing sustainable finance in Finland. By reviewing the existing literature, the chapter provides an overview of the research conducted in this field, offering valuable insights into the specific context of sustainable finance in Finland and the related challenges and opportunities.

To conduct the literature review, a keyword search was performed using the LUT Primo databases, with a primary focus on SCOPUS and Web of Science (WoS). The selected keywords for the search included: Sustainable finance, EU Sustainable Finance, and ESG.

The literature review yielded a collection of relevant studies and articles pertaining to various theories within the field. By utilizing these databases and specific keywords, the literature review was able to capture a decent range of scholarly works, providing a foundation for exploring the theories and concepts associated with sustainable finance. The review ensures that the thesis is built upon a robust and well-informed understanding of the existing research and literature in the field.

Overall, these two sub-chapters contribute to a solid foundation of knowledge and understanding, setting the stage for the subsequent analyses and findings presented in the thesis. They establish the context, policy framework, and theoretical underpinnings necessary for a comprehensive exploration of the challenges and opportunities surrounding climate change and sustainable finance within the banking sector in Finland.

2.1 Context of analysis: Global climate targets and the EU regulation on sustainable finance

Climate change is possibly the biggest global challenge that humanity has ever faced. During the years 1996, 1997, and 1999, there were more than twice as many hurricanes in the United States as the annual average in the 20th century (Flannery & Rekiaro, 2006). In Europe, the summer of 2003 was so hot that statistically it should only happen once in 46000 years (Flannery & Rekiaro, 2006). On the level of the entire globe, flood damage today causes harm to approximately 150 million people, while in the 1960s the corresponding number was 7 million (Flannery & Rekiaro, 2006). It is evident, that climate change is a threat to economic growth. Therefore, political, administrative, and lifestyle measures need to be applied in order to keep global warming under control. To protect the environment and the life of future generations, these measures need to be integrated into national and international sustainable development strategies and targets.

The past eight years have been the warmest in the world, and according to a report by the World Meteorological Organization (WMO), the year 2022 was one of the warmest in the history of measurements (2022). In 2022, the average temperature was 1.15 degrees higher compared to pre-industrialization (WMO, 2022). Compared to the Paris Agreement that entered into force in 2016 (United Nations, 2015b), where the target limit for global warming was set at 1.5 degrees, the difference is no longer very large (WMO, 2022). It is clear that achieving the target will be extremely challenging, if not completely impossible.

Climate change and the banking sector

Addressing climate change promptly is crucial due to the escalating global warming and the potential costly consequences for societies. The longer prevention measures are delayed, the greater the financial burdens will be (Virtanen & Rohweder, 2011). These costs primarily impact future generations, emphasizing the intergenerational responsibility to act now (Urry & Vainonen, 2013). The studies suggest that failure to limit global warming in the future could result in a significant reduction, estimated at five percent annually, in the world's gross domestic product (Virtanen & Rohweder, 2011). Such economic ramifications have direct implications for the banking sector, as financial institutions are intricately tied to the overall health and stability of the economy.

In recent years, the role of the financial sector in addressing climate change has gained significant attention and recognition at climate conferences, such as the Conference of the Parties (COP) under the *United Nations Framework Convention on Climate Change* (United Nations, 2015a). The financial sector is seen as a crucial player especially in mobilizing resources and driving the transition to a low-carbon and climate-resilient economy (United Nations, 2015a).

For example, in 2022, during COP27 held in Egypt, a significant development took place with the establishment of the Loss & Damage Fund. This fund serves as a crucial financial mechanism aimed at providing assistance to nations that are most vulnerable and economically disadvantaged, suffering the impacts of climate change. The fund specifically focuses on supporting poorer countries that are disproportionately affected by climate change, offering them financial aid to address and mitigate the loss and damage caused by these adverse effects. (COP27, 2022.)

The broader discussions and initiatives related to climate change and sustainable finance at COP conferences indirectly influences the practices of the banks in terms of environmental risk assessment, sustainable investments, and climate-related disclosures. Hence, it is crucial for the Finnish banking sector to actively stay informed and engaged with the ongoing international climate discourse. By integrating climate policies into their operations, strategies, and decision-making processes, Finnish banks can better navigate the challenges and opportunities presented by climate change. It also positions them to contribute to broader sustainable development goals and support the transition to a low-carbon economy.

A successful climate policy should integrate emission reduction targets with sustainable development goals, fostering the concept of green growth (Virtanen & Rohweder, 2011). This approach aligns with the aspirations and priorities of the Finnish banking sector, which plays a vital role in driving sustainable economic development within the country (Financial Supervisory Authority, 2022b). By recognizing the urgent need for fast climate action and understanding the potential economic consequences of inaction, the Finnish banking sector can align its strategies, investments, and services with sustainable practices.

The interconnectedness between fast climate action, the cost of climate change, and the future well-being of the Finnish banking sector highlights the importance of integrating climate considerations into the sector's decision-making processes and operations. By embracing a proactive approach, the banking sector can contribute to a sustainable and resilient future while mitigating potential economic and financial risks associated with climate change.

Responsible Investment

ESG (Environmental, Social, and Governance) factors and **socially responsible investment (SRI)** are driving a transformation in traditional banking and investment. Banks are increasingly recognizing the importance of integrating ESG considerations into their operations and investment decision-making. This shift reflects a growing awareness of the impact that environmental and social issues, as well as corporate governance practices, have on long-term business sustainability and risk management. Banks are incorporating ESG criteria in their lending practices, evaluating the environmental and social impacts of potential borrowers. Additionally, banks are offering SRI products and services to cater to the rising demand from investors seeking to align their investments with their values. This transition towards ESG and SRI is reshaping the banking industry, promoting a more sustainable and responsible approach to finance that goes beyond traditional financial metrics.

SRI involves incorporating environmental, social, and governance (ESG) factors into investment decision-making. The chapter examines the key principles and strategies of SRI, its potential benefits, and its relevance in the context of sustainable finance. Sparkes (2003) highlights key principles that underpin socially responsible investment, which include ethical screening, positive screening, engagement and active ownership, and impact investing. (Sparkes, 2002.)

Ethical screening involves excluding companies or sectors involved in controversial activities, aligning investments with investors' values. Positive screening focuses on selecting companies with strong ESG practices that contribute to sustainable development. Engagement and active ownership encourage investors to advocate for improved ESG performance and transparency by engaging with companies and participating in dialogues. Impact investing seeks investments that generate measurable social or environmental benefits alongside financial returns. (Sparkes, 2002.)

SRI offers several potential benefits. It allows investors to align their investments with their values and support companies that promote sustainability and social responsibility. Integrating ESG factors into investment analysis can help identify and mitigate potential risks, protecting investors' portfolios. SRI also emphasizes long-term value creation by identifying companies with sustainable business models. However, SRI is not without criticisms. Some argue that it may limit investment options or result in lower financial returns. There are ongoing debates regarding the effectiveness of exclusionary screens and the subjectivity of ESG ratings. Despite these criticisms, the growing interest in SRI indicates its increasing relevance and potential to positively influence corporate behavior. (Sparkes, 2002.)

ESG in the financial markets

Europe is leading the statistics of sustainable fund flows (Boyde, 2023). The European Union is also leading the establishment of rules for ESG rating agencies together with the U.K. (Clarke, 2022). However, the past year has been mixed for advocates of sustainable investing. In the US, ESG funds have even been described as instruments of "awakened capitalism" (Boyde, 2023). As climate change is an important social issue, it causes overstatements among many executives, who assume that ESG is a "safe topic to exaggerate" (Clarke, 2022). Suspicions of greenwashing have made headlines both in the US and in Germany, when Goldman Sachs had to pay fines imposed by the US Securities and Exchange Commission due to procedural errors, and the German fund manager DWS was under investigation as a suspect of "prospectus fraud" when a whistle-blower brought up shortcomings in the ESG strategy (Boyde, 2023, Clarke, 2022). This isn't the first time DWS has hit the headlines as a result of similar allegations. In 2021, Desiree Fixler, a former head of Sustainability stated that DWS has overstated sustainability metrics and it was in question, how much of DWS's assets under management actually deserved an “ESG” or green label (Kowsmann et al., 2021). In addition, BlackRock, Vanguard and other asset managers have been accused of ESG issues (Clarke, 2022). In fact Vanguard recently exited the Net Zero Asset Managers initiative, which is the world’s largest climate finance group (Boyde, 2023, Clarke, 2022). This indicates how challenging the balancing act of implementing sustainable finance and related regulations is in practice. In addition, bad publicity tends to damage the image of banks in the midst of intensifying competition (Boyde, 2023).

However, it has been suggested that increasing regulations and intensifying competition will not curb the demand for sustainable investment. Therefore, with increased accusations of greenwashing, banks have to exercise special caution in marketing new funds, which may result in a decline in the total number of ESG products despite the increase in demand. (Paige, 2022.)

As the above indicates, the global demand for ESG funds has been unprecedented. Consumer demand for green products has only grown during 2022, which accelerates uptakes among banks (Paige, 2022). On the other hand, customers are also increasingly leaving their banks due to bad environmental and social results (Paige, 2022). In addition, it is recognized that sustainability factors also affect the competition for employees, as a large part of the workforce wants to work in companies with a strong ESG policy (Paige, 2022). This clearly demonstrates the growing demand, that creates challenges for financial institutions to keep up with the changing conditions and to understand how all the expectations need to be met.

Procedural errors and greenwashing are often the result of misuse of ESG labels. It may be intentional, but the interpretation caused by strict regulation also poses challenges for financial operators. It has been argued that although stricter regulation is expected to clarify things for investors, it seems that the interpretation won't become any easier in the near future, and that the regulation is still likely to grow (Boyde, 2023, Paige, 2022). In addition, doubts have arisen that regulators have underestimated the level of complexity and the confusion that the regulations have brought (Boyde, 2023).

Although the EU regulatory authorities have tried to clarify the interpretation of the regulation significantly, there is still a lot of work ahead. In addition, although the reporting directive in principle obliges companies to provide responsibility information, there has been a chronic lack of ESG data, according to the European Fund and Asset Management Association (Boyde, 2023). This brings more challenges to financial sector actors, when they try to collect responsibility information from companies. In addition, although EU regulation has increased transparency and the amount of available data, it alone is not enough to solve all problems. In particular, the reliability of sustainability metrics and the quantification of environmental impact data are highly debated (Clarke, 2022). In addition, the question has arisen about whether the financial sector can actually achieve the set targets. A recent study found that, for example, socially responsible investment funds do not actually improve the environmental or social behavior of their target companies (Boyde, 2023). Seen from these perspectives, the importance of transparency and access to information will be emphasized even more in the coming years.

Climate-related risks

In addition to environmental and social issues, climate change also influences the economy, since the effects of global warming lead to costs (Virtanen & Rohweder, 2011). For financial institutions, climate change creates two types of financial stability risks: material losses caused by extreme weather events and transition risks resulting from the transition away from high-emission business models (Bank of Finland, 2022). These risks create new kinds of challenges, with which the banks must learn how to operate. An example of a physical risk is the increasing occurrence of floods, which can have detrimental effects on the properties financed by banks or used as collateral for loans (Financial Supervisory authority, 2022). Transition risks, on the other hand, manifest in situations where companies face adaptation costs or experience losses due to pricing changes related to climate change (Financial Supervisory authority, 2022). On the other hand, successful climate policies create new opportunities and revenue streams, through new innovations and areas of business.

Recognizing and understanding these risks is crucial for banks, as the European Central Bank's banking supervision assesses banks' preparedness for such risks through the Supervisory Review and Evaluation Process (SREP) (ECB, 2022). In the supervisory work of sustainable finance, the Finnish supervisory authority makes use of the climate and environmental risk management guide published by the ECB in 2020 (Financial Supervisory Authority, 2022b). However, a recent study highlights, that banks currently lack sufficient information about their climate risks and that their own climate risk stress tests are not consistently conducted (European Central Bank, 2022). This suggests a need for improved awareness and assessment of climate-related risks within the banking sector.

Due to the need for improved risk management, the banking industry demands a novel form of expertise, especially in the context of sustainable finance. Therefore, it is worrying that the rise in the educational level of the younger generation has stopped (Articles on the Economy, 2022). Alongside the escalated demand for internal knowledge within banks, the industry requires the ability to urge companies towards environmentally friendly business practices, while identifying investment opportunities that facilitate sustainable growth. Furthermore, it is of great importance to build faith in sustainable fiscal policies and strengthen the prerequisites for sustainable economic growth (Rehn, 2022).

Finland: Banking Industry and Market Characteristics

Finland has set the world’s most ambitious climate target in law (Lo, 2022). The Finnish government justified the law to the global public by saying, that high-income countries have to take an active role in terms of mitigating climate change (Lo, 2022). Finland is trying to achieve net zero emissions, in 2035, and become net negative by 2040. According to the Climate Change Act (2015 & 2022), Finland must reduce its greenhouse gas emissions by at least 90% by 2050 from the levels in 1990. The Climate Act sets the targets and framework for planning Finland's climate policy and monitoring its implementation. The original climate act entered into force in 2015, but in 2022 the act underwent a reform. The previous climate act contained an emission reduction target only for the year 2050 (80% emission reduction), but according to 2022, Finland is aiming for a 60% emission reduction target by 2030, an 80% reduction by 2040 and a 90% reduction by 2050, however aiming for 95% (compared to the baseline of 1990s) (HE 239/2022). The targets are based on the recommendations of the Finnish Climate Change panel and are set to guide climate work long-term and are obligatory beyond election periods. (Ministry of the Environment, 2023a; 2023b)

Banking in Finland is highly regulated with national laws and standards. The Finnish Financial Supervisory Authority supervises the operations of banks, especially the solvency and liquidity requirements. The purpose of the regulation is two-fold, as its purpose is to ensure banks' liquidity position and risk management, but also to improve the protection of the rights of bank depositors and the bank's other creditors by limiting the banks' debt leverage and by increasing the minimum equity requirements and liquidity buffers (Ministry of Finance, 2023). In its 2020-2022 strategy, the Financial Supervisory Authority has three priorities: digitalization, climate change and preventing money laundering.

Making climate change a priority reflects its growing importance for the risks and regulation of industry players. In accordance with its strategy, the authority requires that those supervised assess the effects and risks of climate change and climate policy on their operations, which in turn is reflected in increased reporting requirements (Financial Supervisory Authority, 2022b). In Finland, according to the Accounting Act (2023), the reporting requirement applies to banks and insurance companies, as well as listed companies that employ more than 500 people on average. Recently, however, the scope of reporting has expanded. For example, companies must produce responsibility reporting if they wish to get a better price for their loan and in some cases, large companies force their subcontractors to report on responsibility issues that are central to their operations, due to their own reporting obligations (Taloushallintoliitto, 2023).

Finland's forests and decisions related to their management have a significant impact on whether the country achieves its climate targets. Statistics Finland recently published figures showing that for the first time, Finnish forests released more greenhouse gases than they absorbed, as a result of emissions from deforestation (Lo, 2022). In other words, trees were cut down faster and planted slower. On the other hand, internationally, Finland has a great opportunity to influence climate change through the use and protection of forests. In fact, Finnish forestry companies are already involved in the decision making on global carbon sink policies (Virtanen & Rohweder, 2011).

Forests and wood-based products play an essential role in achieving Finland's ambitious climate targets and in generating prosperity for the entire country (Ministry of Agriculture and Forestry, 2021). Therefore, the forestry decisions made on EU level might significantly affect Finland's economy. For example, the decisions related to the management of forests have been under heated discussions recently (Ministry of Agriculture and Forestry, 2021). Therefore, for example banks that invest in forestry might be affected by the political decision-making. Despite the fact that forest policy belongs to the decision-making power of the EU member states, The EU Forest strategy has been prepared in a way that does not allow the usual participation of the member countries in the preparation. The recently published strategy emphasizes compliance with the principle of proximity and respect for the jurisdiction of the member states, but in many respects the strategy goes beyond the jurisdiction of the member states (Ministry of Agriculture and Forestry, 2021). This limits the national freedom to determine the management of forests in accordance with the NDCs and thus also increases the risk from the perspective of the forest financier.

There are also other reasons for the Finns to be concerned about their efforts on reaching climate targets. The carbon footprint of one Finn is, on average, about 12.6 CO2e tons per year, i.e., slightly more than three times as large as the carbon footprint of the world's average inhabitant, which places Finns as one of the nations that burden the climate the most (Virtanen & Rohweder, 2011).

Sustainability and global climate crises

The global COVID pandemic that started in 2019 made several companies commit more concretely to solving social problems, such as inequality, but on the other hand, the disruption of supply chains, the decrease in liquidity and the economic crisis that followed them have again emphasized the importance of seeking profits (Pacces, A.M., 2021). In terms of sustainable future and existence of companies, the key factor will be the ability of these companies to prepare for unexpected crises. According to Ferrarini (Pacces, A.M., 2021), the pandemic and climate change are connected by the fact that they concretize the transformation of external distractions into socio-economic drivers. Like the COVID-19 pandemic, the climate crisis may also cause shocks to an increasing extent, related to supply and demand conflicts and supply chain problems. These issues also threaten the operations of banks, through direct or indirect consequences. Therefore, companies should strive for an "antifragile" approach to be able to succeed in the uncertain operating environment of the future (Pacces, A.M., 2021).

In addition to the pandemic, other world events, such as geopolitical conflicts, also have a multidimensional effect on the operations of financial institutions. The years of crisis have shown how important it is to have sufficient room for maneuver in fiscal policies (Rehn, O., 2022c). Payment difficulties of companies and individuals shake the solvency of banks and force more flexible solutions, which must still be sustainable in terms of the future. In addition, due to the unfortunate situation in Ukraine and the resulting energy crisis, Europe's and Finland's security political and economic operating environment is currently undergoing a severe transition (Rehn, O, 2022c). The financial sector must simultaneously solve both short-term and long-term challenges and learn to recognize new risks that potentially threaten operations. Unfortunately, especially in terms of the climate challenge, banks do not yet have sufficient information about their climate risks, and their own climate risk stress tests are not systematically carried out (ECB, 2022). Therefore, recognizing and managing new kinds of risks and challenges, must be further developed in banks.

In order to achieve success in sustainability efforts, it is crucial that professionals from various industries possess knowledge about climate change and strategies to mitigate it. Thus, education plays a vital role in ensuring that future experts are equipped to consider these factors in their work (Virtanen & Rohweder, 2011). Hopefully, these past occurrences have enlightened authorities and corporations to perceive the extent to which global crises can jeopardize financial institutions. It is imperative to assess the measures necessary for risk management in sustainable finance.

International agenda and EU regulation on climate change

The sustainable development work of all countries is guided by the **Agenda 30**, which is a global action program for sustainable development agreed at the UN in 2015 (United Nations, 2015a). The Agenda 30 continues to serve as a background tool for sustainable development through 17 goals that countries should achieve together by 2030. The report highlights the interdependence of the goals and the fact that environmental, social and economic sustainability must be considered together. The achievement of the goals is measured annually with the SDG index published in the Sustainable Development Report (SDR). The index describes Governments' Commitment and Efforts for the SDGs. In 2022, Finland ranked number 1 in the ranking (Sachs et al., 2022).

The Intergovernmental Panel on Climate Change (IPCC) regularly releases reports that assess the latest scientific research on climate change. The IPCC report on climate change is a widely used and often cited basic work in the global climate change debate (Virtanen & Rohweder, 2011). The report is an essential development tool in the work of sustainable finance initiatives as well. These reports provide a comprehensive overview of the state of the climate and the potential impacts of different levels of warming. They also provide policy makers and other actors with recommendations for reducing greenhouse gas emissions and mitigating the effects of climate change. The latest IPCC report, AR6, was released on April 2022. The key takeaways of the report were related to the risks of global warming, impacts on human and natural systems, and policy options for limiting warming to well below 2 degrees Celsius and pursuing efforts to limit warming to 1.5 degrees Celsius above pre-industrial levels (IPCC, 2022). In addition, the increasing importance of financial institutions was emphasized. According to the report, although the amount of climate finance has increased since the previous report (AR5), the financial flows are still insufficient at the global level and limit the implementation of adaptation options (IPCC, 2022). The report also underlined the importance of public and private sector cooperation. Both public and private financial resources can be effectively used when supported by institutions with strong knowledge on climate adaptation (IPCC, 2022). In addition, to develop the cooperation, the public sector should facilitate the finance of the private sector by addressing, for example, regulatory obstacles (IPCC, 2022).

The main objective of the European Union is to reach climate neutrality by 2050. **The European Green Deal** is the EU's strategy for reaching the 2050 goal. The EU's climate targets are dealt through with the help of the Fit for 55 package. The initiative aims to translate the objectives of the Green Deal into law. The package is a set of proposals to revise and update EU legislation and introduce new programs to ensure that EU policies are in line with the climate goals agreed by the Council and the European Parliament, with particular reference to the goal of reducing net greenhouse gas emissions by at least 55% by 2030. First, the proposals of the package are presented and discussed at a technical level in the Council's working groups responsible for the policy area in question, after which they are submitted to the ambassadors of the EU member states for consideration in the committee of permanent representatives. Discussions are held so that the 27 member countries can reach an agreement on the proposals. (European Commission, 2021.)

Regulation on climate is constantly increasing and evolving and in fact, it is most advanced in the EU (De Francesco, 2022). Finland, as a member country of the European Union, is hugely affected by the EU legislation. Administrative climate policy control tools are international agreements, directives, standards and support systems set by the EU, goals and policies set by Finland nationally, and locally and regionally agreed targets (Virtanen & Rohweder, 2011). The EU regulation has been a significant enforcer in advancing responsibility and environmental issues globally (Boyde, 2023). In addition, sustainable finance has been among the top priorities of EU regulation since 2018, when the European Commission published the **EU Action Plan for Sustainable Finance** (Pacces, A.M., 2021). This also prompted the national authorities of the financial sector to shift their attention to sustainability regulation.

The decisions made at the EU level have a substantial impact on Finland's economy, both positively and negatively. Notably, investments worth billions in sustainable energy projects contribute to Finland's economy, but political determinations, such as classifying specific energy sources as green, can significantly affect investment flows. In 2022, the EU concluded that nuclear power and natural gas would be considered as green energy, a crucial decision given that nuclear energy plays a significant role in Finland's emission-free energy production (Sutinen, 2022; Husu, 2022). However, the validity of these decisions is sometimes questioned, particularly regarding the sustainability of natural gas as an energy source, which contradicts climate goals (Husu, 2022). Additionally, decisions regarding forests raise concerns among Finnish forest owners since forest-based industries are a substantial part of Finland's economy (Jaakkola et al., 2022).

In 2022, the EU introduced a forest strategy as part of the Fit for 55 package, aiming to ensure sustainable forest ecosystems in Europe (Butcher, 2021). The level of decision-making power granted to member countries in forest management policies is a significant concern (Koivistoinen, 2021). However, the stated purpose of the forest strategy is to provide comparable information on different forest management approaches and prioritize methods that preserve biodiversity and sequester carbon (Koivistoinen, 2021).

The above discussion highlights the controversial nature of EU regulations for member states, particularly in terms of national sovereignty. Nonetheless, Finland actively participates as a member country, and its positions are regarded seriously by other member countries. The regulations, targets, investment decisions, and policies related to industries of importance to Finland also exert a substantial influence on the operations of Finnish banks.

2.1.1 The Paris Agreement and Climate targets

The Paris Agreement is a legally binding international treaty on climate change. The agreement was negotiated in Paris in 2015 and entered into force in 2016. The main goal of the agreement is to limit global warming to two degrees compared to pre-industrial levels - however, aiming to limit warming to 1.5 degrees Celsius. Climate neutrality is aimed for by 2050. The Paris Agreement is the first binding agreement that unites ambitious efforts and all nations to solve a global problem. (United Nations, 2015b; United Nations, 2023.)

Climate targets are goals that countries, organizations, and businesses set in order to reduce their greenhouse gas emissions and address climate change. These targets can be expressed in terms of the amount of emissions that should be reduced, the percentage of renewable energy that should be used, or the level of temperature increase that should be avoided (Virtanen & Rohweder, 2011). Determining global and national climate targets is important, but in practice the decisions only become concrete locally, for example within municipalities or companies. Companies can implement the climate responsibility aspect as part of their strategy, or their entire business idea can be based on offering climate-friendly products or services (Virtanen & Rohweder, 2011).

Reducing greenhouse gas emissions and avoiding a temperature increase of more than two degrees requires societies to pay a lot of attention to non-fossil fuels, in other words, in decarbonizing the economy. At the moment, climate targets are largely aimed at reducing greenhouse gases. In fact, according to research, forested areas account for up to 15% of human-caused greenhouse gas emissions (Virtanen & Rohweder, 2011). Therefore recently, special attention has been paid to reducing deforestation as a means of controlling climate change. From Finland's point of view, this information, and the EU's decisions on forest policy, are significant, because the forestry industry is considered very important to Finland. For example, the LULUCF directive obliges the member countries to report on how they foresee the future development of the carbon stocks of forests, fields and bogs located in their territory, because according to the directive, the member countries must ensure that their carbon sinks are greater than the carbon emissions caused by land use (Isomäki, 2021).

The climate targets are crucial for providing a framework and direction for climate action, encouraging countries and organizations to work towards a low-carbon and climate-resilient future. The targets typically focus on limiting the increase in global average temperature, as outlined in the Paris Agreement. Regular monitoring and review processes are in place to assess progress towards meeting these targets and to encourage increased ambition over time. The European Commission has set an ambitious and cost-effective path to achieving climate neutrality by 2050 through the 2030 Climate Target Plan (EC, 2022m). The authorities have set up multiple tools to help reaching the targets and reduce emissions, such as the carbon price, implemented through a carbon tax or a cap-and-trade program (Knittel & Jones, 2021).

In the financial sector targets might deal with reducing the greenhouse gas emissions associated with the banks' operations and financing activities by increasing energy efficiency, transitioning to renewable energy sources, and supporting the development of low-carbon infrastructure (Science Based Targets, 2023b). In addition, the banks are expected to support the transition to a low-carbon economy in other manners, such as financing projects and activities that have a positive impact on the environment and climate and making investments in renewable energy, sustainable infrastructure, and companies that prioritize environmental and social responsibility. In addition, promoting the use of green bonds and other sustainable financial instruments, as well as disclosing and reporting on climate-related risks and opportunities, will help the banks to implement sustainable means into their operations. In addition, it allows the banks to better understand and manage the potential impacts of climate change on their business.

To help the financial sector to comply with the climate targets, UNEP FI developed the Portfolio Impact Analysis Tools (2022) for banks. The objective of the tool is to help the banks identify their most significant impact areas and determine priorities, which again helps the banks to develop their strategies development and target-setting (United Nations, 2022). In addition, the SBTi created a Finance Framework for financial institutions, to help the banks set science-based targets that align their investment and lending activities with the Paris Agreement (SBT, 2022c).

2.1.2 The European Green Deal

The European Green Deal is a package of measures announced by the European Commission in 2019 with the goal of making the European Union climate neutral by 2050. The deal aims to transform the EU into a modern, resource-efficient, and competitive economy, while also ensuring that the transition to a low-carbon society is just and inclusive (European Commission, 2021).

The key objective of the European Green Deal is to make Europe climate neutral by 2050 and to reduce greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels (European Commission, 2021). To make the emission reduction target more reachable, the

EC made it legally binding through the European Climate Law. Also, to build the pathway towards the target, the EC also developed a 2030 Climate Reduction Plan. (EC, 2022j). The 2030 Climate Target Plan is leading the way towards more sustainable Europe (EC, 2022m). The 2030 Climate and Energy Framework, in particular aims to achieve the targets especially through three pieces of EU legislation: the EU Emissions Trading System (EU ETS), the Effort-Sharing Regulation (ESR) and the LULUCF Regulation (addressing land-based emissions) (Caneurope, 2022).

The Green Deal includes a plan to invest in clean, energy-efficient infrastructure and to accelerate the deployment of new technologies such as electric vehicles. The Green Deal also takes other sustainability measures into account to protect and restore biodiversity, increase the circularity of the economy and to support workers and communities affected by the transition to a low-carbon economy. (European Commission, 2021.)

The European Green Deal is seen as a key component of the EU's efforts to address climate change and transition to a more sustainable future. It is also intended to serve as a model for other countries around the world to follow in their own efforts to reduce greenhouse gas emissions and transition to a low-carbon economy. (European Commission, 2021.)

2.1.3 EU Sustainable Finance Action Package and SFDR

The sustainable finance action package was developed to support the European Green Deal and is based on the idea that the financial sector has a crucial role to play in supporting the transition to a more sustainable and low-carbon economy, and that it can do so by redirecting capital towards sustainable investments and supporting the development of new sustainable technologies. The action plan helps institutional asset owners to compare and monitor the sustainability characteristics of investment funds by standardizing sustainability disclosures and provides a common framework for investors to assess the sustainability of their investments. (European Commission, 2018a.)

In addition to redirecting investment flows towards sustainable destinations, the main objective of the plan is to integrate sustainability to risk management and to foster transparency and long-termism in financial activities (PRI, 2018). A core part of the Action

Plan is the **Sustainable Finance Disclosure Regulation** (SFDR), which was especially developed to increase transparency around sustainability claims, to prevent greenwashing and to improve informed decision-making (Regulation EU 2019/2088, 2019). The SFDR has been in effect since March 2021 and sets out rules for financial market participants and financial advisors to disclose information on the environmental, social, and governance (ESG) factors of their investment products (Regulation EU 2019/2088, 2019). To comply with the SFDR, banks may need to assess their existing practices, policies, and reporting systems to ensure they align with the regulation's requirements. They may also need to work with their investment teams, data providers, and other relevant stakeholders to collect the necessary sustainability-related information for disclosure purposes. This highlights the importance of data availability and transparency.

2.1.4 EU Taxonomy

The EU Taxonomy is a classification system that was developed by the European Union to provide a common language and a consistent methodology for assessing the environmental sustainability of financial products. The taxonomy is intended to direct investments to climate-sustainable targets (Husu, 2022) The framework is a part of the EU's Action Plan on Sustainable Finance. The Taxonomy sets out six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. At this point, however, only the first two have been launched into use. (Regulation EU 2020/852 2020; European Commission, 2023b.)

According to the taxonomy criteria financial products can be classified as "sustainable" if they contribute significantly to at least one of these environmental objectives and do not significantly harm any of the others. The criteria for determining whether a product meets these criteria are set out in technical screening criteria, which are based on internationally recognized standards and methodologies. (Regulation EU 2020/852 2020; European Commission, 2023b.)

The EU Taxonomy has the potential to play a significant role in encouraging the transition to a more sustainable financial system. It can help investors to identify and select financial products that align with their sustainability goals, and it can incentivize companies to adopt more sustainable practices, as they may be more attractive to investors if they meet the criteria set out in the Taxonomy. However, it may also pose challenges for some companies, particularly those that operate in sectors that have traditionally had a high environmental impact, as they may struggle to meet the criteria set out in the Taxonomy. (Gaia, 2021.)

2.2 Sustainable Finance Theories and previous research in Finland

Sustainable finance and its effects have been studied in Finland before. The study by Rantsi (2020) found, that sustainable finance creates both, challenges, and opportunities for Finnish banks. The findings of the research indicate that sustainable business finance plays a crucial role in channeling funds to environmentally significant projects, and its importance is expected to grow further with initiatives like the EU's sustainable finance plan. Sustainable business financing involves integrating ESG principles into the financing process, resulting in greater transparency, versatile reporting, and improved understanding of client companies, leading to better risk management. (Rantsi, 2020.)

Rantsi (2020) also discovered, that the distinctions between sustainable and conventional business finance include precise allocation of funds, stricter reporting, and the potential to tie loan margins to predefined sustainability goals. While sustainable business finance is generally more affordable, failure to meet sustainability goals may increase costs. The research also highlights the use of responsibility reporting, certificates, and metrics to identify and measure sustainable business operations. (Rantsi, 2020.)

However, resource limitations make it challenging for financiers to monitor the implementation of sustainability practices in detail. The benefits of providing sustainable finance include supporting low-carbon projects, enhanced reporting, better risk management, reputation improvement, deeper engagement with client companies, and meeting market demand. Disadvantages include increased obligations, higher workload, and potential greenwashing risks. (Rantsi, 2020.)

The role of financiers in addressing climate change was found as significant as they can direct funds toward environmentally relevant targets and must consider environmental risks alongside other factors. The EU sustainable finance plan, particularly the taxonomy, has implications for investors, providing clarity on green definitions and combating greenwashing. The plan's effects are generally seen as positive, although educational impacts are still uncertain. The demand and supply of sustainable finance are expected to grow, and it is anticipated that sustainable finance will become the new norm, eliminating the distinction from traditional finance. (Rantsi, 2020.)
The main findings of the research were that sustainable finance enables more transparent reporting, better risk management and the possibility to tie the loan margin to sustainability goals. In addition, the study discovered that sustainable finance creates reputational benefits, expands the investor base, and channels money to environmentally important destinations, which is why the financier's role is significant in curbing climate change. The risks that were identified in the study dealt with greenwashing and identifying the environmental effects of the financing object. In addition, the study mapped how important the experts experienced the financier's role in curbing climate change on a scale of 1-5. The results showed that the experts had different opinions and the degree of importance varied. (Rantsi, 2020)

The study by Sundqvist (2022) concentrated more on the application of the EU taxonomy framework and found, that EU Taxonomy increases sustainable activities, and investment flows on innovation and technologies. The results showed that EU Taxonomy creates action in the market to increase sustainable activities, innovation and technologies. It was also experienced to improve sustainability reporting, disclosure and compliance. The criticism identified in the study dealt with implementation timelines and the lack of comparable data, as well as lobbying and political pressure obscuring science-based decisions. (Sundqvist, 2022.)

The research highlights the mainstreaming of sustainable finance, with increasing attention and importance given to sustainability issues since the launch of the Principles for Responsible Investment (PRI) in 2006 and the Paris Agreement in 2015. However, the research stated that the current levels of investment are insufficient to support a sustainable economic system. Voluntary measures like the PRI are not enough, and regulations, standardization, and clear definitions of sustainable investment are needed to accelerate the mainstreaming process. (Sundqvist, 2022.)

According to the research, among the several sustainable finance regulations, the EU Taxonomy is the most extensive and groundbreaking, as the Taxonomy sets legal obligations for reporting to financial market participants and large companies, and it applies to all EU member states when establishing labels or standards for environmentally sustainable financial products or corporate bonds. (Sundqvist, 2022.)

The study found that the Taxonomy Regulation has faced challenges in terms of implementation timelines, data availability, and political influence. However, its main objective is to enable and increase sustainable investment by aligning investor preferences with sustainable activities. It is expected to drive action in the market, promote innovation and technologies, and improve sustainability reporting and compliance. This will contribute to making the EU economy more sustainable and increase the number of economic activities that substantially contribute to climate change mitigation. The research suggests that the EU Taxonomy is necessary and expedient in achieving sustainable investment and transitioning towards carbon neutrality by 2050. (Sundqvist, 2022.)

Table 1. List of identified challenges and opportunities of Sustainable Finance in Finland in prior research

Sustainable Finance in Finland	Rantsi (2020)	Sundqvist (2022)
Identified opportunities	Sustainable finance is emerging as the standard and a more effective approach to finance business operations. Sustainable finance regulation offers benefits in terms of reporting, improved risk management, and transparency. Banks can enhance their reputation by engaging in sustainable finance practices. Sustainable finance fosters deeper dialogue with customer companies, leading to better understanding and alignment with market demand. The taxonomy provides clarity in defining and assessing the level of sustainability of investments.	There is a growing interest among Finnish investors in responsible investing. The implementation of the EU taxonomy will lead to a shift in investor preferences towards sustainable activities and the allocation of capital accordingly. The EU Taxonomy stimulates action in the market, driving an increase in sustainable activities, innovation, technologies, and improvements in sustainability reporting, disclosure, and compliance. Investors and banks are in the best position to assess which companies are prepared for the transition to a sustainable economy, as they have a direct incentive to identify the most promising businesses and technologies.
Identified challenges	Sustainable finance regulation is likely to increase obligations for the financier Sustainable finance regulation creates increase in workload Demand for sustainable investment increase the risk of greenwashing - financiers must understand the environmental effects of the financing object thoroughly Global crises, including the pandemic, divert attention from sustainability, potentially emphasizing the importance of traditional finance over sustainable finance.	The taxonomy may hinder innovation in sustainable investment, as market responses to technological changes are typically faster than regulatory measures. This can lead to increased administrative burden, particularly for smaller companies with limited resources. Concerns about the complexity of the regulation, indicating a high likelihood of non-compliance with the requirements The availability of data is a major problem, posing challenges for implementing the EU Taxonomy. Skepticism, greenwashing, regulatory barriers, and profitability concerns are common obstacles in sustainable investment. Taxonomy does not effectively address the issue of greenwashing and, in some cases, may even be used as a tool for greenwashing

Sustainable finance theories

The current state of sustainable finance theories is constantly evolving as research in this field progresses. However, it is generally agreed upon that sustainable finance theories aim to identify ways in which financial systems can contribute to environmental and social sustainability while also achieving economic goals.

Some of the key theories that have emerged in the studies of sustainable finance are the stakeholder theory, the system disruption theory, and positive signalling theory (Phillips, 2003; Connelly et al, 2011; Burt, 2007; Ozili, 2022). The main theory employed in this research is system disruption theory as it is significant in understanding and analyzing the subject matter of the thesis. The other two theories are shortly introduced, due to their close relatedness to the topic.

The stakeholder theory applied to the analysis of Sustainable Finance provides a framework for understanding and incorporating the interests of stakeholders in company strategies by involving stakeholders in decision-making processes (Phillips, 2003). Incorporating stakeholders' preferences into sustainability strategies and reporting frameworks creates long-term value, which emphasizes that sustainable finance should go beyond short-term financial gains and consider the interests of stakeholders over time. However, as the stakeholder theory primarily emphasizes the interests of various stakeholder, it might not adequately capture the unique dynamics and complexities faced by banks in the context of sustainable finance. Banks have specific regulatory and supervisory obligations, risk management considerations, and relationships with other financial institutions that require additional analysis beyond stakeholder interests.

The signaling theory provides insights into how individuals and organizations strategically communicate information to influence external perceptions and outcomes (Connelly et al, 2011). According to Ozili (2022), the **positive signalling theory of sustainable finance** suggests that economic actors benefit from their commitment to sustainable finance, because publicized communication about such actions increases the actor's attractiveness and thus contributes to the continuity and further development of operations. In addition, the described communication increases transparency and the flow of information between stakeholders. However, the issue with the theory is that it is only one-sided positive. The economic actors can use news coverage of commitment to sustainable solutions, for example, to hide poorer financial or sustainable success in other operations, by further emphasizing the importance of sustainable actions in their communications (Ozili, 2022). Therefore, it I questionable whether the communication can be trusted.

The system disruption theory

According to Burt (2007) disruption can be described as an event that “throws into disorder” the current state of order, leading to short-term consequences that may persist over time. It is widely acknowledged that an organization must align with its environment. However, environmental uncertainty and potential technological disruptions can challenge and destabilize established industry organizations. Therefore, to address the challenge of alignment and environmental uncertainty, organizations have sought an approach to identify changes in their environment before such changes affect their operations. The scenario methodology suggests that predicting future events requires identifying predetermined elements in the business environment and understanding disruptions and discontinuities. For example, a new product or service may create entirely new markets and challenge established industry leaders in existing markets, leading to the emergence of new leaders. (Burt, 2007.)

The theory posits that established companies tend to focus on improving their existing products and services to meet the demands of their existing customers. However, they often ignore new, emerging markets or customer needs that do not fit into their current business model. The theory of disruption emphasizes the importance of being able to recognize and respond to disruptive innovation, rather than relying on established business models and practices. It has been used to explain a range of successful and unsuccessful business strategies and has had a significant impact on the field of innovation management. (Burt, 2007.)

The system disruption theory applied to sustainable finance states that the transition to sustainable finance and the related goals will disrupt the structures of the traditional finance system and thus also the operational possibilities of companies seeking finance. According to the theory, the transition to sustainable finance might be problematic, as the goals attached to it are not necessarily in line with the capabilities of the actors seeking finance. Sharing information helps the parties to understand the prerequisites and benefits of sustainable finance. However, the system disruption theory of sustainable finance leaves open the possibility that sustainable finance will not be the new normal, but rather a sub-sector alongside traditional finance. (Ozili, 2022.)

The theory suggests that sustainable finance can coexist as a sub-sector within the mainstream traditional financial system (Ozili, 2022). However, while the theory offers valuable insights into the potential challenges and opportunities associated with the transition to sustainable banking, there is a research gap that should be explored further. The theory's application and empirical testing in various contexts, including specific countries or regions like Finland, is limited. Therefore, this research focuses on understanding how the theory applies to the unique characteristics, regulatory frameworks, and cultural aspects of Finland's banking sector. This provides a more nuanced understanding of the challenges and opportunities specific to the Finnish context. In addition, the theory is lacking information on the role of policy and regulatory frameworks in addressing the challenges and supporting the opportunities of sustainable banking, which is what this research is focusing on. This includes examining the effectiveness of existing policies, identifying gaps, and proposing regulatory measures that facilitate a smooth transition to sustainable banking while managing potential disruptions.

The research is employing the theory of system disruption of sustainable finance primarily because it offers a comprehensive framework that aligns well with the research question and objectives. The system disruption theory recognizes that the transition to sustainable finance will disrupt the structures of the traditional finance system, impacting the operational possibilities of companies seeking finance. This theory addresses the specific challenges and opportunities associated with the transition to sustainable banking, providing valuable insights into the dynamics and complexities faced by banks.

In contrast, while the stakeholder theory (Phillips 2003) and positive signaling theory (Ozili, 2022) are briefly introduced, they are not the main focus of the study. The stakeholder theory emphasizes the interests of various stakeholders and their involvement in decision-making processes, which is important but may not fully capture the unique dynamics of sustainable finance within the banking sector. Similarly, the positive signaling theory explores how organizations strategically communicate information to influence external perceptions, but it does not delve extensively into the systemic changes and disruptions brought about by sustainable finance.

By employing the system disruption theory of sustainable finance, the research examines how sustainable banking in Finland can be integrated into the existing banking landscape by exploring potential synergies, challenges, and opportunities arising from the coexistence of sustainable finance and traditional finance models. Employing the theory also enhances the investigation of this phenomenon and enables an assessment of the alignment between prior research findings and current research results.

3 Research Design and Methods

Research methods provide scientific analysis and critical evaluation of a study's validity and reliability by providing specific procedures and techniques for identifying, selecting, processing, and analyzing information about the empirical research and the data analysis by addressing these primary questions: what the research approach and research methodology is, how the data was collected or generated, and how it was analyzed (Wilkinson, 2000). After first deciding what kind of methodology can be used to obtain information, a method that fits the methodology can be chosen (Guba & Lincoln, 2000). This chapter describes the design and methods of the research at hand.

3.1 Research context

Climate change is a growing field of research. As for the climate measures themselves, i.e. the instruments for combating climate change, the related pressure has increasingly been directed at banks with increased national and international regulation. Climate change is a global problem, and it cannot be solved without the active contribution of every nation. However, for example, the European Union has wanted to take on a role as a pioneer and trend setter in the fight against climate change. Finland, as a member of the EU, is thus directly under the influence of its regulation and goals related to the fight against climate change. However, Finland has also set its own national goals related to climate change in the government program and related regulations. Individual operators such as banks have also set their own climate goals and operating principles to enable a more sustainable future. In the crossfire of this regulation, banks must be able to create functional and predictable operating models alongside or to replace the traditional financial system.

Throughout its history, the climate change debate has been overshadowed by a kind of division into two schools of thought regarding its measurability. According to some experts all measures related to combating climate change should be measurable, while according to another school of thought, measurement is not possible in all cases, due to the lack of predictability of the phenomenon. Since regulation and reporting related to banks' climate actions has increased significantly in recent years, quantitative data related to sustainable finance is available at least to some extent. However, since the integration of climate measures into banking operations is still subject to constant criticism and development, qualitative approach was the primary choice for the research. A quantitative study would be a good extension of this work and it would be of great importance to find out the changes and differences in the sustainability figures reported by the banks.

A well-formulated research question is an important part of qualitative research (Gioia et al., 2013). The research question "What kind of challenges and opportunities do EU sustainable finance strategy and regulation based on climate-related targets for Finnish banks?" elucidates concrete issues, but these issues also stem from the experts' own views and experiences related to the phenomenon. This study aims to investigate the viewpoints of banking experts on the challenges and opportunities that emerge for banks due to climate-related regulations.

In addition to the topicality of the research, the research was inspired by the researcher's own interest in sustainable development and the phenomenon of climate change. As global crises become more common, climate change is something that is easily overshadowed by more urgent problems. People's ignorance of climate change and its consequences significantly affects the general attitude towards the phenomenon. Only by researching the issue and writing about it is it possible to increase the amount of available climate information and thus involve both individuals and companies in climate work.

3.2 Research method approach

The research method approach employed in this study is grounded theory, based on qualitative research and interviews. Grounded theory is a systematic and iterative approach that involves developing theories or concepts from empirical data. It allows for a comprehensive exploration of participants' perspectives and experiences in order to generate rich and contextually embedded insights. (Goulding, 2002.)

In this study, qualitative interviews were conducted to gather data from banking experts. The interviews involved engaging participants in open-ended conversations, allowing them to express their opinions, insights, and experiences in their own words. These interviews were designed to capture in-depth and nuanced information about the challenges and opportunities that Finnish banks face due to climate-related regulations.

Throughout the interview process, a grounded theory approach was followed. This involved analyzing the data collected from each interview iteratively and inductively. The researcher carefully examined the interview transcripts, identifying patterns, themes, and concepts that emerged from the data. These initial findings then informed subsequent interviews, as the researcher probed deeper into specific areas of interest and explored emerging ideas.

As the data analysis progressed, constant comparison and theoretical sampling techniques were employed. Constant comparison involves systematically comparing new data with previously analyzed data, seeking similarities and differences to refine and develop emerging concepts. Theoretical sampling involves strategically selecting new participants based on the emerging theories or concepts to further explore and validate the developing theories.

By adopting a grounded theory approach (Glaser & Strauss, 1967), this study aims to derive meaningful and theory-driven insights from the qualitative data collected through interviews. This approach allows for a rigorous exploration of the challenges and opportunities faced by banks in relation to climate-related regulations, rooted in the perspectives and experiences of banking experts

3.3 Data collection

Climate change is a very up-to-date research topic, and a lot of related data is available. However, there have been relatively few studies on sustainable finance. An important part of qualitative research is understanding the phenomenon under investigation. For the research, the data has been collected from many sources, such as news, media archives and scientific articles. However, the core data of the study has been obtained from the semi-structured research-interviews.

Collecting and analyzing qualitative data, such as text, video, or audio, is the foundation of qualitative research, aimed at comprehending concepts, opinions, or experiences (Wilkinson, 2000). This type of research can provide a comprehensive understanding of a problem or generate novel research ideas. This research has used several data sources (news, archives and media documentation), but the most important research data is based on semi-structured expert interviews. Respecting the grounded theory methodology (Glaser & Strauss, 1967), it refers to a systematic methodology applied to a qualitative research that includes the design of new theory-building through the application of inductive reasoning. The qualitative data, mainly interviews, is used to codify and conceptualize the data analysis.

The interviews were transcribed and codified following a codification process (Gioia et al., 2013). The data structure according to the Gioia methodology thus also helped to identify the main concepts and theoretical constructs exploring sustainable finance. contexts that would be necessary to familiarize in terms of comparing the findings.

An interview is a creative research tool, as it gives room for a freer conversation between the interviewer and the interviewee (Metsämuuronen, 2006). The interview for the present study was conducted as a semi-structured interview. A semi-structured interview, also called a themed interview, is well suited for use in situations where the researcher wants to find out the views and reasonings of the interviewee (Hirsjärvi & Hurme, 1985). The amount of work in producing interviews is large, but on the other hand, the knowledge gained is deep (Metsämuuronen, 2006). There are multiple ways to conduct the interviews, such as face to face, by phone or by email (Metsämuuronen, 2006). Experts working in five different Finnish banks were selected to be interviewed, as they have, in addition to solid industry experience, a theoretical interest in the phenomenon under study. The interviews were conducted remotely, using the Microsoft Teams application, due to rather long distances and busy schedules of the interviewees.

The interviewees were selected from five different banks in Finland. The most important requirements for the interviewees to be chosen were that they have solid experience in the banking industry, and a strong understanding of sustainable finance and the themes around the studied phenomenon. The selection was based on personal introductions on banks' websites, information found on LinkedIn pages of the interviewees, as well as previous interviews or articles written by the individuals. With the help of background research, financial industry professionals were selected to be interviewed, who, based on their expertise, were able to take a stand especially on the regulation caused by climate change and its effects on banking. The interviewees were contacted by e-mail and the interview questions were sent along with the interview invitation. The interviewees were asked to consent to the research and the recording and transcription of the interview situation, however only for the researcher's private use for later analysis. The duration of the interviews were 45-60 minutes each. The interview details are presented in Table 2 below.

Table 2. Interview details

Interviewee	Field of expertise	Method	Length
A	ESG Director	Teams interview Recorded Transcribed	45min
B	ESG Director	Teams interview Not recorded Transcribed	55min
C	Head of Sustainability	Teams interview Recorded Transcribed	65min
D	Head of Communications	Teams interview Recorded Transcribed	60min
E	Head of Sustainability	Teams interview Recorded Transcribed	45min

As is the nature of a semi-structured interview, the interview focused on pre-selected themes (Appendix 2), however, without overly limiting the form of the questions or the order in which they were presented (Hirsjärvi & Hurme, 1985). The researched phenomenon is quite broad, so the interview structure was divided into themes. Due to the wide topic, the interviews were prone to spread outside the core area, which deviated the answers from the research question. On the other hand, the detailed answered created a good understanding on the phenomenon. In addition, the interview frame was designed in such a way that it helped to shift focus back on the research question, without including leading questions. The pre-selected themes and the example set of interview questions are listed in Appendix 2.

3.4 Data-analysis: codification

The first stage of the data analysis was transforming the interviews into a manageable format. The interviews were transcribed and codified. Recording the research session made it possible to review the material afterwards. Out of five interviews in total, four interviews were recorded (audio and video) and transcribed, and one interview was only transcribed at the interviewee's request. It was agreed with all the interviewees that the interview material would only be processed by the researcher herself and that the research results would be discussed anonymously in the research report. Respecting the agreement, it is not possible to find out from the research which bank's representative's opinions or views are in question.

The subsequent review of the interview situation enabled a more detailed observation of the interviewee and linking the observations to the rest of the analysis material. Other analysis material refers to transcriptions that were produced with the functionality of the Teams application in connection with the interview and the interview notes written by the researcher herself. This helped to maintain a higher-level perspective on the matter under discussion, which is especially important in terms of theorizing the material. The transcripts and notes were reviewed multiple times after the interviews.

Next, the interviews were analyzed more systematically, within the framework of "1st-order" analysis and "2nd-order" analysis. With the help of the transcriptions, the codification of qualitative data was adopted. The three-stage analysis of the Gioia methodology was also adopted. In accordance with the 1st-order phase, the content of the transcription materials was divided by theme, i.e. the so-called coding was performed. In the Gioia methodology, qualitative coding is the process of analyzing and interpreting the data that has been collected in order to identify patterns, themes, and insights that can help to answer the research question (Gioia et al., 2013). In the 2nd-order phase, the coding was compared to the interview observations and links were looked for between them. Coding also made it possible to compare the results of different interviewees more easily. In the comparison, it was possible to identify recurring themes, differences and similarities, which in turn made it easier to draw conclusions. The data structure is presented below in Table 3.

This combination of transcriptions and notes formed a large body of information, which, however, was necessary and typical for analysis in a "get in there and get your hands dirty" research. The analysis process required open-minded behavior and even the readiness to change the research question - the so-called designed-in flexibility. This ensured the conditions for the development of new concepts and eliminates excessive protocol standardization. (Gioia et al., 2013.)

Table 3. The Research data structure. First order concepts: the number in brackets represents the number of quotations, the letter indicates the linkage to second order theme

FIRST ORDER CONCEPT	SECOND ORDER THEME	AGGREGATE THEME
Criticism of the EU taxonomy (7, A) Regulation is detached from reality (3, A) Standards for sustainability reporting (5, A/B) Corporate governance (2, B) Increasing EU regulation (8, C) Increasing national regulation (2, C) Increase in more complex, administrative workload (5, C/ D) Goal orientation of regulation (4, C) Tightened level of accuracy in fulfilling information obligations (4, C) Reform of the reporting directive (2, C) The impact of regulation on the financing process (6, C/D) Regulation can lead to a decrease in monetary returns (3, D) Global competitiveness hard to maintain (2, F) EU Pioneering Green transition (3, C)	**(A) Contradicting regulation** **(B) Challenges in interpretation** **(C) Increase in administrative work and obligations to fulfill** **(D) Increase in costs**	**Regulation tensions**
Stakeholder perspective (3, E) International initiatives (2, G/H) Climate change accelerates the implementation of sustainable finance (4, E/F) Uniform classification for sustainability criteria enhances transition to sustainable finance (4, H) Barriers to transition (4, F) Significant social actor / influencer (3, F) Increasing expectations towards the bank (3, E) New business opportunities (6, E) The demand for green products and services (4, E) Improved comparability of companies (5, H) Differences between traditional finance field and sustainable finance field (6, E/G) Investors' ESG preferences (4, E) Banks need more data from their customers (6, H) ESG investment (8, G) Green loans and bonds (7, G) Easier financing of sustainable operations (5, G)	**(E) Demand for sustainable finance** **(F) Climate transition highlights banks' societal role** **(G) New prospects for growth** **(H) Importance of cooperation**	**Transitioning from SRI and ESG to sustainable finance**
Physical risks (3, I//L) Transition risks (5, I/K/L) Reputational risk (6, J/L) Industry-specific risks (I/K) Fiscal risks - sustainable pricing as a challenge (2, I) Improvement of risk management (5, I/J/L) Green washing (7, I/J/L) Long-term monitoring includes uncertainty factors (2, J/L) The taxonomy criteria is stricter in some industries (3, K) The new goals of banking are contradictory (6, I) Global competitiveness of Finnish banks is at stake (3, I/J) Improved predictability (6, I/L) Importance of transparency (7, I/L) Green pricing and operational adjustments reduce banks' margins (4, J) Banks' and their customers' sustainability risks are interconnected > mutual trust and understanding is important (2, L) Sustainability improvements might harm financial gains (4, J) Banks need more data from their customers (7, L) Regulatory environment is constantly changing (6, J) Short-term and long-term objectives are in conflict (4, K)	**(I) Climate change creates new types of risks** **(J) Administrative burden** **(K) Cross-scale goals** **(L) Increasing need for sustainability reporting**	**Risk management**

Adverse effects of climate change on economical actors (3, M) Increasing need for climate knowledge (5, M) Both big and small companies need more reporting skills (2, M) Visibility of climate change in everyday life of banks (5, N/P) Changes in customer acquisition and sales processes (4, N/O) EU regulation strongly influenced the creation of banks' own climate targets and adaptation (3, N/P) The need for banks' own responsibility programs (2, N) Carbon neutrality objectives (5, N/P) Other global crises take attention away from green adaptation (4, M) Corporate green transition plans (2, M) Banks at the forefront of green adaptation (5, P) Financial actors as green conversation starters (5, P) Climate training (5, N/O/P) Banks have to motivate their customers commit to climate work (5, N/O/P) Banks need sustainability commitment from their customers (4, M/N/O) The responsibility must be distributed evenly (not solely banks' responsibility) (3, P) Climate change affects banks' marketing & communications (2, N/P) Customers prefer banks that are committed to green values (3, O) Banks must promote environmental goals (5, E)	**(M) Transition challenges to customers** **(N) Adapting operations, products, and service changes** **(O) Attracting new customers** **(P) Bank leadership to climate transition**	**Customer adaptation and zero net economy**
Highly industrialized economy - lots of "heavy industry" (2, S) Many companies are already in the middle of the green transition (3, R) Finns are reasonably skeptical (1, R) Importance of Finnish banks in the fight against climate change (5, R/S) Technological development and research (4, S/T) Industry-specific regulation (3, Q) Large forests - opportunity if managed sensibly (2, Q/T) National nuclear power - opportunity in terms of national energy sovereignty (2, S) Finland attracts foreign investments (3, T) Educated population (4, R/T) Finnish actors take part in decision-making on climate regulation (3, R) New business opportunities (6, T)	**(Q) EU policies affect Finland greatly** **(R) Finns are prone to promote sustainable operations** **(S) Identifying new business opportunities is key** **(T) Foreign investments** **(U) Industrialized economy**	**Operations in Finland and market characteristics**

3.4.1 1st-order categories

The purpose of the first-level categorization was to identify categories from the interview materials, keeping the terminology used by the interviewees as intact as possible. Due to the scope of the research topic and the length of the transcriptions, this was the most laborious phase of the analysis process, and several dozen categories were formed from the first step. This phase included a lot of familiarizing the data by carefully reviewing the information that has been collected, in order to gain a thorough understanding of its content.

In order to reduce the number of categories, the next step was to identify the similarities between the categories. This helped narrow down the categories to a smaller and more appropriate number to cover in the report.

3.4.2 2nd-order categories

The second phase of the analysis helped to create initial codes and categories that capture the key concepts and themes present in the data. These categories were based on the research question, and the data itself. Defining the 2-level categories is an important step of the Gioia methodology, as it clearly illustrates the precision of the method used in qualitative research and sets the basis for building a data structure. The key mission in creating 2nd-order categories is to examine whether they help to explain and describe the phenomenon under investigation. It is important to focus especially on optimal distinctiveness, i.e. concepts that differ from theories appearing in earlier literature (Gioia et al., 2013). This phase included a lot of defining and refining the codes, by specifying their meaning and how they relate to the research question.

3.4.3 Aggregate dimensions

Once the codes and categories were defined and refined, they were applied to the data in order to identify patterns and connections. This involved reviewing the data multiple times, and using an excel spreadsheets to facilitate the analysis (Appendix 1). In the initial stages of data collection and analysis, the need for research independence from previous theories is emphasized. Although the research findings are to be compared with previous literature in this phase to find out whether new concepts have been found, it is still necessary to avoid the hypothesis bias (confirmation bias) resulting from too in-depth knowledge of the literature. The objective here is to find a balance between “knowing and not knowing”, which is only possible with a sufficiently open approach to comparing data and existing theory side by side. (Gioia et al., 2013)

Overall, the qualitative coding process in the Gioia methodology is designed to provide a systematic and transparent approach to analyzing and interpreting qualitative data, and to identify patterns and insights that can help to answer the research question. The data structure, formed from 1st-order categories and 2nd-order themes, enabled the flow of the research to be presented graphically, depicting how it progresses from raw data to terms and themes when doing analyses. This graphical data processing is presented in more detail in chapter four alongside the analysis.

3.5 Validity and Reliability

In qualitative research, validity and reliability are two critical aspects of research quality. Validity refers to the accuracy and credibility of the research findings. It refers to whether the research is measuring what it intends to measure and whether the conclusions drawn from the data are accurate and appropriate. Qualitative research can be assessed for validity by examining whether the research design, data collection methods, and analysis are consistent with the research question and whether the interpretations and conclusions are supported by the data. (Thomas & Magilvy, 2011.)

Reliability refers to the consistency and stability of the research findings. It refers to whether the research could be repeated with similar results. In qualitative research, reliability can be established by ensuring that the data collection and analysis methods are systematic, transparent, and replicable. This means that the research should be conducted in a way that is consistent, transparent, and repeatable to ensure that the findings are consistent over time and across different contexts. (Thomas & Magilvy, 2011.)

To improve the validity and reliability of the thesis at hand, the researcher tried to maintain clear documentation to enhance the reliability of the findings. In addition, supervisors with qualitative research experience were asked to review the research process, data, and analysis. These audits assessed the dependability and consistency of the research.

4 Research findings

In this chapter, the empirical research findings are presented. The findings cover the challenges and opportunities, that were identified in the study. The detailed list of identified challenges and opportunities is presented in Appendix 3, of which the most relevant and repeated are highlighted in this chapter.

As an additional feature to the findings, the experts were asked two questions, where they had to rank the importance of Finnish banks in climate change mitigation and the extent to which climate change is reflected in their banks' daily operations.

Figure 2. The level of involvement of climate change in Finnish banks as per expert opinions

The first question pertained to the importance of Finnish banks in climate change mitigation, with all interviewees responding with a rating of four or five. The second question asked about the extent to which climate change is reflected in their banks' daily operations, with answers ranging from three to five. These results indicate the significant importance of the topic and the experts' recognition of Finnish banks as vital contributors to the fight against climate change. In addition, climate change and the corresponding regulations have a significant impact on the daily operations of banks, as per expert opinions.

The Gioia methodology's data structure played a crucial role in identifying the research findings. The data structure table is presented in chapter 3.4. The data structure identified 5 aggregate themes, with the most pertinent challenges and opportunities being revealed through second order themes, while their more detailed explanations were found from the first order categories. The table presented below arranges the second order themes according to the aggregate themes, which have been further explained and analyzed in the findings.

Table 4. Aggregate themes and second order themes separated from the original data structure. The challenges are represented in red background, opportunities in green background.

Regulation tensions	Transitioning from SRI and ESG to sustainable finance	Risk management
Contradicting regulation	Demand for sustainable finance	Climate change creates new types of risks
Challenges in interpretation	Climate transition highlights banks' societal role	Administrative burden
Increase in administrative work and obligations to fulfill	New prospects for growth	Cross-scale goals
Increase in costs	Importance of cooperation	Increasing need for sustainability reporting
Customer adaptation and zero net economy	**Operations in Finland and market characteristics**	
Transition challenges to customers	EU policies affect Finland greatly	
Adapting operations, products, and service changes	Finns are prone to promote sustainable operations	
Attracting new customers	Identifying new business opportunities is key	
Bank leadership to climate transition	Foreign investments	
	Industrialized economy	

As illustrated in Table 4, the challenges were identified in the following aggregate themes: Regulation tensions, Risk management and Customer adaptation and zero net economy. The opportunities were identified in themes: Transitioning from SRI and ESG to sustainable finance and Operations in Finland and market characteristics. These aggregate themes refer to the broader categories, that emerged from the analysis. However, it's important to note that the aggregate themes are not the final analysis but rather a steppingstone towards deeper interpretation, that is discussed in the following findings. During the analysis of the research findings, it was observed that challenges and opportunities exhibited a close interconnection. In many cases, the identified challenges were found to encompass potential opportunities.

4.1 Identified challenges

The study employed both direct and indirect questioning to explore the challenges associated with sustainable finance. In general, the responses from the interviewees indicated that the banking sector was already a challenging operating environment due to regulatory obligations even prior to climate regulation. Nevertheless, the experts seemed to concur that the challenges have intensified with the regulation focused on climate goals and combating climate change.

4.1.1 Challenges: Regulation Tensions

The first aggregate theme, Regulation Tensions, refer to conflicts and challenges that arose from the interviewee responses, as there were competing and conflicting regulations or regulatory frameworks that had to be applied. These tensions arose because the experts experienced that different regulatory bodies have different standards and targets, and in some cases, there were a lack of clarity or consistency in the regulations themselves. As a result, the experts found it rather difficult to comply with all the climate-related regulatory requirements.

The main **challenges** identified in the aggregate theme of **Regulation Tensions** were:

- Implementing regulations can be challenging due to contradictions and their detachment from reality.
- Interpreting complex regulations can be challenging due to their ambiguity.
- As the volume of EU and national regulations increases fast, fulfilling administrative requirements and obligations becomes a huge burden.
- Regulations that focus on achieving specific targets require intensive monitoring of actions and their outcomes.
- Meeting regulatory requirements can be costly due to the need for additional resources.
- The adoption of sustainability-linked finance puts banks at a disadvantage compared to countries with less stringent standards, thereby compromising their competitive position.

The interviewees raised concerns regarding the challenges associated with the increase in regulatory requirements, citing several reasons for their criticism. In particular, meeting the reporting obligations and integrating the climate targets into the banks' own objectives and strategies were identified as significant additional workload for banks. This has resulted in more complex administrative processes, as banks have had to revise their finance operation models and monitor their implementation in practice. Additionally, goal-oriented regulations have necessitated a reassessment of banks' short-term and long-term objectives. According to the experts, the financial sector is already heavily regulated, and the growing bureaucracy is increasingly consuming the resources of financial institutions. Expert B described the situation as follows:

> "This new regulation causes more reporting, which increases the workload, but then at the same time makes doing the work more transparent and easier to compare in relation to the operations of other banks." – Expert B

The regulation was also found to be partially contradictory, which in turn causes challenges in interpretation:

> “As the regulation is progressing at a fairly fast pace and even at the EU level, not everything has been thought through very carefully, there can and will be overlapping in the regulation and there is unclear guidance on its application. Even the Finnish authorities do not keep up with what EU-level decisions mean in practice. There is probably unnecessary bureaucracy or idleness here. And also, quite a lot of resources are needed for reporting, and it may, in a certain way, erode competitiveness and take the focus away from doing the business.” -Expert A

The implementation of new sustainable finance instruments, including the EU taxonomy, generated some critique among the interviewees. The taxonomy is essentially a framework that establishes specific criteria for identifying sustainable businesses. This tool represents a significant advance in terms of promoting climate action and transparency. Nevertheless, the taxonomy has provoked both favorable and negative reactions. While the goal of the taxonomy is to streamline the identification of sustainable finance options, its application poses challenges due to the strict criteria applied to certain industries. One of the experts justified his criticism as follows:

> “Fulfilling 100% of the taxonomy criteria is very challenging, especially depending on the industry. If all the actors in the economy were to act according to the taxonomy framework, the whole world would be quite different than it is at the moment. Considering that the taxonomy framework only covers climate change in terms of sustainable development, its application will become even more complicated in the future.” – Expert D

The experts suggested that despite being grounded in scientific principles, the taxonomy framework contains evident political considerations. As a result, they opine that the taxonomy is not entirely infallible. As another criticism on the EU taxonomy, an expert stated the following:

> "The big problem that comes with taxonomy and in fact with many other regulations is the amount of bureaucracy, which is quite shocking, and so far, quite a lot of companies, and quite a few investors, see it as a reporting obligation, and it is not integrated as part of the business. But people will realize that this (taxonomy) will be guiding the business a lot over the next decades, so it's a challenge how to do it (integration) and how to make

> organizations and companies and institutions realize that this is a big change going on and we'll try to help customers with that." – Expert A

The experts also pointed out that assessing the applicability of the taxonomy requires a perspective of several years, in order to determine how companies have succeeded in the taxonomy reporting and how it will practically affect business in the future.

According to the experts, as the volume of EU and national regulations increases, fulfilling administrative requirements and obligations becomes a huge burden. An expert also underlined the fact that the speed of new regulation is overwhelming and was concerned about the possibilities of EU member countries to actually be able to take country-specific factors into account in decision making:

> “A good question is whether there will be too many decisions at the EU level and whether there will be opportunities to consider country-specific characteristics? And above all this interpretation: when regulations progress quickly, will we be able to keep up? Or the national authorities?” – Expert C

Some of the experts experienced that EU's desire to be a pioneer in the green transition is a good thing, but in practice the large amount of work is likely to cause challenges. One interviewee mentioned the following:

> "The idealism must be turned into action, and it will not be turned into action if the path is not realistic. After all, ensuring these actions to be taken is partly the responsibility of the banks." -Expert E

According to the quote above, the regulation is deemed unrealistic. The fact that other interviewees made similar remarks suggests that the regulatory objectives may be too ambitious or subject to varying interpretations. This could lead to non-compliance and possibly even legal violations. If the objectives are too broad or ambiguous, it may be challenging to determine what actions are in violation of the regulation, leading to inconsistent enforcement or legal challenges. In addition, this might lead to resistance from

the industries or individuals and result in lobbying efforts to weaken or delay the regulation, which can ultimately undermine the effectiveness of the regulation.
Increased regulation requires resources from the banking industry for supervision as well. The consequences of non-compliance with these regulations can be severe, including fines, legal actions, and reputational damage. On the other hand, Intensive monitoring of actions and their outcomes helps banks to identify potential issues before they escalate.

When referring to the weakening of competitiveness, the expert specifically meant the bank's global competitiveness. According to the expert, not all countries in the world operate according to the same principles, and do not follow the same strict legislation. This can be a challenge in situations where companies apply finance for their projects that do not meet the criteria for sustainable finance. If the bank refuses to finance the project, finance will probably be sought from somewhere else - such as from countries where there is no similar regulation. Some of the experts even questioned how much the banks actually affect the achievement of climate targets on a global level, if activities that burden the climate do not actually cease to exist or are not developed to be more sustainable. Another expert also highlighted the issue with competitiveness as follows:

> "If a bank refuses to finance a customer's project, then in practice it does not necessarily mean that the client will cease operations, but that someone else will then finance it." – Expert B

4.1.2 Challenges: Risk Management

The main challenges identified in the theme of Risk management were the following:

- Regulatory landscape around climate change is evolving rapidly, with new reporting standards and disclosure requirements being introduced regularly. Banks need to stay updated with these changes and adapt their risk management practices accordingly.

- Climate change risks are uncertain and complex, making it challenging to estimate their likelihood and potential impact accurately.
- Industry-specific variations can create inconsistencies and additional challenges in implementing regulations from the perspective of sustainable finance.
- Climate change introduces new risks for banks and customers, making operational risk management challenging.
- Conflicting short-term and long-term objectives increase administrative burden.
- Sustainability improvements and the pricing of green products can lead to increased financial risks, requiring more resources and expertise.

Banks are facing various challenges and risks due to climate change and associated regulations, as per experts. Banks' core business involves risk pricing, and climate change-related risks thus pose unique challenges on risk management. The idea that a greener business translates to lower risk is not always accurate, and it is essential to assess operational risks carefully. All of the interviewed experts identified climate-related direct risks, transition risks, and reputational risks as new types of risks that differ from traditional finance circumstances. Transition risks involve changes in policies, reporting obligations, regulations, or financial losses caused by fluctuating prices. Direct risks pertain to damages caused by climate change, such as flood damage, storm destruction, or deforestation resulting from fires or different insect species. According to the experts, these risks may hinder the banks’ or customers' operations or lower the value of collateral assigned to a loan. Reputational risks may arise from the banks’ or customers' operations, such as greenwashing or distorting reporting to appear more sustainable. From this perspective, banks and their customers share some of these risks.

According to the experts, what makes the climate-related risks unique, is that the risks are complex and uncertain, and their magnitude and impact are difficult to predict accurately. This, together with the combination of complex and continuously evolving regulations creates an environment that demands flexibility and agility from the banks. According to experts, sustainability and financial goals may sometimes be in conflict. For instance, pricing a green loan lower than a regular loan could erode a bank's profit in the long run. The risks associated with climate change, including direct risks, as already mentioned, can also jeopardize banks' asset levels. Conversely, pursuing short-term economic objectives may have adverse impacts on the achievement of climate targets. According to the experts, it is crucial for banks to prioritize identifying companies and investments that aim for sustainable growth and generate larger financial returns in the long term

Industry- and company-specific variations in green orientation present challenges in establishing consistent operating models, leading to operational risks. The research also reveals that the role of banks in driving the green transition varies. Certain companies require substantial assistance and direction in implementing their sustainability plans, and the expertise of banks can play a crucial role in this regard. Additionally, expertise can influence customer preferences, as expressed by one expert:

> "If you understand (sustainability matters) better than others, customers will talk more with you (than competitors) and that is the opportunity". – Expert A

As discussed, climate change and related regulation has had a significant impact on the fundamental procedures of banks, and it can be seen especially in the pressure to change from "traditional" finance to sustainable finance. One of the experts described the increasing pressure as follows:

> “The regulation causes a lot of questions within many actors, but it seems that especially in the financial sector, there is a lot of pressure to quickly adopt the regulations” – Expert B

According to the interviews, Finnish banks need to be proactive in response to climate change. As the climate crisis intensifies and climate regulations rapidly evolve, the experts suggested that banks are expected to promptly adopt these targets and regulations. To ensure accountability and maintain a high level of expertise, banks must make ongoing developments in their finance processes. In addition to adhering to externally established targets, banks should also proactively develop their own internal regulations. This will enable the targets to be incorporated into the bank's overall strategy and operational processes.

The pressure is not only evident in adopting the regulation and targets, but it also highlights the societal role of banks. Most of the interviewees agreed on the fact that it is indeed one of banks' responsibilities to support the societies' development into the desired direction, but in the case of climate change, the responsibilities need to be evenly distributed. Expert E stated the following:

> "Climate targets cannot be completely outsourced to the financial sector, but the responsibility must be distributed evenly. Yes, political decision-makers and others in this society must bear their own responsibility, and so must companies: that they actually make the changes that will combat climate change. The company itself has to set its own strategy and goals, and fortunately, it is already being done to a very considerable extent. The bank is then one intermediary in this equation, with whom these issues can be discussed and who decides on their financing." - Expert E

The experts found that it will be hard for the banks to comply with the new regulations, because they are partly conflicting and detached from reality. According to multiple interview responses, the growing number of regulations is proving to be expensive for banks. The implementation of these regulations necessitates an increase in not only manpower but also expertise and operational changes. Furthermore, the new reporting requirements don't only impact banks, but their customers may also require assistance and guidance to fulfill theirs. In addition, a particular concern was that the regulations should be beneficial both in terms of financial objectives and sustainability objectives:

> "We run the extra mile to be more relevant with customers. If we make a green bond, we won't get more money from it. When we push the world to be better all the time, it has to be done on the terms of business. We can't grant loans as a form of charity and say we are promoting green values if by doing so, in three years we'll be bankrupt" – Expert A

There were differing opinions between the experts on how the social responsibility for the work related to climate change should be shared, or who it more or less belongs to. Some of the experts were of the opinion that the responsibility lies with the banks:

"Big changes are made by big players and this transition is our (the bank's) responsibility." – Expert A

4.1.3 Challenges: Customer adaptation and zero net economy

In the theme of Customer Adaptation and Zero net Economy, the main challenges were:

- Climate knowledge is deficient among customers.
- Customer processes require more time, expertise and money
- Small and medium-sized enterprises don’t yet have reporting obligations and lack the knowledge necessary to fulfill them.
- Banks must attract new customers through sustainable finance while retaining those who do not meet the criteria.
- Other unforeseen global crises distract from climate issues, diverting attention from them.

The interviewees found that banks are expected to take a leading role in promoting sustainable development. Notably, sustainable investing has gained traction among investors, and bank customers are becoming more vocal in their demands for responsible practices from financial professionals. However, the level of knowledge that customers possess on sustainability varies from company to company, and some may require more assistance than others. Some of the experts suggested that banks should even encourage customers to adopt more sustainable practices and provide education, like climate training. Furthermore, according to expert E, having sustainability expertise can impact customer acquisition, as the degree of commitment defines the bank's attractiveness in the eyes of its potential customers or investors:

> "It's such a threshold that if you're not a responsible player, many customers won't even look at you. And the same applies to banking." – Expert E

The experts identified a major challenge in customer adaptation concerning the involvement of small and medium-sized companies. As reporting requirements do not yet directly apply to them, these operators lack the necessary know-how and resources to establish sustainable operating models, even if they have the desire to do so. This poses difficulties in terms of information and access, making it hard to categorize activities for sustainable financing criteria. Consequently, this also hinders the approval of green loans, which could have been a more affordable financing option.

The experts stated that the implementation of sustainable finance models and regulations is changing customer processes. Besides the communication and access to information challenge mentioned earlier, customer meetings will become more time-consuming as banks need to gain a more comprehensive understanding of their customers. As outlined in the risk management section, banks share some of their customers' risks; hence, it is crucial for the interaction between banks and customers to be transparent and seamless.

However, according to the experts, Finnish companies are already well oriented towards the green transition. For this reason, customer activity also requires banks to be proactive. Especially from the point of view of customer acquisition and retention, customers who are oriented towards green values require the bank to have know-how and to open up discussions around the topic.

According to experts, corporate responsibility is particularly visible in banking operations today, as companies aim for net neutrality of emissions. The responsibility of banks in society is to support those actors who bring about this change. To promote the cooperation between sustainability efforts and their funders, more extensive reporting is necessary. With increased reporting, more information is available, and it is especially easier to obtain standardized data. However, the comparability of the data is also a challenge in reporting. In addition, corporate responsibility and environmental goals are increasingly linked to companies' value chains. The companies strive to make their cooperation agreements such that they aim to achieve common sustainability goals and thus also ensure the responsibility of both parties' operations.

Reporting does not pose challenges only on a one-time basis, but the monitoring of companies' responsibility must be continuous and regular, to ensure sustainable operations. This requires especially IT development from banks and the development of personnel skills, but also efforts and investments from the customer – cooperation is key.

The challenges were also linked to the bank's obligations in customer processes. Tightened level of accuracy in fulfilling information obligations was seen as a big challenge. The experts described that the banks are expected to act as a motivator and a teacher for the customers, in terms of sustainability issues. This either makes the customer meetings longer, or forces to leave some issues unaddressed. One expert compared the "traditional" and "sustainability-linked" customer meetings as follows:

> "The disadvantage is that this is such a shocking amount of work. Before, we granted a loan and only talked about the price and maturity of the loan, but now, in fact, most of the time is spent to discuss the sustainability-linked section. It's an opportunity because if we're good at it, customers will turn to us, but it requires a shocking amount of work." – Expert A

However, it was not only the fulfilment of the information obligation that created challenges for companies, but also the access to information poses challenges for banks, especially in the case of SMEs:

> "Especially for these smaller companies, they don't necessarily make responsibility reports. You can only rely on the information they tell you, now that the obligation on responsibility reporting at the European level does not yet apply to them. Then at the point when we get to it and even small companies have to report, the access to this type of information will be easier. But the question is how the instructions will proceed and how smaller companies even know how to make the reports. There must be some challenges along the way." – Expert D

> "For some customers, we just don't have enough data. This is not the kind of customer we want to be with." – Expert B

4.2 Identified opportunities

The study employed both direct and indirect questioning to explore the opportunities associated with sustainable finance. The opportunities were discovered in the aggregate themes of transitioning from SRI and ESG to Sustainable finance and Operations in Finland and market characteristics.

4.2.1 Opportunities: Transitioning from SRI and ESG to Sustainable finance

In the aggregate theme of Transitioning from SRI and ESG to Sustainable finance, the following opportunities were identified:

- Enhanced collaboration holds the key to uncovering opportunities linked to sustainability.
- The growing interest in sustainable development and finance is generating fresh demand for sustainable products, which in turn is creating novel business opportunities and driving profits.
- The transition can foster customer relationships. Setting long-term sustainability objectives can facilitate stronger and more enduring relationships with customers. By increasing reporting requirements, transparency and trust can be improved. This also serves as an effective measure in preventing greenwashing and managing reputational risks.
- The use of uniform sustainability criteria can prevent greenwashing and disinformation, thereby making it easier to finance sustainable operations. The criteria and tools enhance the management of risks, thereby increasing the level of financial security.
- Banks have the opportunity to motivate and engage customers by providing sustainability expertise, as customers increasingly expect this from their financial institutions. This can also enhance customers' climate knowledge.
- Planning for sustainable operations can improve a company's long-term performance and generate value for their customers.

According to the experts, the changes in stakeholder expectations with regards to sustainability is giving rise to constructive dialogue and increased cooperation. Such collaboration within the value chain is a catalyst for elevating sustainability standards throughout the entire chain. Additionally, as customers provide access to reliable information and reports, cooperation enhances the comparability of companies and their respective sustainability levels, making it easier for banks to support and participate in their customers' transition to sustainability. One expert described the situation as follows:

> "Transparency enables better decision-making and equalizes companies because everyone has to report the same things, so transparency is a good thing." – Expert A

As mentioned, transparency allows the banks, customers, and other stakeholders to make informed decisions about their investments and business relationships, leading to a more sustainable financial system overall. The experts suggested that transparency in banking serves as a great measure to prevent companies from portraying themselves as more sustainable than they actually are, which, in turn, protects banks from being associated with financing unsustainable activities and effectively helps to manage reputational risks.

The flow of funding towards more sustainable targets results in a rise in the investment rate, ultimately accelerating the climate transition. As evident from some of the opinions shared by the experts, sustainable finance and the associated regulations create new prospects for banks, particularly through increased transparency, novel business opportunities, and long-term profits:

> "To put it simply, now that the EU is bringing billions of euros to the energy transition, investments will happen. The pace of investment in society as a whole will develop and thus banks will always be involved in such processes - so that's the big steak for banks" – Expert A

The research suggests that corporate responsibility reporting has proven to be a vital tool, both socially and as a banking instrument, and its significance is expected to surge in the foreseeable future. Notably, the banking sector has the access to confidential information protected under banking secrecy, in addition to publicly reported responsibility information. This unique position allows banks to cooperate with their customers holistically, with solutions based on authentic transparency. As per the interviewees, heightened reporting obligations and the requirement to ask and provide information and reports can enhance transparency and mutual trust between banks and its stakeholders. This presents a significant opportunity to explore effective strategies for implementing new regulations and fostering stakeholder relationships. Therefore, it is imperative not to underestimate the bank's potential as a partner in constructing a sustainable future for companies.

The experts suggested that the EU regulations and sustainable finance tools in particular aid in the classification of sustainable activities, streamlining the process of allocating sustainable funding. For example, the taxonomy and the risk management tool introduced by the ECB, have significantly aided in the process of risk management. Given that the impacts of climate change can be challenging to identify and quantify, the introduction of such tools has facilitated the ability to anticipate and mitigate potential risks. This in turn improves banks' financial security and reduces their responsibility to determine what constitutes sustainable operations and what does not. However, these benefits extend beyond banking operations; they also help the banks' customers in comprehending and identifying the criteria that qualify them for products like green loans.

One of the experts referred to more precise risk analysis, which could ultimately lead to reduction in CO_2 emissions and improved risk management:

> "Moreover, at the level of the entire system, CO 2 emissions are reduced, so that is a clear advantage, and it can somehow reduce the risk in some cases. In addition, one possibility is that now that these risks must be analyzed more precisely through regulation, it will also improve risk management." – Expert E

As previously stated, the EU's drive to lead the way in advancing the climate transition is seen as a somewhat burdensome undertaking for banks due to the extensive regulations. Nonetheless, the experts highlighted the importance of ideology in driving sustainable efforts. They note that substantial changes are unlikely to occur without a strong state of will.

One of the experts described the situation as follows:

> "The most important thing in these EU projects is the willingness to direct the money to green or responsible destinations. The ideology and actually the unified goal of the entire EU, or almost all countries, that solutions to climate change mitigation must be found, is important. And the fact that the financial sector plays a remarkable role in that. The ideological starting point for this is therefore really significant." – Expert D

According to the research findings, many of the identified opportunities dealt with the development of customer relationships. This indicates that customer adaptation is key in promoting sustainability, as it allows banks to allocate capital to sustainable projects and businesses, and to influence the behavior of their customer. This, in turn, can help to achieve the targets of zero net economy more effectively.

The interviewees stated, that sustainability is becoming an increasingly important concern for banks' customers. Therefore, they are more likely to seek out financial institutions that share their values and offer sustainable finance options. By providing sustainability expertise, banks can meet this growing customer demand and build stronger relationships with customers. In addition, according to the expert opinions, providing sustainability expertise can differentiate a bank from its competitors and give it a competitive advantage in the market. This can help to attract new customers and retain existing ones, leading to increased market share and revenue. This can also enhance the bank's reputational image.

The experts stated, that by setting long-term sustainability objectives, banks are able to build trust, enhance their reputation, support the development of sustainable infrastructure and create new business opportunities. This also helps to retain existing customer relationships and create stronger and more enduring relationships with new customers. In addition to the benefits that accrue to banks, their customers can also experience positive outcomes when planning for sustainable operations. Specifically, this can result in enhanced long-term business performance and the creation of value for customers.

4.2.2 Opportunities: Operations in Finland and market characteristics

Given the research's focus on Finnish banks, it allowed for the identification of factors specific to the country based on the research data. It is important to note that the study does not make assertions about the applicability of these particular characteristics to other EU countries. Instead, it rather highlights aspects that are particularly relevant to Finland's political and geographical context. The main opportunities identified in this aggregate theme were as follows:

- Finland attracts foreign investments due to high educational levels and technological development, especially in renewable energy projects
- Large forests create new business opportunities: innovation finance
- Positive international presence in climate work improves international competitiveness of Finnish banks
- Expertise in clean technology and innovation: Banks can capitalize by providing finance to clean tech startups.

The experts have noted a positive trend in Finnish companies towards promoting a green transition, as many have already taken steps towards more sustainable operations. The high level of education among the Finnish population is seen as a contributing factor, as it has lowered the threshold for addressing social issues. However, the experts also acknowledges that Finns tend to be reasonably skeptical and are not afraid to voice their concerns if something isn't effective. This skepticism has been evident in expert statements, particularly in relation to the involvement of Finns in climate working groups tasked with developing regulations. However, the active participation in climate work was seen as a factor that improves the opportunities to influence regulation and thus enhances international competitiveness.

According to the experts, Finland is known to attract foreign sustainable investment due to its favorable business environment, political stability, strong infrastructure, highly educated workforce, and its commitment to sustainable development. The country is also recognized for its expertise in clean technology, renewable energy, circular economy, and sustainable forestry. Additionally, Finland has a high level of transparency and low corruption, which makes it a reliable and trustworthy partner for foreign investors.

The connection between the Finnish forest industry and the EU's forest policy was perceived as a significant influence and a component of social well-being. Especially from Finland's point of view, the export of forest industry products plays an important role, and thus the regulation aimed at it exposes the whole country to the resulting effects. However, innovations in the forest industry were also seen as a great opportunity both for the development of the Finnish economy and climate change. The challenge, on the other hand, was how to finance these innovations. As with start-ups in general, there are big risks in financing these ventures from the financier's point of view. It largely depends on the bank's strategy and risk tolerance, what kind of innovations it will finance.

Finland heavily relies on fossil fuels, particularly in the form of oil and coal, for its energy needs. As climate change mitigation efforts intensify globally, Finland faces the challenge of reducing its greenhouse gas emissions and transitioning to renewable and sustainable energy sources. Balancing financing and achieving sustainability goals concurrently presents a challenge in the context of heavy industry. In fact, some of the interviewees stressed that although innovations and sustainable start-ups are an important part of change, it is even more important to support big players who make big changes happen. It is therefore necessary to identify the means by which the environmentally unsustainable activities of these operators could be made more sustainable.

However, some of the experts noted that Finland has significant potential in hydropower, biomass, wind, and solar energy, as well as expertise in forestry, clean technology and innovation. Finnish banks can capitalize on this opportunity by providing finance to clean tech startups and innovation.

5 Discussion and Contribution

The research discovered several key findings that shed light on the challenges and opportunities faced by Finnish banks in relation to the EU sustainable finance strategy and regulation. The research observed that Finnish banks were actively incorporating green strategies and developing more sustainable financial products. This trend aligns with earlier research on the transformative nature of sustainable finance, indicating that traditional banking practices are being reshaped to meet sustainability requirements and climate targets. The findings contribute to the existing body of knowledge, extend our understanding of sustainable finance in Finland, and emphasize the need for banks to address environmental concerns and integrate climate change considerations into their operations.

The findings thoroughly provide an answer to the research question: "*What kind of challenges and opportunities do EU sustainable finance strategy and regulation based on climate-related targets and for Finnish banks?*". The challenges were identified in the aggregate themes of: Regulation tensions, Risk management and Customer adaptation and zero net economy. The discussed themes revealed prominent challenges, primarily stemming from the complex regulatory landscape and conflicting objectives between traditional finance and sustainable finance. These challenges have given rise to a significant increase in administrative burden and the need for specialized expertise. Ignoring these challenges could potentially lead to financial losses, customer attrition, and accusations of greenwashing. To address these challenges, the research puts forth practical actions in section 5.2, offering potential solutions.

The opportunities were discovered in themes: Transitioning from SRI and ESG to sustainable finance and Operations in Finland and market characteristics. The research identified opportunities that encourage the shift from traditional finance to sustainable finance, offering a pathway to address the identified challenges. A key opportunity lies in embracing a collaborative approach to sustainable finance, where harmonization of climate regulation with banks' strategies and developing customer relationships can enhance growth prospects and reconcile short-term economic objectives with long-term sustainability goals.

Moreover, the study highlights the specific context of Finnish banks, which presents significant opportunities to drive economic growth and foster sustainable development.

The experts were asked to weigh in on the increasing administrative burden of the EU sustainable finance regulation and its benefits. Some believed that the opportunities outweigh the challenges, while others found the burden to be overwhelming. While climate regulation encourages innovation and thus creates new business opportunities, it also incurs costs in the form of additional resources and bureaucracy. Banks encourage sustainable development by motivating companies and consumers to invest in it, but experts question the profitability of sustainable finance in the short term. Nevertheless, the experts agreed that sustainable finance is necessary and likely profitable in the long term. The conclusion drawn is that banks must consider the implementation of these regulatory targets to be very important despite the increased administrative work and financial risks. This also indicates the inevitability of the transition in the banking industry's operating environment due to regulatory requirements.

Finland's heavy industry and large emissions present unique challenges and opportunities in terms of emission reductions and financing operations. The importance of national nuclear power and large forests as national interests also adds a distinctive dimension to the sustainable finance landscape in Finland. The advanced forest industry and technological know-how of the Finnish workforce provide an innovation platform for developing sustainable solutions in the future, which Finnish banks could capitalize. Furthermore, the research emphasizes the importance of shifting focus towards developing strategies that enable environmentally unsustainable activities within the heavy industry to be transformed into more sustainable practices, rather than simply attempting to downscale or diminish the industry itself. This approach recognizes the significance of the heavy industry in economic development and suggests that focusing on improving its sustainability practices can lead to a more balanced and environmentally responsible outcome.

5.1 Contribution to previous research

The findings of this study contribute to the broader understanding of sustainable finance and its implications for the banking sector. Upon comparing the findings with prior research, it becomes apparent that the challenges and opportunities identified are connected to climate regulation, which possesses a wide-ranging influence. Finnish banks find themselves confronted with objectives stemming from multiple sources, presenting difficulties in simultaneously fulfilling diverse requirements. Moreover, the novel nature of these regulations poses challenges for financial experts in understanding the process of implementing and reporting them. While the EU regulation on sustainable finance poses significant challenges, such as meeting various regulatory requirements and navigating the complexities of climate-related risks, the research findings reveal that it also presents new prospects for growth and advancement. Collaborative efforts between banks and their customers are crucial to addressing these challenges and identifying opportunities.

While previous research findings align on the overall importance and challenges of sustainable finance, the research at hand specifically addresses the challenges and opportunities in more detail. The findings suggest that climate change presents not only challenges but also new prospects for growth and advancement. Therefore, collaboration between banks and their customers is essential to address these challenges and identify opportunities. According to the experts, while some businesses will not survive until 2050 due to the impact of climate change, the climate transition will also create new opportunities for many other businesses, that don’t even exist yet. Therefore, it is crucial for financiers to identify which businesses are worth investing in to support sustainable growth and gain long-term profits.

The studies by Rantsi (2020) and Sundqvist (2022) highlighted the tensions arising from conflicting regulations, the need for effective risk management practices, and the importance of customer education and engagement. Compared to the previous research, all findings emphasize the significance of sustainable finance and the need for regulations, transparency, and collaboration to drive the transition towards a sustainable economy. The study by Sundqvist (2022) concluded that the implementation of the EU Taxonomy is a crucial step in increasing sustainable activities, innovation, and disclosure. The research at hand is consistent with this notion, but also discovered that challenges such as data availability, compliance complexity, cross-scale goals, industry-specific differences in the criteria, and the administrative burden associated with the Taxonomy are challenging its implementation. To overcome these challenges education, harmonization of the regulation, and the ability to manage associated risks are key factors for banks in this context.

The research supports the notion of system disruption theory, which posits that traditional banking practices are undergoing a significant transformation due to sustainable finance and related regulations and targets. This transformation necessitates banks to adapt their strategies and operations to align with sustainability goals, thereby disrupting the existing banking system. The research at hand extends the theory by identifying what are the potential disruptions that experts from Finnish banks experience as challenges.

Furthermore, the concept of system disruption theory suggests that the transition to sustainable finance is not a one-time event but an ongoing process. Banks must continually adapt their strategies, practices, and operations to keep pace with evolving regulatory frameworks and emerging risks. This was also evident in the research findings, as the experts agreed that the transition is a learning process that they share with their stakeholders. In addition, other global concerns might affect the speed and the intensity of the climate transition in the banking sector. Regular monitoring and evaluation of the regulatory landscape, coupled with updates to reporting standards and risk assessment methodologies, are essential to ensure the relevance and effectiveness of sustainable finance practices.

5.2 Practical contribution and recommendations for policymakers

Based on the findings, Finnish banks can draw important lessons to navigate the challenges and leverage the opportunities presented by the EU sustainable finance strategy. The research offers practical implications that can guide banks in their journey towards sustainable finance, enabling them to address challenges, capitalize on opportunities, enhance their competitiveness, and contribute to a more sustainable future. As a practical contribution for Finnish banks, the research suggests the following:

1. **Embrace Sustainable Finance as a Learning Process and harmonize EU regulation and sustainability-linked marketing**

Recognize that the transition to sustainable finance is an ongoing learning process. Continually adapt strategies, practices, and operations to align with evolving regulatory frameworks, emerging risks, and customer expectations. Ensure responsible promotion of sustainable products and services in compliance with EU regulations. Exercise caution in marketing to avoid information asymmetry and accusations of greenwashing.

2. **Foster Collaboration and Knowledge-Sharing**

Engage in multi-stakeholder collaboration involving banks, regulators, policymakers, industry experts, and customers. This collaborative approach is vital for developing standardized sustainability criteria, effective risk management throughout value chain, and innovative financial products and services.

3. **Enhance Customer Education and Engagement**

Invest in customer education and engagement to promote awareness of sustainable finance options and their benefits. Develop customer-centric processes and offerings that align with sustainability goals, fostering long-term relationships and trust.

Policymakers play a crucial role in facilitating the climate transition by harmonizing regulations, supporting innovation, and promoting transparency. Through collective efforts, Finland can drive a sustainable and resilient economy in alignment with the EU climate targets. The tensions arising from conflicting regulations highlight the need for regulatory harmonization and coordination among different bodies to ensure clarity and consistency. Risk management complexities and uncertainty regarding climate change risks call for the development and implementation of innovative tools and frameworks that enhance risk assessment and management practices. The research suggests the following action for policymakers:

1. **Harmonize and Coordinate Regulatory Frameworks**:

Ensure regulatory harmonization and coordination among different bodies to provide clarity and consistency. This will alleviate the tensions arising from conflicting regulations and facilitate banks' compliance with sustainable finance requirements.

2. **Develop Innovative and Resilient Tools:**

Support the development and implementation of innovative tools and frameworks that enhance risk assessment and management practices. Especially tools that help to harmonize sustainability claims, should enable banks to effectively evaluate and manage climate-related risks associated with their operations and investments. In addition, Finland, like other countries, have country-specific characteristics such as the energy mix, industrial structure, and geographical vulnerabilities to climate change that impact the risks and opportunities faced by banks. Policymakers need to align climate-related regulations and disclosures with these characteristics to ensure equality and consistency across policies.

5.3 Conclusions and recommendations for future research

To address the challenges and leverage the opportunities identified, collaboration and knowledge-sharing among stakeholders are paramount. This collaborative approach can foster the development of standardized sustainability criteria, effective risk management frameworks, and innovative financial products and services. This also highlights the role of sustainable finance in facilitating economic growth and sustainable development in the Finnish context. It identifies the bank's potential to support businesses in their green transition plans, providing guidance and expertise to navigate the challenges associated with sustainable finance. This collaboration between banks and companies can lead to a more sustainable and resilient economy, benefiting both stakeholders and society at large. By addressing country-specific challenges and seizing the identified opportunities, Finnish banks can play a vital role in driving Finland's transition to a more sustainable and resilient economy in the face of climate change and contribute to a more sustainable and resilient future.

The findings underscore the significance of harmonizing climate regulation with banks' own strategies and developing strong customer relationships. This alignment not only improves the prospects for growth but also helps mitigate conflicts between short-term economic objectives and long-term sustainability goals.

To conclude, the research demonstrates the importance of understanding the challenges and opportunities presented by sustainable finance in the context of climate-related targets and regulations. By addressing these challenges and embracing the identified opportunities, Finnish banks can position themselves as leaders in sustainable finance, driving positive change and contributing to the transition to a more sustainable and resilient future.

Engaging in the research process has significantly enhanced my understanding of sustainable finance regulation, along with its associated challenges and opportunities. The experience has not only strengthened my professional competence but also provided clarity regarding my career aspirations. Overall, this research journey has been instrumental in shaping my perspective and driving my commitment to making a positive impact in the field of sustainability.

Sustainable finance is a rapidly evolving field, and its impacts may change over time. As the research is based on a rather short time period, it may not capture the long-term trends and dynamics of sustainable finance. Conducting longitudinal analyses that track the changes and developments in sustainable finance over time could provide valuable insights for future research. In addition, as the research is a representation of opinions of Finnish experts, the results don’t capture the broader global perspectives on sustainable finance. To enhance the generalizability of the findings, conducting comparative studies across different countries or regions could be a good extension for this research.

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Appendix 1. Lists of identified opportunities and challenges

AGGREGATE THEME	IDENTIFIED OPPORTUNITIES
TRANSITIONING FROM SRI AND ESG TO SUSTAINABLE FINANCE	• Enhanced collaboration holds the key to uncovering opportunities linked to sustainability. • The growing interest in sustainable development and finance is generating fresh demand for sustainable products, which in turn is creating novel business opportunities and driving profits. • By increasing reporting requirements, transparency and trust can be improved, resulting in enhanced customer relationships. • The use of uniform sustainability criteria can prevent greenwashing and disinformation, thereby making it easier to finance sustainable operations. • The European Union member countries have the chance to contribute towards resolving global climate challenges. • The implementation of new tools and requirements enhances the management of risks, thereby increasing the level of financial security. • Transparency serves as an effective measure in preventing greenwashing and managing reputational risks. • Banks have the opportunity to motivate and engage customers by providing sustainability expertise, as customers increasingly expect this from their financial institutions. This can also enhance customers' climate knowledge. • Setting long-term sustainability objectives can facilitate stronger and more enduring relationships with customers. • Planning for sustainable operations can improve a company's long-term performance and generate value for their customers.
OPERATIONS IN FINLAND AND MARKET CHARACTERISTICS	• Finland attracts foreign investments due to high educational levels and technological development • Large forests create new business opportunities • Positive international presence in climate work improves international competitiveness • Expertise in clean technology and innovation: Banks can capitalize by providing finance to clean tech startups.

AGGREGATE THEME	IDENTIFIED CHALLENGES
REGULATION TENSIONS	• Implementing regulations can be challenging due to contradictions and their detachment from reality. • Interpreting complex regulations can be challenging due to their ambiguity. • As the volume of EU and national regulations increases, fulfilling administrative requirements and obligations can become burdensome. • Regulations that focus on achieving specific goals require intensive monitoring of actions and outcomes. • Meeting regulatory requirements can be costly due to the need for additional resources.
RISK MANAGEMENT	• Regulatory landscape around climate change is evolving rapidly, with new reporting standards and disclosure requirements being introduced regularly. Banks need to stay updated with these changes and adapt their risk management practices accordingly. • Climate change risks are uncertain and complex, making it challenging to estimate their likelihood and potential impact accurately. • Industry-specific variations can create inconsistencies and additional challenges in implementing regulations from the perspective of sustainable finance. • Climate change introduces new risks for banks and customers, making operational risk management challenging. • Conflicting short-term and long-term objectives increase administrative burden. • Sustainability improvements lead to increased financial risks, requiring more resources and expertise. • Accurate information is challenging to get from small and medium-sized customers, that are not obligated to do reporting • Industry-specific differences challenge banks’ capabilities to comply with regulation (e.g., EU Taxonomy) • Banks’ and customers’ sustainability risks are interconnected - lack of transparency challenges risk management • Climate change poses new types of risks: Direct risks (e.g., flood damage) can hamper the banks’ or customers’

	operations, or lower the value of a collateral assigned to a loan. Transition risks (e.g., changes in international regulations, or financial losses caused as a result of changing prices.
CUSTOMER ADAPTATION AND ZERO NET ECONOMY	• Climate knowledge is deficient among customers. • Customer processes require more time, knowledge, and money • Small and medium-sized enterprises don't yet have reporting obligations and lack the knowledge necessary to fulfill them. • Banks must attract new customers through sustainable finance while retaining those who do not meet the criteria. • Other unforeseen global crises distract from climate issues, diverting attention from them.

Appendix 2. Interview questions in English

BANK’S OWN POLICIES & OFFERINGS

1. How is corporate responsibility and sustainable development taken into account in your bank's internal operating environment (values, operating principles, working conditions)? How about in the external operating environment (services, products, demand and competition)?
2. What are the main differences between sustainable financing and traditional financing?
3. What kind of green products or services can be found in your bank's product portfolio and on what criteria are they based (eg green loans -% of total loans, % of ESG investment of total investment)?
4. What are the pros and cons of providing sustainable finance from a funder’s perspective?
5. Do your customers know how to request these green options and, if not, how actively are they introduced to customers?
6. How is your employees’ corporate responsibility / sustainability / climate know-how maintained in your bank?
7. How is your customers' corporate responsibility / sustainability / climate know-how maintained in your bank?
8. How much climate change is reflected in your bank’s daily operations on a scale of 1-5? 1 = not at all, 2 = not that much, 3 = I don’t know, 4 = a little, 5 = a lot.

EU REGULATION – CHALLENGES & OPPORTUNITIES

9. The Paris Agreement seeks to limit global warming to less than two degrees. The EU's climate package aims for carbon neutrality by 2050 - Finland aims for this by 2035. Does your bank have its own carbon neutrality goal?
10. How is climate change and related regulation reflected in your bank's daily operations?
11. As a part of the European Green Deal, the sustainable financial markets package includes EU taxonomy, ie the classification system for sustainable finance. The sustainability criteria guide funding and investment in measures that build sustainable future. How does your bank promote these ecological transitions?
12. On which measures your bank’s green products and services are based?
13. How do you measure your customers’ level of sustainability?
14. What kind of threats does climate change and related regulation pose for your bank?

15. What kind of opportunities does climate action create for your bank?
16. How important do you consider the role of a Finnish bank in combating climate change on a scale of 1-5? 1 = not important at all, 2 = not very important, 3 = I don’t know, 4 = somewhat important, 5 = very important

FUTURE OF SUSTAINABLE FINANCE

17. In your opinion, through which industry can your bank most effectively contribute to the achievement of climate goals?
18. In your opinion, which industry poses the greatest obstacle to achieving climate goals?
19. How has corporate responsibility reporting affected and will affect your bank's service production?
20. How is the implementation of green products and services ensured and monitored?
21. How is your bank planning to promote corporate social responsibility in the future?
22. What is your bank’s greenest goal? What is your own green goal?
23. How would you describe green banking in 2030?
24. Other important issues you want to discuss about?