# Governance of wicked problems

## The case of Swedish banks and the wicked problem of biodiversity loss

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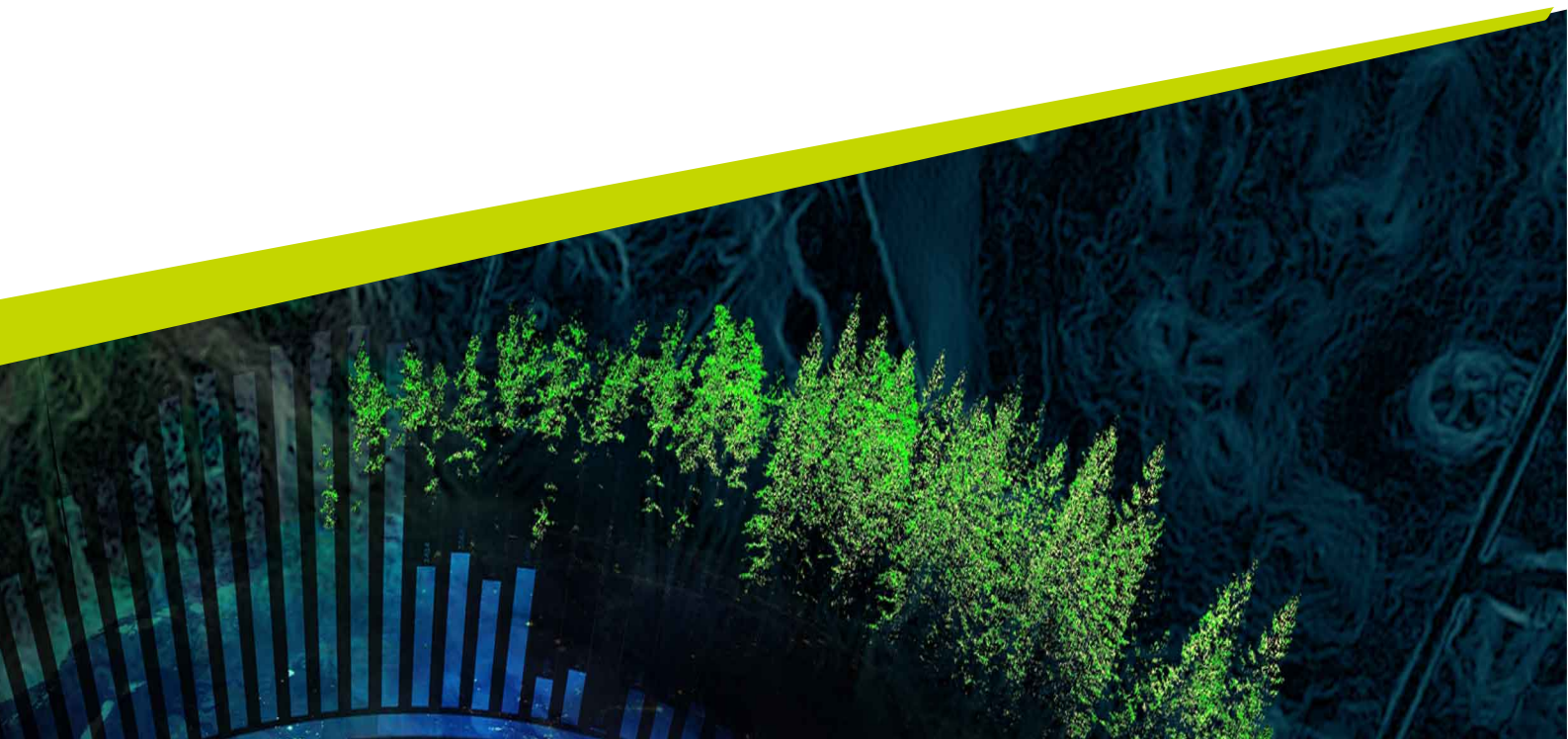

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*The case of Swedish banks and the wicked problem of biodiversity loss*

Evelina Bingmark & Karl Lodén

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# Abstract

As the number of organizations that integrate sustainability in their operations has significantly increased, the issue of sustainability has moved away from being strictly a governmental issue to becoming a governance issue - involving not only the public sector but also the private. Different levels of authority and power try to manage these global sustainability issues, which are defined as wicked problems. However, there is paucity in research on how individual organizations can manage these global wicked problems on a local level, with an increasing number of stakeholders and global governance models. With this research gap identified, this study aims to contribute to the research knowledge of how companies at a local governance level manage global wicked problems through engaging stakeholders and global governance models. To fulfill this aim, the case of Swedish banks is chosen to study along with the wicked problem of biodiversity loss - since biodiversity loss is considered as the most irrevocable environmental crisis, is a wicked problem in need of financing, and is recognized on a global level as a pressing issue to solve.

To address this research aim, the study explored various management approaches that organizations can use to manage wicked problems. A conceptual framework was developed - inspired by Multilevel governance, the SDG compass, research on wicked problems and stakeholder engagement. To explore this theoretical approach, a single case study was conducted on four Swedish banks through semi-structured interviews. The study also investigated existing biodiversity frameworks, initiatives and KPIs relevant for Swedish banks.

The study concludes that global wicked problems, i.e. sustainability issues, need to be managed at several governance levels - not only on a governmental level. After investigating how Swedish banks manages biodiversity loss, individual organizations are encouraged to tackle wicked problems by first understanding the issue, while using stakeholders, global frameworks, and initiatives to gain knowledge and inspiration. Having defined the problem, future steps include defining priorities and integrating said priorities - when a complete understanding is fulfilled. This study contributes to more knowledge on how organizations could manage global wicked problems on a local level, and especially on a sectoral level for the financial industry. Future research is encouraged to investigate the possibility of managing wicked problems through customers specifically, in addition to analyzing how managing wicked problems can differ depending on if an organization has a direct or indirect effect on the problem.



*Keywords*: Multilevel governance, wicked problem, stakeholders, Biodiversity loss, Swedish banks, Agenda 2030, frameworks

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# Abbreviations

| | |
|---|---|
| CBD | Convention on Biological Diversity |
| GRI | Global Reporting Initiative |
| IPBES | The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services |
| IPCC | Intergovernmental Panel on Climate Change |
| KPI | Key Performance Indicator |
| MLG | Multilevel governance |
| PRB | Principles for Responsible Banking |
| SDG | Sustainable Development Goal |
| UN | United Nations |
| UNEP FI | United Nations Environment Programme Finance Initiative |
| USAID | United States Agency for International Development |

# 1. Introduction

*This chapter begins with an introduction to the study's theme and serves as a foundation for the following problem statement. The study's aim and research question are then created based on the specified research gap, followed by the theoretical and empirical delimitations which offer the reader a better understanding of the study's content.*

## 1.1 Background

Sustainable development has become a symbolic discourse of our time (Mensah, 2019). The most widely accepted and well-known definition of sustainable development was created by the UN in the Brundtland Commission report (Brundtland, 1987). They define sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (ibid.). Since 1987, the concept of sustainable development has gathered new meanings as it has moved away from being a strictly governmental issue to becoming a governance issue, involving not only the public sector but also the private (Glass & Newig, 2019). Sustainable development has thereafter become incorporated into the business sphere where the focus has moved from serving only the shareholders, to focusing on how all stakeholders are engaged in and affected by a company's operations through corporate social responsibility (CSR) (Lindgreen & Swaen, 2010).

One complex aspect of sustainable development is that research has in the past years started to define global sustainability issues as wicked problems (Blok et al., 2016), which is portrayed as complex, poorly defined, and subjective problems without a straightforward solution (Weymouth & Hartz-Karp, 2018). Companies cannot solve wicked problems but are instead encouraged to manage the problems together with stakeholders - even if multiple levels of authority, opinions and values from stakeholders make it more complex (ibid.). The involvement of multiple actors when managing wicked problems is due to a more globalized world where governance of sustainability issues has started to involve the private sector (Glass & Newig, 2019). Research has started to highlight sustainability issues as wicked

problems as more actors are now involved in the solution process than before, when only governments were responsible for sustainable development (ibid.).
One acute global sustainability issue companies need to deal with today, which is defined as a wicked problem, is biodiversity loss (Eastwood et al., 2020; Rodriguez et al., 2007; Sharman & Mlambo, 2012). Some consider biodiversity to primarily be a case for biologists, but the concept also applies to business research - since life on earth and the global economy are highly dependent on biodiversity (Pascual et al., 2021). Biodiversity is defined by Convention on Biological Diversity (hereafter CBD) as "the variability among living organisms from all sources including […] terrestrial, marine, and other aquatic ecosystems and ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems "(Gaston & Spicer, 2013). Biodiversity is currently threatened, with over 1 million species facing extinction within the upcoming decade (ibid.). This issue is defined as biodiversity loss (IPBES, n.d.) - which is unprecedentedly caused by humans (IPBES & IPCC, 2021), economic activities (Martins, 2021; UNEP FI & UNEP-WCMC, 2021), climate change, and unsustainable production and consumption patterns (IPBES, 2019).
The importance of reducing biodiversity loss is recognized in Agenda 2030 - a global governance model invented by the United Nations (hereafter UN) (UN, n.d.1). Agenda 2030 includes 17 sustainable development goals (SDGs), where the goal of reducing biodiversity loss is included. Research has defined the SDGs as wicked problems too (Head, 2019; van Tulder, 2018), and multi-level governance theory (MLG) has stated that the solution for governing and managing the wicked problems of sustainability issues needs to involve actors at different levels (Karlsson, 2007) - such as local companies and organizations.
The achievement of Agenda 2030 is often measured at a national level, where Sweden is one of the best in contributing (SDG index, 2021). However, as MLG states, companies need to contribute as well when solving wicked problems - such as the SDGs or biodiversity loss. In Sweden, where biodiversity loss is a national focus to achieve sustainable development (Government Offices of Sweden, 2018), the financial industry has been identified as one of the most critical industries to create sustainable change (Finansinspektionen, 2016) and managing biodiversity loss (CBD, 2020a; UNEP FI, 2020; Ziolo et al., 2021). This goes hand in hand with research that says management of wicked problems, e.g. biodiversity loss, and the achievement of sustainable development cannot happen without financing and financial actors and their stakeholders (Pettorelli et al., 2021).

## 1.2 Problem statement

While business studies have addressed wicked problems and sustainable development on a global level through researching policy making, global

guidelines, regulations, stakeholders and frameworks (Boiral and Heras-Saizarbitoria, 2020; Hahn and Kühnen, 2013), research on managing global wicked problems, i.e., sustainability issues in this study, with stakeholders on a local level is limited (Lönngren & van Poeck, 2020). When sustainability moved from solely being a governmental issue to becoming a governance issue, more local actors were encouraged and bound by law to manage the global wicked problems of sustainability issues (Daniell & Kay, 2017). Sustainable change is now encouraged and mandatory to happen at multiple levels of authority, leading to more local actors in need of guidance on how to manage these wicked problems (ibid.). The existing global governance models, frameworks, and initiatives thus need to guide actors on more levels than just the governmental one. Agenda 2030 is one example of a global governance model that can aid local actors to manage global wicked problems, i.e. sustainability issues (Santos-Carillo et al., 2020).

Achievement of Agenda 2030, with its 17 SDGs, is inherently linked to successfully engaging stakeholders (Boiral & Heras-Saizarbitoria, 2017; GRI et al., 2016). Research states that stakeholder engagement can serve companies with diverse insights and opinions as well as valuable and new information about possible solutions to resolve sustainability issues (USAID, 2018). However, there is a paucity of research on how this can be done in practice when managing global wicked problems on a local level. In addition, companies also have difficulties in deciding which stakeholders they are accountable for and how far that duty extends when managing sustainability issues locally (Boiral & Heras-Saizarbitoria, 2017) - which further proves a research gap in how companies manage global wicked problems, on a local governance level, together with stakeholders.

To address this research gap on wicked problems in relation to stakeholder engagement, a current case example has been chosen to investigate how local companies are currently managing wicked problems that are global sustainability issues. The chosen sustainability issue is biodiversity loss, which is characterized as the most irrevocable and pressing environmental crisis (IPCC, 2022), and the issue is pushing beyond our planetary boundaries, i.e., the tipping point where humans can no longer sustain and safely function (Rockström et al., 2009). Managing biodiversity loss is thus crucial in terms of sustainable development (ibid.) - which is why biodiversity loss is chosen as a case example in this study when researching how to manage wicked problems locally.

In addition to biodiversity loss being a wicked problem, financial markets and financial planning are also considered wicked problems (Ritchey, 2013), or rather wicked environments - meaning that the environment that is being operated within holds a wicked nature (Mainelli, 2008). The “wickedness” extends when concepts such as biodiversity loss and financial operations are combined (Maron et al., 2016.). However, the possibility to manage Agenda 2030 and the wicked problem of biodiversity loss cannot happen without financing and financial actors (CBD,

2020a; Government Offices of Sweden, 2021; Mistra, 2021), since one of the main challenges needed to be solved is lack of funding in biodiversity loss (Pettorelli et al., 2021). Therefore, biodiversity loss in connection to the financial industry is chosen to be the case example of how individual organizations at a local level manage wicked problems.

A well-functioning financial industry, together with its stakeholders, can be a catalyst for managing wicked problems and reduced biodiversity loss specifically. The sectors included in the Swedish financial industry are e.g., banks, credit market companies, insurance companies, mutual funds, pension funds and private equity companies (Swedish Bankers' Association, 2020a). The banking sector specifically is mentioned as a key player when reducing biodiversity loss (UNEP FI & UNEP-WCMC, 2021), and in Sweden especially, since they constitute the largest group of companies in the financial industry in terms of total assets (Swedish Bankers' Association, 2020b). Swedish banks thus have the power to direct a considerable number of financial resources towards reducing biodiversity loss and to achieve Agenda 2030 nationally. In addition, Sweden's largest banks (Danske Bank, Handelsbanken, Länsförsäkringar, Nordea, SEB, Skandia and Swedbank) are currently working towards reduced biodiversity loss (Fair Finance Guide, 2020). This makes it a relevant sector to use as a case example when studying the research gap of how individual organizations at a local governance level manage global wicked problems, i.e., sustainability issues, through the engagement of stakeholders and global governance models and frameworks.

## 1.3 Aim and research question

There exist governance models for wicked problems on a global and national level - for instance, Agenda 2030. However, research on managing wicked problems, i.e. global sustainability issues, on a local level is limited (Lönngren & van Poeck, 2020). Current research is also lacking in how to engage stakeholders in practice when managing wicked problems locally, even if engaging stakeholders in managing sustainability issues is proven to be beneficial (Banerjee & Bonnefous, 2011; Dobele et al., 2014; Lindgreen & Swaen, 2010). The aim is therefore to contribute to the research knowledge of how companies at a local governance level manage global wicked problems through engaging stakeholders and global governance models and frameworks. To fulfill this aim, the case of Swedish banks has been chosen along with the wicked problem of biodiversity loss, which have resulted in the research question presented below.

1. *How do Swedish banks manage the wicked problem of biodiversity loss?*

## 1.4 Delimitations of the study

The theoretical delimitation focuses on Multilevel governance and Stakeholder theory because both have been used in previous business studies on how to manage wicked problems globally (Karlsson, 2007) and an effective reduction of biodiversity loss cannot happen without stakeholder engagement (Boiral & Heras-Saizarbitoria, 2017). The concept of wicked problem is also presented since it describes the character of biodiversity loss on a societal level - and how banks manage a wicked problem, i.e., biodiversity loss, can be investigated through governance and stakeholder analysis.

There are multiple global frameworks, governance models and initiatives that include biodiversity, e.g., Agenda 2030, EU taxonomy, Finance for Biodiversity Pledge and Post-2020 Biodiversity Framework (European Commission, n.d.; UNEP FI, 2019). However, due to limited time and resources going into this study, a second theoretical delimitation is to focus on one governance model as context. This study will mainly focus on managing biodiversity loss within Agenda 2030, since it is frequently used worldwide (UN, n.d.1). However, the study will also present other essential global frameworks, initiatives and KPIs that can assist banks when reducing biodiversity loss, i.e., managing a wicked problem, - but they are not a focal context in this study.

The empirical case example of this study focuses on Swedish banks that manage biodiversity loss. Swedish banks are chosen because they have current efforts to manage biodiversity loss (Fair Finance Guide, 2020), in addition to being vital players in managing this specific wicked problem (UNEP FI & UNEP-WCMC, 2021). While banks can have different purposes, forms and countries they operate in, the scope of this case study is to interview experts on biodiversity loss who also work with building a bank's sustainability strategy - a bank that either is Swedish or has an operation in Sweden. However, no delimitations are made regarding the extent of efforts Swedish banks have put into reducing biodiversity loss - only that the banks have started managing biodiversity loss.

# 2. Theoretical framework and literature review

*To complete a conceptual framework for this study's research question, it is relevant to define and elaborate on previous business research and current applicable theories. This section introduces the concepts of Multilevel governance, Wicked problems and Stakeholder theory. All theoretical concepts are followed up by complementary and relevant contexts to better shape the conceptual framework intended for its aim.*

## 2.1 Multilevel governance

Multilevel governance (MLG) is defined as "the dispersion of authority within and beyond national states" (Hooghe et al., 2001:197). The concept constitutes a "system of continuous negotiation among nested governments at several terrestrial tiers – supranational, national, regional, and local" (Hooghe & Marks, 2003:234).
MLG was introduced by Gary Mark in 1993, to describe and understand the decision-making dynamics and regional integration of the European Union, at different jurisdictional levels (Maggetti & Trein, 2019). MLG has mostly observed jurisdiction vertically from the top down from supranational to local governments but has over time expanded to authority traveling from down to up but also horizontally from central state institutions across independent non-state actors such as business representatives and NGO's, etc. (ibid.). Although highly connected to European policymaking and implementation, the concept of MLG has since traveled beyond the EU and can be put into multiple practices and contexts, such as how businesses manage sustainability issues (Tortola, 2017).
Sustainability issues such as biodiversity loss can result in severe impacts on global ecosystems, which are crucial to sustaining life on earth (IPCC, 2022). This is referred to as 'global public goods' in MLG (Karlsson, 2007). However, since sustainability is a global public good, it may seem reasonable that it falls under global governance responsibility but delegating responsibility to sovereign states is far more complex and other actors at different levels may be needed (ibid.). MLG can serve as a useful tool when dealing with complex issues such as unsustainable

development, climate change or biodiversity loss. These complex issues, or wicked problems, call for governance to travel both vertically, as in governance tiers supranational, national, regional, and local, but also horizontally, as in different sectors and stakeholders (ibid.). The complexity here is to locate where governance is needed and at which level.

As the world keeps globalizing and developing, governments' way of serving the public becomes more complex. Centralized authority can no longer, by themselves, keep up with responsibilities and deliver to the public the goods that they need, e.g., solutions for sustainability issues. Therefore, governments now turn to the private sector to receive the aid that is needed. By decentralizing governance and allocating it horizontally across the private sector, higher government tiers can achieve successful public policy outcomes. (Daniell & Kay, 2017)

One empirical example of how MLG is put into practice is the Agenda 2030 and the SDGs developed by the UN. The UN, as a supranational level government, sees it fit to involve and allocate governance both vertically, as all member states, national-level governments, share the responsibility of achieving Agenda 2030 (Croese et al., 2021), and horizontally to the private sector (Daniell & Kay, 2017) - as a way of decentralizing the governance of sustainability issues. Furthermore, to manage the SDGs indirectly, local actors are encouraged to engage with several different industries on multiple levels that have a direct impact (UNEP FI, 2020). In the next part of this study, Agenda 2030 will be further elaborated on as a governance model.

### 2.1.1 Agenda 2030 as a governance model

As the number of organizations that integrate sustainability in their operations has significantly increased (KPMG, 2020), the issue of sustainability has moved away from being a strictly governmental issue to becoming a governance issue - involving not only the public sector but also the private sector (Glass & Newig, 2019). This has led to an increase in the number of sustainability governance models, global frameworks and initiatives companies use in practice (BDO, 2021; Kücükgül et al., 2021), which can be seen as tools of MLG theory - since MLG is often used as guidance for best practice in policy making and implementation (Tortola, 2017). In addition, MLG is also useful in multiple practices other than within the EU (ibid.), e.g., when managing sustainability issues (Marzęda-Młynarska, 2011) - which is why governance models such as Agenda 2030 have been invented.

Agenda 2030 is a global and frequently used governance model in research and practice (Eden & Wagstaff, 2021; Santos-Carrillo et al., 2020), developed by the UN in 2015 (UN, n.d.1). Agenda 2030 includes 17 SDGs (Appendix A) - that combined provide the foundation for the global strategy of achieving sustainable development by the year 2030 (ibid.). All UN member states signing Agenda 2030

demonstrates the importance and relevance of contributing to Agenda 2030 (Idowu et al., 2020), and especially together with stakeholders which influence specific objectives, policies and strategies connected to Agenda 2030 (van der Waal & Thijssens, 2020; Weymouth & Hartz-Karp, 2018).

In a previous study, Agenda 2030 is presented as an example of a governance model as a way of managing sustainability issues (Santos-Carrillo et al., 2020). Research highlights the importance of power from multiple actors that can help solve sustainability issues at different levels in society (ibid.). However, some weaknesses are presented in both domestic and global governance, i.e. difficulties in implementing Agenda 2030 at all levels. Therefore, the participation of local and non-governmental actors is mentioned as an effective and decentralized governance of sustainability issues. (ibid.). The financial industry specifically is mentioned as key to achieving Agenda 2030, since their financing needs to govern the salvation of sustainability issues (International Peace Institute, 2019; UN, 2019).

Utilizing Agenda 2030 can help companies govern sustainability issues, while capitalizing on various advantages e.g., improved stakeholder relations, staying on top of policy changes, using similar terminology, motivated employees, and the possibility to stabilize communities and economies (GRI et al., 2016). The private sector can also earn up to 12 USD trillion more by contributing to Agenda 2030 (Business & Sustainable Development Commission, 2017). However, research has presented Agenda 2030 as not specific enough (Persson, et al., 2016), which led to the creation of a governance tool when managing sustainability issues - the SDG Compass, which is presented below.

### 2.1.2 SDG Compass as a governance tool

Some business studies have stated that Agenda 2030 is considered difficult to use as a governance model for sustainability issues due to a lack of concrete guidance, applicability and knowledge in reporting and adaptation (Persson, et al., 2016) - specifically for companies (Hacking, 2019; Sullivan et al., 2018). One solution to facilitate the implementation of Agenda 2030 is the SDG Compass, which can also be seen as a tool for governing and managing sustainability issues, together with stakeholders (GRI et al., 2016).

The SDG Compass includes five steps that aid companies in increasing their commitment to Agenda 2030 (GRI et al., 2016), each step is described in table 1 below. These five steps guide companies on how to govern and implement the SDGs and thus contribute to the achievement of Agenda 2030 and management of sustainability issues (ibid.). The SDG Compass is considered relevant to introduce since this study investigates current practices to manage biodiversity loss - an issue included in Agenda 2030 (UN, n.d.1) and is the chosen case example of a wicked problem in this study. The SDGs themselves are too considered wicked problems (Head, 2019; van Tulder, 2018), which further motivates the SDG compass to be

used as inspiration and guidance for the self-constructed conceptual framework when researching the management of wicked problems. What different business studies have researched on regarding wicked problems is presented in the next section.

*Table 1. Description of the steps in the SDG Compass (GRI et al., 2016).*

| Step | Definition |
|---|---|
| Step 1: Understand the SDGs | Become familiar with the SDGs through conventional definitions and established knowledge, as well as comprehend the possibilities and challenges they offer for the company's operation. |
| Step 2: Defining priorities | Define priorities when implementing the SDGs. Stakeholder engagement and evaluation techniques such as the GHG Protocol and Life Cycle Analysis can be used. |
| Step 3: Setting goals | Set measurable goals based on the impact evaluation and prioritization made in step two. |
| Step 4: Integrating | Goal achievement is contingent on the objectives being integrated into daily business processes. Step four thus include; creating sustainability policies and strategies, conducting internal education, and engaging in cross-sector partnerships. |
| Step 5: Reporting & communication | Report and communicate the progress against the SDGs regularly. |

## 2.2 Wicked problem

The term "wicked" was first introduced in 1973 by Rittel and Webber (1973), as a way of explaining problems that are the opposite of tame and need non-traditional linear solutions and resources. A wicked problem is a poorly defined and subjective problem without a straightforward solution (Weymouth & Hartz-Karp, 2018). In opposition to tame problems, wicked problems are complex, meaning that multiple factors and stakeholders come into play with different ideas and values - that all need to be put into consideration when solving wicked problems despite enhancing the complexity (Barnett et al., 2018; Blok et al., 2016). Organizations also need knowledge about the current conditions of the problem, as well as the desired future state of the problem and how an actor wishes to overcome it - otherwise, it will be difficult to manage the problem and proceed with actions (Barnett et al., 2018).

The concept of wicked problems has been researched plenty since 1973 (Barnett et al., 2018; Blok et al., 2016; Rodriguez et al., 2007; Sharman & Mlambo, 2012; Weymouth & Hartz-Karp, 2018), and is now commonly associated with societal sustainability issues in business studies (Camillus, 2008; Dentoni et al., 2012; Lehtonen et al., 2018; Waddock, 2012). Sustainability issues are depicted as wicked problems in research due to the enhancement of complexity where even more stakeholders need to be considered and that sustainability issues tend to be global problems (Walls, 2018). The complexity is also increased for acute sustainability issue, where there is little to no time to manage the problem (ibid.). Biodiversity loss is one of these complex and acute sustainability issues where time for salvation is limited (IPBES, 2019). How business research characterizes biodiversity loss as a wicked problem is elaborated on below.

### 2.2.1 Biodiversity loss as a wicked problem

The concept of wicked problems is often researched in connection to environmental sustainability issues specifically (Lehtonen et al., 2018), and biodiversity loss nonetheless (Rodriguez et al., 2007; Sharman & Mlambo, 2012). Sharman and Mlambo (2012) have identified five characteristics of why biodiversity loss specifically can be seen as a wicked problem. The first is that the concept of biodiversity, in general, is missing a definitive formulation. Hence, there is also an issue in defining what the loss of biodiversity is (ibid.). Rodriguez et al. (2007) argue that the lack of definitions of biodiversity loss is rooted in the concept's ability to change in time, space, and scale.

The second characteristic of the wicked problem of biodiversity loss lies in the lack of immediate and ultimate solutions. What solutions are the best varies, and different stakeholders use different global frameworks for comprehending and framing biodiversity loss. Local solutions are common but dependent on how the problem is viewed and framed. (Sharman & Mlambo, 2012)

The third characteristic is that biodiversity loss does not allow for trial-and-error learning. Since biodiversity loss is ever-changing, trying to solve the problem can result in unpredictable consequences and further negative spirals. This leads to the fourth characteristic: there is no exhaustive list of potential methods for halting biodiversity loss. Unlike climate change, where the main driver behind the problem is greenhouse gasses, multiple factors affect biodiversity loss, and no simple method to solve the problem will be available. (Sharman & Mlambo, 2012)

The fifth characteristic is the disparity in how biodiversity loss is represented. There are different opinions on what is causing biodiversity loss. Some may blame the failure of not reducing biodiversity loss on lacking policies, while others blame it on illegal logging, endangered animal species and the combustion of fossil fuels - i.e., there is no agreed opinion in terms of biodiversity loss. (Sharman & Mlambo, 2012)

The concept of wicked problem is considered relevant to include in this study since it is used to describe the problem of biodiversity loss on a societal level. The complexity of wicked problems and biodiversity loss specifically is considered in the interviews and data analysis, alongside the importance of engaging stakeholders when managing a wicked problem. Stakeholder theory and research on how to engage stakeholders when managing a wicked problem are explained in the next section.

## 2.3 Stakeholder theory

Stakeholders are defined as "groups and individuals who can affect or be affected" by acts related to the generation of value and exchange (Freeman et al., 2010:46). Engaging stakeholders when integrating sustainability into a company is essential (Hörish et al., 2014), and Stakeholder theory is highly connected to sustainable development. The theory challenges the purpose of a company to go beyond serving only shareholders, and assists in creating an operation that benefits society, both in the short-term and long-term perspective (Hörish et al., 2014). Stakeholder theory is commonly used when explaining how organizations manage both wicked problems (Dentoni et al., 2012) and biodiversity loss (Boiral & Heras-Saizarbitoria, 2017) - making it a relevant theory for this study.

According to Stakeholder theory, society is viewed as a dynamic and interconnected network of relationships, including diverse stakeholders (Gray et al., 2014). Within this theory, organizations and their stakeholders are not analyzed separately, but rather the relationship between them and how they together create change (ibid.) - which in this study translates to how Swedish banks manage biodiversity loss together with their stakeholders.

Engaging stakeholders when managing sustainability issues is not always easy, it includes challenges that can affect companies' everyday practices (Boiral & Heras-Saizarbitoria, 2017). One challenging aspect for companies is determining which stakeholders they are accountable for and how far that duty extends (Gray et al., 2014). It is also vital to engage stakeholders accurately when managing sustainability issues, since it can strengthen a company's credibility and decrease internal and external pressures to manage the issue (Boiral & Heras-Saizarbitoria, 2017).

Business research in sustainability has focused very little in-depth on how companies manage biodiversity loss with stakeholders, which in turn Stakeholder theory can be useful for (Boiral & Heras-Saizarbitoria, 2017; Sterling et al., 2017) when investigating how wicked problems can be managed. The success of reducing biodiversity loss as a wicked problem depends greatly on how well stakeholders are engaged (Barnett et al., 2018; Blok et al., 2016), which is why research on stakeholder relations is considered needed in this study. One concept in Stakeholder

theory that can be useful when explaining how to overcome the wicked problem of biodiversity loss is Stakeholder engagement (International Finance Corporation, 2007; Torelli et al., 2019; USAID, 2018) - which is elaborated on below.

### 2.3.1 Stakeholder engagement

The concept of Stakeholder engagement has been used in previous research to analyze sustainability issues (Banerjee & Bonnefous, 2011; Dobele et al., 2014; Lindgreen & Swaen, 2010). However, it can differ in meaning depending on what stakeholders consider "engagement". While some define it as "The direct involvement of all company stakeholders" (Kujala et al., 2022), others describe it as a "...continuous process between a company and those potentially impacted that encompasses a range of activities and approaches." (International Finance Corporation, 2007).

Stakeholder engagement is highly connected to managing wicked problems (Dentoni et al., 2012), and biodiversity loss specifically (CBD, 2020a). By engaging stakeholders, biodiversity has the potential of becoming a central aspect of companies' sustainability strategies (Boiral & Heras-Saizarbitoria, 2017). Engaging stakeholders can serve companies with a diverse set of opinions and insights, as well as valuable and new information about possible solutions to sustainability issues (USAID, 2018). The concept of stakeholder engagement in relation to managing biodiversity loss can assist organizations and their stakeholders in how to manage wicked problems in general.

Having full partnership and dialogues with stakeholders is essential to collect stakeholders' opinions, knowledge and wishes - which contribute significantly to management of sustainability issues (USAID, 2018). In addition, it is also vital to engage the correct stakeholders that can contribute to making a difference or are highly affected by the outcome - since efforts towards managing sustainability efforts will be more accurate and efficient (Capitals Coalition & Cambridge Conservation Initiative, 2020). When finding the correct stakeholders, a company needs to decide on what level to engage them; Informing, Consulting or Decision-making (USAID, 2018). These levels of approaches are presented in relation to reducing biodiversity loss in table 2, but apply to other wicked problems as well, i.e., sustainability issues (ibid.).

*Table 2. Three approaches to Stakeholder engagement (USAID, 2018).*

| **Three approaches to Stakeholder engagement** | |
|---|---|
| **Informing** | Stakeholders are notified about decisions that have already been reached or actions that have been or will be executed. |

| | |
|---|---|
| **Consulting** | Stakeholders are questioned about their opinions regarding different options, decisions, or activities. Being consulted might happen through the exchange of material or monetary incentives or because of contractual responsibilities. |
| **Decision-making** | Stakeholders are involved throughout the whole decision-making process or activity, and it entails collaboration and two-way communication. This level of engagement goes through the stages of "...identifying the problem, consultation, gathering information, formulating alternatives, and exploring their potential consequences, implementation, and evaluation". |

This study states that Swedish banks manage the wicked problem of biodiversity loss, and stakeholders need to be included. However, there is a paucity of research on how banks specifically can use stakeholder engagement when managing a wicked problem such as biodiversity loss. Instead, previous research has focused more on connecting stakeholder engagement to unspecific companies' biodiversity efforts (Boiral & Heras-Saizarbitoria, 2017; CBD, 2020a). Nevertheless, the encouragement of engaging stakeholders when managing the problem of biodiversity loss is widespread (Barnett et al., 2018; Blok et al., 2016; Boiral & Heras-Saizarbitoria, 2017; CBD, 2020a; GRI et al., 2016; USAID, 2018), making it useful in investigating how Swedish banks manage the wicked problem of biodiversity loss. The concept of stakeholder engagement will also be helpful in constructing a conceptual framework and executing both the interviews, analysis, and discussion.

## 2.4 Conceptual framework

A conceptual framework was developed to answer the research question of how Swedish banks manage the wicked problem of biodiversity loss. This study identifies biodiversity loss as a case example of a wicked problem, and the conceptual framework states that wicked problems can be managed via stakeholder engagement guided by the SDG Compass. This conceptual framework was not developed at the beginning of this thesis project. Rather, it was developed via an iterative analytical process where a literature review was conducted on management and governance theories and sustainability challenges while also collecting initial data on how Swedish banks manage biodiversity loss. The conceptual framework developed during this thesis project was used in the interviews, discussion, and analysis, and is demonstrated below in figure 1.

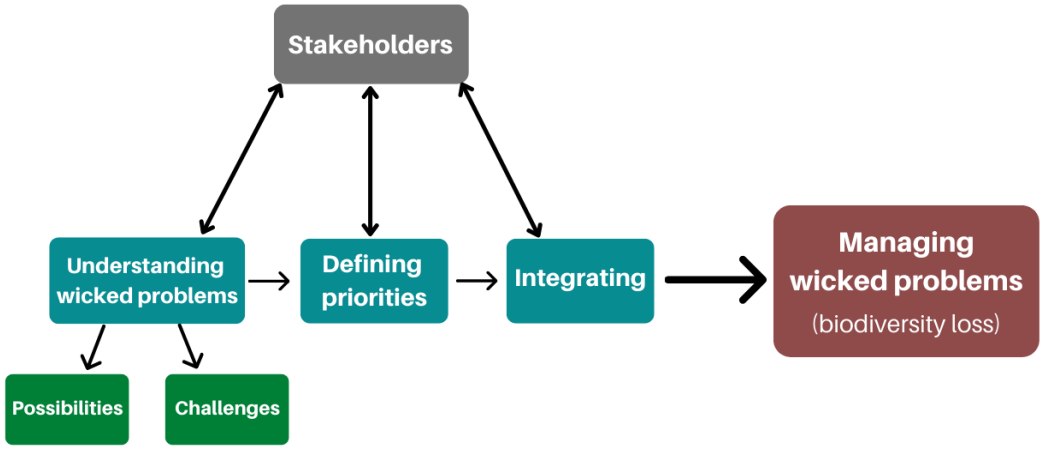


*Figure 1. A conceptual framework that identifies biodiversity loss as a wicked problem that can be effectively managed via stakeholder engagement.*

MLG has been used to explain efforts towards managing wicked problems (Karlsson, 2007), and the SDG Compass is considered a governance tool that can help companies manage wicked problems, such as the SDGs (Head, 2019; van Tulder, 2018) or, specifically for this study, biodiversity loss (Rodriguez et al., 2007; Sharman & Mlambo, 2012). The SDG Compass is therefore motivated to draw inspiration from in the conceptual framework to help identify and analyze practices used to manage wicked problems - i.e., practices of understanding wicked problems, defining priorities, and integrating these priorities (see figure 1).

Companies can use one or several steps in the SDG Compass that are considered needed and relevant to manage sustainability issues (GRI et al., 2016), which is the logic used when designing the conceptual framework. However, it is worth noting that the conceptual framework developed in this study differs from SDG Compass. While the SDG Compass is a guide for companies to implement and reach the SDGs in Agenda 2030, the conceptual framework developed in this study aims to help investigate how Swedish banks manage wicked problems, i.e. biodiversity loss. For this study, step 1 in the SDG Compass (understanding the SDGs), is considered relevant to draw inspiration from in the conceptual framework since a good understanding of sustainability issues can enhance business practices and positively affect sustainable development (Bateh et al., 2013). In contrast to the SDG Compass, step 1 in this study's developed conceptual framework is named *Understanding wicked problems*. Figure 1 also demonstrates that through understanding wicked problems, the process of managing wicked problems will include possibilities and challenges.

Step 2 (defining priorities) and step 4 (integrating) are used in the conceptual framework since research has identified these steps as vital for successful impact on sustainable development (Longoni & Cagliano, 2015; Vila et al., 2021). Step 3 (setting goals) and step 5 (reporting and communication) of the SDG Compass are

excluded because 79% of Sweden's largest companies do not have a goal for reducing biodiversity loss (Ecogain, 2021), and 65% of Swedish companies do not report or communicate their efforts towards reducing biodiversity loss (KPMG, 2020). Steps 3 and 5 are therefore not considered relevant enough to include in the conceptual framework since this study aims at investigating existing practices towards managing biodiversity loss as the case example of a wicked problem.

Previous research has connected Stakeholder theory with the management of wicked problems (Dentoni et al., 2012) and biodiversity loss (Boiral & Heras-Saizarbitoria, 2017; Sterling et al., 2017). Within this theory, the concept of Stakeholder engagement is highly relevant and used in current business research on wicked problems (Dentoni et al., 2012) and biodiversity loss (CBD, 2020a; Kujala et al., 2022) - to guide and assist companies how to engage stakeholders in practice (USAID, 2018). Stakeholder engagement is thus considered relevant to include in the conceptual framework, and the synergy between stakeholders and activities to manage wicked problems is demonstrated in figure 1. The engagement between an organization and its stakeholder is demonstrated through two-sided arrows - to highlight the mutual relationship.

Biodiversity loss is defined as a wicked problem (Eastwood et al., 2020; Sharman & Mlambo, 2012), and is considered relevant to include in the conceptual framework since it is the case example studied in this study. An investigation will be made on how Swedish banks manages this wicked problem, i.e. reducing biodiversity loss, through practices of understanding, defining priorities and integrating these priorities.

# 3. Methodology

*In the methodology chapter, the chosen methodology for this study is described and discussed. At the beginning of the chapter, the research design and its ramifications are presented. Then, the method for collecting data is discussed, together with the operationalization of the conceptual framework. Furthermore, the study is also debated in relation to different quality criteria and ethical considerations, before presenting criticism of the chosen method.*

## 3.1 Research design

This study was conducted through a qualitative method. Qualitative research was chosen since it is generally more focused on words rather than numbers, and often provides a deeper understanding of phenomenon than quantitative methods (Bell et al., 2019). Phenomenon in this study refer to stakeholder engagement and the wicked problem of biodiversity loss. Since the aim of the study was to understand how Swedish banks manages the wicked problem of biodiversity loss, it is difficult to quantify the meaning of how through a quantitative research design - therefore, a qualitative approach was considered more fitting. However, one of the consequences of choosing a qualitative method is the risk of losing a macro-perspective in the study (ibid.), which research has noted as important when studying areas within Agenda 2030 (Lawrence & Lawrence, 2019). Nevertheless, the benefits of gaining rich and deep data through a qualitative approach were considered more important, and thus a quantitative method was disregarded.

Within this study's qualitative approach, a single case study design was chosen to capture the benefits of gaining in-depth knowledge about a specific event, person, group, or process (Bell et al., 2019), i.e., knowledge about the case of Swedish banks. Considerations were made as to whether a single or multiple case study design was more appropriate. Since the aim was to understand how Swedish banks manage the wicked problem of biodiversity loss, observations were focused on the banks as a specific homogeneous group to draw conclusion from - which motivated a single case study. If the aim would have been to understand the differences and similarities between Swedish banks, and to draw conclusion to only the banking sector, then the banks would have been treated as a heterogeneous group. Each bank

would then have to be observed as an individual case, where a multiple-case study would have been preferred (Baxter & Jack, 2008). Nevertheless, since this study focuses on a homogeneous group, a single case study was chosen. A single case study is common and useful when conducting qualitative research (ibid.), which further motivated the choice. Furthermore, this case study held an instrumental character, meaning that the study focuses on one single broader issue or concern (Creswell, 2007) - i.e. the issue of biodiversity loss.

### 3.1.1 Research Philosophy and Paradigm

Research philosophy permeates all research and assists in determining a study's objective. Before conducting a study, researchers need to consider two philosophies - ontology and epistemology. Ontology is referred to the study where one seeks to understand the nature of reality, i.e., what reality is. The ontologistic position in this study is characterized by constructivism, which is common in qualitative research. The constructivist position sees knowledge as something undetermined that is continuously being socially constructed by social actors in a subjective reality and needs to be investigated from multiple points of view. Constructivism is similar to the epistemological position of interpretivism, which this study was characterized by, in the way that it is seen as a subjective way to approach knowledge. Where undetermined constructions, such as understanding what biodiversity loss is or how to manage it effectively, the need for subjectiveness and multiple points of view becomes apparent. (Bell et al., 2019)

Epistemology is often referred to as the study of knowledge and reflects on the method chosen to access the knowledge of social reality. The epistemological position in this study is characterized as interpretivism, which means that social reality is co-constructed through influences from the researcher and the research participants. This was done through semi-structured interviews with open-ended questions where the respondents were encouraged to give an elaborated answer. In that way, the respondents' interpretation of social reality is being interpreted by the researchers, leaving room for subjectivity. Interpretivism is a subjective form of epistemology and is fitting when researching subjective matters such as understanding, defining, and engaging in a subject, where the goal is to provide a deeper understanding of the matter - which is the case in this study. (Bell et al., 2019). Furthermore, this study was also characterized by an inductive approach, which is linked to interpretivism (Gray, 2016) and elaborated on below.

There are two main approaches to describe the relationship between theory and research - inductive and deductive. This study held an inductive approach, meaning that observations and findings from the interviews contributed to discussion and further research on the theory that prompted this study. In contrast, a deductive approach entails a different approach where hypotheses are used. Since hypotheses were not used in this study, and a deductive approach is more commonly associated

with quantitative research, an inductive approach was considered to depict this qualitative study better. Furthermore, an inductive approach is also further motivated by using a case study in this research since they are commonly connected. (Bell et al., 2019)

### 3.1.2 Selection of respondents and unit of analysis

Units of analysis reflect what is being analyzed in a case study. The unit of analysis for this case study were the banks studied - since these are the aspects that the study focuses on and wants to conclude at the end of the study (Bell et., 2019). The banks were analyzed to learn how they are trying to address the wicked problem of biodiversity loss, and the reasons for their efforts.

The selection of respondents within these banks was made from a Purposive sampling strategy and a Convenient sampling strategy. Purposive sampling is the intentional selection of respondents based on their attributes (Bell et al., 2019). The researchers determine what data is required for the study and locate respondents who can participate based on their expertise or experience (ibid.). While this technique is convenient and timesaving, it is subjective and decreases the generalizability (Taherdoost, 2016). In this study, experts that have knowledge and experience in the sustainability strategy between their bank and biodiversity loss were targeted. These experts were considered useful respondents since they could answer the research question, with the presumption that these experts were most likely to provide the most elaborated answers. It is important to remember that these experts did not represent themselves in this study but rather the banks in which they operate.

A convenient sampling strategy was chosen to find respondents willing to participate since the number of experts in biodiversity in the banking sector is considered low - mainly because only a few actors in the banking sector have started to manage biodiversity loss (UNEP FI, 2020). The convenient sampling strategy is considered advantageous when it is difficult to find respondents (Bell et al., 2019), and when a study is smaller in size with a limited amount of time and money (Denscombe, 2014). Because of the difficulties of finding respondents, the authors selected respondents mainly by asking people from their personal network if they knew anyone that works with biodiversity and sustainability in the banking sector.

## 3.2 Literature review

A literature review is essential to conduct in a study to explore previous research and what is already acknowledged in the relevance of the scope of the study (Bell et al., 2019). Reviewing existing literature is critical for gaining accuracy in

constructing the aim and research question, as well as completing an accurate and suitable method (ibid.).

At the beginning of this study, a literature review was completed to comprehend concepts and definitions and to identify gaps in existing academic research. Several databases were used, primarily Primo (SLU's online library) and Google Scholar, to gather information on themes relevant to the scope of this study - e.g., governance, sustainability, Agenda 2030, biodiversity, sustainable finance, and sustainable banking. Different keywords were used separately and in combination to find relevant and applicable information, e.g., "Sustainability", "Governance", "Agenda 2030", "SDG", "Biodiversity", "Sustainable finance", "Sustainable banking", "Stakeholder theory" and "Stakeholder engagement". Recent research was prioritized to ensure relevant and current information. In addition to the databases, information was also gathered from other journals, books, websites, and reports - all available on the internet.

## 3.3 Semi-structured interviews

Interviews were chosen in this study since they can provide a rich source of information regarding e.g., opinions, practices, and strategies - which this study aimed to explore in terms of managing biodiversity loss. Interviews were also chosen to collect empirical data because it is a favorable approach in case studies, compared to e.g., surveys that do not provide the desired depth needed in qualitative research. The interviews helped conduct an intensive and thorough investigation of the chosen case example. Furthermore, interviews were also preferred since they can help the researcher better understand the unit of analysis with open-ended and flexible questions, compared to a quantitative approach which does not have the same approach or benefits. (Bell et al., 2019)

Interviews were conducted with representatives from banks that manage biodiversity loss. Semi-structured interviews were chosen since they are considered flexible (Bell et al., 2019), and during the interviews, the banks' representatives were allowed to share their own experiences of current practices to manage biodiversity loss. Semi-structured interviews include a prepared set of questions but allow the interviewer to elude the guide if necessary and follow the flow of the interview (ibid.). This chosen method also allows the interviewer to catch each interviewee's point of view of what is relevant to the subject (ibid.) - which was considered favorable since banks might use different practices when dealing with sustainability issues. If a completely structured interview had been chosen, the flexibility would have been lost, and in turn risk of missing relevant and individual insights (ibid.).

The semi-structured interviews were completed with the software application Zoom, which allowed online interviews with the characteristics of face-to-face

interviews. This was advantageous because it saved time and money as the researchers did not have to travel to the respondents. Nevertheless, Bell et al. (2019) notes several limitations with using a software application for interviews, e.g. technological problems with bad connection or quality of the recording. There is also a limitation with the need to transcribe the recordings of the interviews - something that is not needed if online text-based interviews were chosen (ibid.). While the former limitation, the technological problems, were eluded, the transcribing needed to be done. Even if transcribing was time-consuming, it was considered more advantageous to gain the benefits of online interviews where the participants can observe each other, than to avoid transcribing. Both verbal and non-verbal cues could therefore be noticed.

## 3.4 Collection of secondary data

Beyond semi-structured interviews, the study also collected secondary data for the empirical background. A qualitative method is used to depict something (Bell et al., 2019), and in this study, secondary data was collected from reports, articles, previous research, and websites to describe current practices and strategies in the financial industry when it comes to managing biodiversity loss. Specifically, the gathered information focused on global biodiversity frameworks, initiatives and KPIs relevant to the banking sector. The secondary data was presented in the empirical background and was discussed and analysed in accordance with the aim of this study.

When gathering secondary data, it is important to be aware that information retrieved from companies' websites might be incorrect - since companies might distort information to be more advantageous for them. This was considered when gathering information from foremost websites, which could enhance the credibility and dependability of the study (Bell et al., 2019). Secondary data was also gathered selectively so the used information was relevant and applicable.

## 3.5 Operationalization

When conducting an operationalization, abstract concepts and theories are turned into measurable questions and observations (Bell et al., 2019). The conceptual framework in figure 1 was operationalized into questions to enable the semi-structured interviews. The premade interview guide (Appendix B) was divided into five sections. The first three sections aimed at capturing how banks manage the wicked problems of biodiversity loss in terms of understanding the issue, defining priorities, and integrating these priorities into their daily business operations. The fourth section in the interview guide aimed at investigating how the banks engage

stakeholders when managing biodiversity loss. The operationalization of the first four sections is further motivated below. The fifth section was used to round up and end the interviews and is presented in Appendix B.

The first step of the interview guide, understanding wicked problems, was included since a good understanding of sustainability issues, i.e., biodiversity loss, can enhance business practices and positively affect sustainable development (Bateh et al., 2013). This first section was translated into two main interview questions and one follow-up question. These questions focused on how the banks understand the subject of biodiversity loss as an example of a wicked problem, and what possibilities and challenges it entails (see Appendix B).

The second section of the interviews involved how the banks define priorities, in accordance with the conceptual framework. Section 2 included one main question and one follow-up question (see Appendix B) that focused on investigating the banks' priorities in terms of managing biodiversity loss. Section 3 in the interview guide had one question to capture how the banks integrate their efforts in managing biodiversity loss into daily business practices (see Appendix B).

Section four in the interview guide had a focus on stakeholders. Stakeholder engagement has been pointed out as vital when managing wicked problems (Dentoni et al., 2012) and biodiversity loss (Boiral & Heras-Saizarbitoria, 2017; Sterling et al., 2017). To investigate how Swedish banks manage biodiversity loss together with their stakeholders, the question *How are stakeholders engaged in each step of the process of managing biodiversity loss?* was asked. "...in each step" refers to sections one to three in the interview guide and was clarified in the interviews.

## 3.6 Data analysis

Data in qualitative research that is extracted from interviews tend to be unstructured and difficult to analyze (Bell et al., 2019). To solve this problem and enhance the quality of the data analysis, content analysis was used - a process where the researcher can move back and forth between the literature review, conceptualization, collecting data, and conducting the data analysis and discussion (ibid.). A content analysis was used in this study and contained three steps; preparation, organization, and reporting information (Elo et al., 2014).

In this study, preparation consisted of conducting an extensive literature review to create the research aim and question, as well as determine the respondents and unit of analysis, before undergoing the data collection. By completing the preparation stage, the conceptual framework and research design could be amended and improved. Thereafter, the organization stage was conducted by performing a thematic coding, which Bell et al. (2019) have pointed out as a suitable approach to qualitative data analysis. Coding is the heart of content analysis and can make

unstructured data more structured and comprehensible (Bell et al., 2019). However, there is a critique of coding, where the context of what was said can be lost (ibid.). To minimize this risk and use two perspectives, both researchers were included in every interview, presented the data together and conducted the analysis and discussion together.

In thematic coding, the data collected from interviews are labeled and coded to find recurrent themes and patterns (Bell et al., 2019). Coding is especially important when conducting semi-structured interviews since answers might not align with the prepared questions (ibid.). The chosen process of thematic coding can involve the initial categorization of themes, so researchers know what to look for when analyzing the data, alongside the possibility of altering these initial themes after the data analysis is completed (ibid.). This study used initial themes that were based on the conceptual framework in figure 1, i.e. answers that could have been connected to understanding wicked problems (biodiversity loss), defining priorities, integrating and stakeholder engagement. These initial themes were relevant and remained in the final coding scheme. In addition, a fifth final theme of wicked problem was added - since all respondents talked about biodiversity loss as a complex issue. The final themes that were used are illustrated in Appendix D. Lastly, the third step of the content analysis included reporting information, where the empirical findings were connected back to the literature review and existing theories.

## 3.7 Quality criteria

When conducting business research, it is important to assess the quality of the research through different criteria (Bell et al., 2019). Two commonly used criteria are reliability and validity (ibid.). The relevance of using these two criteria in qualitative research has been questioned since they are considered more applicable for quantitative research where measurements are central parts of the study (ibid.). Since measuring is not as prominent in qualitative research, where gaining a deeper understanding of words is more focal, alternative, more suitable criteria for evaluation have been proposed (Guba & Lincoln, 1994), which were used in this study.

One alternative criterion for evaluating qualitative research is *trustworthiness* (Guba & Lincoln, 1994). Trustworthiness comprises four sub-criteria, which are the qualitative equivalents of reliability and validity: *Credibility*, *transferability*, *dependability,* and *confirmability* (ibid.). Confirmability is not elaborated on in this section, instead, a discussion was made on the subjectiveness of the study under

section *4.8 Criticism of the chosen method*, which could be argued to parallel with confirmability (objectivity). The other three sub-criteria are discussed below.

### 3.7.1 Credibility

Credibility refers to the degree to which the result obtained reflects the reality in the population being researched, and if the findings are believable (Bell et al., 2019). To ensure credibility in this study, the research questions, findings, and discussion was linked to existing literature and research - something Bell et al. (2019) noted as important. The credibility also became stronger since the interviewees had previous experience in the field of study (ibid.) - i.e., the interviewees have worked previously with managing biodiversity loss.

The credibility of a study can become stronger when the research takes place over a period of time, strengthening the cause-and-effect relationship (Bell et al., 2019). From this point of view, credibility in this study was considered hampered since the interviews were used to analyze how to manage biodiversity loss at a given time. Biodiversity loss is defined as a wicked problem, an issue without immediate and ultimate solutions (Sharman & Mlambo, 2012), which changes over time (Rodriguez et al., 2007). For this reason, credibility was considered hard to achieve when the study had to be conducted for a limited period of time.

### 3.7.2 Transferability

The concept of transferability refers to the degree to which findings can be generalized or to what degree the findings apply to other contexts (Bell et al., 2019). Transferability is relevant when sampling groups are relatively small, and often specified to their contextual uniqueness (ibid.). This study used a single case study where the aim was to generalize knowledge about how Swedish banks effectively manage the problem of biodiversity loss. Since the study had a small sampling group of four banks – the transferability was considered hampered. The authors had difficulties finding respondents, which made them ask their personal network if they knew people who work with biodiversity and sustainability in the banking industry. The case study was conducted in a very narrow context and area in the sustainability arena, resulting in a low number of respondents, which thus decreased the transferability.

The transferability was also hard to achieve because the study focused on how Swedish banks manage biodiversity loss. The aim and interviews had a Swedish context, where the purpose was not to apply the findings to other countries. This also became evident in the interviews, since two respondents mentioned that activities for reducing biodiversity loss in Sweden are likely not applicable to other countries with different geographical locations or climates. Even if the scope of this study contained Agenda 2030 and presentation of other global frameworks,

initiatives and KPIs, the transferability to other countries was still not considered achieved - since the banks interviewed used global frameworks in a national and sectoral context that is bound to Sweden.
The Swedish financial industry includes several different sectors, where all have the overall purpose of creating an efficient, sustainable and dependable financial system - i.e. it is not only the banking sector that assists the Swedish economy to function and grow sustainably (Swedish Bankers' Association, 2020a). Because of this similarity between sectors in the Swedish financial industry, the findings in this study on how to manage wicked problems on a local level were considered applicable both within the banking sector and to other financial sectors. In addition, since the answers from the respondents were often of relatively general nature and not linked to biodiversity specifically, this study's transferability was considered to be achieved to other industries as well. Wicked problems are generally apparent in multiple industries as well as the concepts of multilevel governance and stakeholder engagement. Rather than findings being applicable only to the financial industry or organizations dealing with biodiversity loss related issues, this study's findings are seen relevant to individual organizations dealing with wicked problems despite their industry belonging.

### 3.7.3 Dependability

Dependability focuses on the possibility of replicating the study (Bell et al., 2019). The concept is similar to transferability, but rather than replicating social settings, dependability focuses more on applying the findings to other times, i.e., another period in time (ibid.). This study partly failed to achieve dependability because the interview findings represented the banks' work to manage biodiversity loss at a given moment and not in the future. Even if parts of the interviews talked about the strategy to manage biodiversity loss, i.e., from a long-term perspective, future actions were not considered a unit of analysis. Furthermore, biodiversity loss is seen as a wicked problem in which solutions and characteristics change over time (Eastwood et al., 2020), alongside global frameworks, initiatives and KPIs that are constantly being renewed or developed. Therefore, the findings were not considered feasible to apply to other times, and the dependability was therefore hampered.
The study's dependability was further obstructed due to the anonymity of the interviewees. The anonymity made the study harder to replicate when not all information was available (Bell et al., 2019). Nevertheless, interviewees might have felt more prone to answer honestly, which enhanced the accuracy and quality of the study (ibid.). Therefore, respecting, and upholding anonymity was considered more important than ensuring dependability.

## 3.8 Ethical considerations

When conducting business research, there are four common ethical principles to consider, avoidance of harm, informed consent, privacy, and deception. (Bell et al., 2019). These four are vital to integrate throughout the research process rather than treating them as a side project. This study put efforts into avoiding harm to participants by keeping the recorded interviews confidential and maintaining the anonymity of the respondents and the bank they represented - which is in line with what Bell et al. (2019) emphasize as necessary. All interviewees were kept anonymous, which was ensured both before and after the study was published by not making the individuals or the banks identifiable and signing confidentiality agreements with the banks who desired it.

Informed consent means that the participants "...are given as much information as possible about a study to be able to make an informed decision about whether or not they wish to participate." (Bell et al., 2019). This study ensured informed consent and avoided coercion by providing adequate, understandable and written information to the respondents when first contact was initiated - which is in line with research made by Bell et al. (2019). The respondents then made a free decision to participate. Upon the interviews were conducted, the participants were also asked to consent to a recording device during the interviews, to ensure ethical handling.

The ethical principle of privacy includes protecting respondents' privacy and data management (Bell et al., 2019). This study is not considered to investigate a sensitive subject for the respondents themselves, which is why privacy in this study was considered by only asking the respondents work-related questions that could be connected to the bank's performance and not the individual's performance. Data management includes storing and handling data, which is relevant in this study through GDPR (ibid.). Legislation covering data protection was followed and upheld, to ensure legal and ethical handling of data collected through the interviews. Furthermore, the fourth principle, preventing deception, was upheld by presenting the study truthfully during the interviews with the respondents.

## 3.9 Criticism of the chosen method

This study conducted a case study through a qualitative approach, and one common problem with both is the high degree of subjectiveness (Bell et al., 2019). The critique of subjectiveness typically implies that qualitative data depend on the researcher's judgments and preferences of what is relevant and essential information to gather or analyze, as well as the researcher's personal ties with the respondents (ibid.). The latter was avoided completely in this study since there were no personal connections between the interviewers and respondents. Nevertheless, the subjectiveness was enhanced by the study's epistemological position of

interpretivist, which leaves room for subjectivity when the respondents' understanding of social reality (i.e., reducing biodiversity loss) is being interpreted by the researchers (Bell et al., 2019). However, even if objectivity was trying to be achieved in this study, subjectivity is not considered negative according to interpretivism, when the goal is to provide a deeper understanding of the unit of analysis (ibid.) - which is the case of this study.

There is further critique regarding the risk of subjectiveness with the respondents. In this study, the respondents represented one bank each, and it is likely they presented their bank's efforts to manage biodiversity loss as successfully as possible. However, this particular risk of subjectiveness was reduced by having anonymous interviewees - which can enhance the truthfulness and objectivity of the interviews (Bell et al., 2019).

This study chose semi-structured interviews as a method of collecting data. The respondents in the interviews were all Swedish, and to capture the benefits of the respondents feeling most comfortable when talking in their mother tongue, the interviews were held in Swedish. The data from the interviews was therefore translated into English, the language this study is written in, and there is a critique presented towards translating interview data. There could have been linguistic problems when translating, which is when the respondents use words that have no counterpart in English or it is difficult to translate grammatically (Bell et al., 2019). Translation thus depends on the translator's existing knowledge, in this case, the interviewers', as well as social background and personal experience (ibid.). To avoid linguistic misunderstandings in this study, both authors completed the interviews together and reviewed the transcribing and translation together.

Lastly, the subject of biodiversity is usually a case for research in natural sciences. The authors of this study are themselves business students, conducting a business study - meaning they are new to the subject with no previous experience or knowledge in biodiversity. Lacking previous knowledge in biodiversity, has required significant research from the authors which in turn has required significant amounts of time and resources. Thus, this has limited the efforts in conducting more interviews which could have increased the study's quality and transferability.

# 4. Empirical data

*The chapter on empirical data is divided into two main sections. First (4.1), empirical background which presents current and global framework, initiatives and KPIs that can be used by the financial industry when managing biodiversity loss. The second section (4.2) presents the interview findings from the four semi-structured interviews.*

## 4.1 Empirical background

The importance of biodiversity globally has been apparent for several decades (UN, n.d.2), and when an increase in global attention towards biodiversity loss happened, several global goals (CBD, 2020b) and international legal instruments (UN, n.d.3) have been put in place to solve biodiversity loss. Today, there also exist several regional and global solutions that are relevant for the financial industry specifically, e.g., Principles for Responsible Banking (UNEP FI, n.d.), the EU taxonomy (European Commission, n.d.), and Finance for Biodiversity Pledge (Finance for Biodiversity Pledge, 2022a). While several more global frameworks and policies exist, these three are considered relevant to explore in this study since they affect financial actors and are commonly used in the financial industry (European Commission, n.d.; Griffiths, 2021; Finance for Biodiversity Pledge, 2022b; UNEP FI, 2019).

### 4.1.1 Principles for Responsible Banking

Principles for Responsible Banking (hereafter PRB) is a global framework with the aim to improve banks' sustainability strategies and align them with the SDGs and the Paris Climate Agreement (UNEP FI, n.d.). PRB functions both as a framework and network, in which over 270 banks have joined - which is equivalent to over 45% of banking assets globally (ibid.). The framework, which has been named relevant for accelerating banks' sustainability strategy and collaboration with stakeholders (Griffiths, 2021), includes six principles that banks need to adopt throughout their organization (see Appendix C for a description of the principles).

Furthermore, PRB has highlighted the issue of biodiversity loss and the importance of financial institutions' contributions to the matter (UNEP FI, 2020).
There are several opportunities and obligations for a bank when signing PRB. The opportunities include improved contribution to Agenda 2030, enhanced transparency, improved stakeholder engagement, and refined risk management (Griffiths, 2021; UNEP FI, 2019). There is also a possibility for banks to improve the sustainability agenda throughout the entire financial industry - a possibility to assist, guide and inspire peers, competitors, and other financial actors, not just within the banking sector (UNEP FI, 2019). However, signing PRB also requires additional resources - e.g., time, money, and data (ibid.). There is also a time limit on when the six principles should be implemented. Banks that sign PRB need to report their progress after 18 months, and completely implement the principles within four years (UNEP FI, n.d.).

### 4.1.2 The EU taxonomy

The EU taxonomy classifies sustainable economic activities (European Commission, n.d.), and is divided into six objectives that seek to help actors improve their environmental performance: (1) Climate change mitigation, (2) Climate change adaptation, (3) Sustainable use and protection of water and marine resources, (4) Transition to a circular economy, (5) Pollution prevention and control and (6) Protection and restoration of biodiversity and ecosystems (ibid.). The first two objectives entered into force in January 2022, and the remaining four must be applied by actors in 2023 (ibid.). The EU taxonomy is applied when evaluating financial products, such as e.g., funds and bonds or other investments, to determine if a product or investment is considered sustainable. For a financial product or investment to be considered sustainable it must live up to three criteria - (1) make a substantive contribution to one of the six environmental objectives above, (2) do no significant harm to any of the remaining objectives and (3) meet minimum sustainability safeguards (ibid.).
Three groups are obliged to disclose their activities according to the taxonomy; companies that fall under the non-financial reporting directive, financial market participants that operate within the EU, and EU and its member states (UNEP FI, 2021). All groups can gain several advantages when measuring and disclosing according to the EU taxonomy - e.g., increased transparency and legitimacy, becoming more climate-friendly, and the possibility to avoid greenwashing (European Commission, n.d.).
In addition to the benefits, the EU taxonomy also poses certain challenges for banks when measuring their impact on the sixth objective - “The protection and restoration of biodiversity and ecosystems” (UNEP FI, 2021). Biodiversity loss as a taxonomy objective is considered complex since there is not enough reliable data on the issue, and how to reduce it (ibid.). This hampers the quality, comparability,

and relevance of banks' reduction of biodiversity loss, and requires sector expertise to solve the problem (ibid.).

### 4.1.3 Finance for Biodiversity Pledge

Finance for Biodiversity Pledge is an initiative from the financial sector that seeks to protect and restore biodiversity (Finance for Biodiversity Pledge, 2022a). Financial institutions can sign this pledge for free (Finance for Biodiversity Pledge, n.d.), and help manage biodiversity loss through financing and investments in addition to contributing to Agenda 2030 (Finance for Biodiversity Pledge, 2022a). By signing, members commit to undergoing five steps; (1) Collaborating and sharing knowledge, (2) Engaging with companies to reduce a negative impact on biodiversity, (3) Assessing the impact of financing and investments, (4) Setting targets based on the best available science and (5) Reporting publicly on the previous steps before 2025 (ibid.). The pledge emphasizes the importance of collaboration, engaging stakeholders, assessing impacts through KPIs and connecting the efforts to the Post-2020 Global Biodiversity Framework (ibid.). When comparing different initiatives and policies, the Finance for Biodiversity Pledge is one initiative that is considered suitable for banks specifically to join (CBD et al., 2021).

### 4.1.4 Key Performance Indicators

Swedish banks need concrete guidance on how to measure its impact and manage biodiversity loss (Mistra, 2021). It exists over 100 potential key performance indicators (KPIs) for evaluating biodiversity (Dasgupta, 2021), and six of these have been pointed out as relevant to the financial industry (Finance for Biodiversity Pledge, 2021); (1) Corporate Biodiversity Footprint (CBF), (2) Biodiversity Footprint Financial Institutions (BFFI), (3) Species Threat Abatement and Restoration (STAR), (4) Global Biodiversity Score for Financial Institutions (GBSFI), (5) Biodiversity Impact Analytics (BIA) and (6) Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE). These KPIs are assessed on a maturity level, where “the maturity level of a tool is based on its application frequency for specific finance contexts.” (ibid.). A KPI is considered mature if it has been used three or more times in an organizational focus area, business/finance application or asset class (ibid.). All the KPIs mentioned are still being developed (ibid.).

Three of the six KPIs mentioned are considered relevant to explore in this study; CBF, BFFI and STAR. CBF and BFFI are elaborated on since they are the most mature KPIs, and STAR is elaborated on since it can explicitly be connected to Agenda 2030 (Finance for Biodiversity Pledge, 2021) - which is in line with the scope of this study. All three have also been highlighted as relevant by Finance for

Biodiversity Pledge (2020) for assessing the impact of finance on biodiversity, and thus considered relevant to elaborate on. They are described in table 3.

*Table 3. Description of three KPIs (Finance for Biodiversity Pledge, 2021)*

| KPI | Description |
|---|---|
| CBF | CBF evaluates the yearly effect of financial institutions on biodiversity, i.e., biodiversity footprint. CBF can be used to optimize investing and consider the effect on biodiversity when making capital allocation decisions. CBF is the most mature KPI and is available for industries with the highest impact. It is still being developed for industries with a lower direct impact. |
| BFFI | BFFI offers a biodiversity footprint of economic activities. The approach may be used to calculate the biodiversity effect of investments on different levels, e.g., at the portfolio, company, or project level. BFFI is based on scientific information and is relatively mature. It can be difficult to use BFFI without the help of an expert - pre-knowledge about metrics and biodiversity is required. |
| STAR | STAR is holistic and assesses the impact that investments can have on lowering the risk of biodiversity loss and is useful for the financial industry when they want to focus investments on specific goals for biodiversity loss. STAR is also advantageous for financial actors who work with Agenda 2030, since STAR can help assess the investments' impacts on the SDGs. However, STAR is lacking in maturity. |

## 4.2 Interview findings

*The interview findings are presented in this section. The outline is based on the coding scheme in Appendix D and divided into five sections: (4.2.1) Understanding biodiversity loss, (4.2.2) Defining priorities, (4.2.3) Integrating, (4.2.4) Stakeholder engagement and (4.2.5) Wicked problem. The respondents from the interviews are referred to as Bank A, Bank B, Bank C and Bank D - since the units of analysis are the banks and not the individuals interviewed.*

### 4.2.1 Understanding biodiversity loss

The first part of the interviews concerns understanding the issue of biodiversity loss, as pointed out in Appendix B. When the banks talk about how they understand

biodiversity loss, it also leads to possibilities and challenges. The interview findings from these parts are presented below.

*How the banks understand biodiversity loss*

Regarding understanding biodiversity loss, neither of the banks can provide a definition of their own for biodiversity loss nor cite a specific definition from elsewhere. Instead, all banks refer to external definitions and knowledge, derived from global organizations or frameworks in the field of biodiversity loss. They mention definitions provided by CBD and Agenda 2030. Banks C and D also find Agenda 2030 useful for guidance and inspiration. Furthermore, banks A and D refer to definitions from current biodiversity research and research institutes, but do not specify a specific source.

When investigating how the banks obtain knowledge about biodiversity loss, the banks use similar approaches. All banks use both internal and external resources to obtain knowledge, where the internal resources derive from workshops or internal education, held by the sustainability manager or an external biodiversity expert. However, all banks obtain knowledge from external sources more often than from internal sources.

The banks use different global frameworks and initiatives to better understand biodiversity loss. All banks somewhat work according to the EU taxonomy, PRB and Agenda 2030. Furthermore, bank D also considers Post-2020 Global Biodiversity Framework and Finance for Biodiversity Pledge as relevant for understanding biodiversity loss - and the latter is something banks A and B agree with. Lastly, bank C also uses external education and certifications to obtain specific sustainability knowledge among the employees.

> Other banks have sustainability educations or certificates we use or purchase. All the bank's employees, mainly managers, business advisers and the sustainability group complete external training and certifications that focus on banking and biodiversity - bank C

*Possibilities to gain from managing biodiversity loss*

By focusing on reducing biodiversity loss, all banks think it will entail possibilities for their operation. All banks see the possibility of increased collaboration when reducing biodiversity loss - within the banking sector or other industries. All banks also consider risk management to be improved when understanding biodiversity loss. Mapping risks will be easier, and the sustainability risk will decrease according to the banks. Bank B believes that improving risk management will help them to build stronger relations with their customers, e.g., private and corporate customers, and in turn, assist the customers to reduce biodiversity loss. This will, in turn, improve the bank's indirect effect on biodiversity loss. Furthermore, in addition to improved risk management, banks C and D see it as a possibility to join

more global initiatives and accelerate their overall sustainability agenda by managing biodiversity loss.

> If we try to manage biodiversity loss, we can join more global initiatives, which we believe can accelerate our entire sustainability strategy. Biodiversity is linked to all areas of sustainability, which means that the more initiatives we are involved in - the more knowledge and inspiration we can gain - bank D

*Challenges when managing biodiversity loss*

All banks consider there to be more challenges for them than possibilities by reducing biodiversity loss. The first challenge banks B, C and D emphasize is to ensure the correct knowledge and that the efforts to manage biodiversity loss are adequate. Bank B and C express the lack of desired resources to manage biodiversity loss, which limits them in their daily operation. Furthermore, bank B also expresses a challenge in the lack of reporting on biodiversity from their customers - which limits them in their daily operation to manage biodiversity loss. The uncertainty in knowledge and number of resources goes hand in hand with an increasing number of regulations, initiatives, and risks. While the banks consider risk management to be improved by reducing biodiversity loss, and joining more initiatives is positive, banks B, C and D also see it as a challenge since the risks, regulations and initiatives increase in number when managing an additional sustainability issue. They do not have enough resources to manage all additional risks, regulation updates and new initiatives as they wish. Bank B tries to handle this challenge by prioritizing the global frameworks and initiatives that can help them manage the most pressing tasks. Bank A also sees multiple global frameworks and initiatives as challenging and refers to them as being too costly to join - e.g., PRB.

> The more sustainability issues we try to manage, the more risks and regulations are added to our workload - bank B

The additional workload is something bank C agrees with, and while bank C tries to embrace these challenges, they are questioning banks' motives to manage biodiversity loss when there are an increasing number of challenges to it.

> Banks do not want to suffer financial losses. We do not think banks are extremely interested in biodiversity but instead care a lot about money and financial risks - bank C

### 4.2.2 Defining priorities

When it comes to how banks choose to define priorities when managing a wicked problem, i.e., biodiversity loss, banks A, C and D take a short-termed and more loose approach. Bank B has a rather linear and analytical strategy to define priorities. For bank B, it is key to have an internal self-made framework or guideline within the bank - in order to define priorities. From these internal frameworks and

guidelines, bank B will be able to understand how they want to approach the issue of biodiversity loss. Bank B then measures its baseline through customer measurements and reports to identify its risk exposure towards biodiversity loss. When an internal and self-made framework is established and a baseline is set, bank B can start to define priorities and set targets.

Bank A, C and D do not have the same structured and linear approach as bank B. Instead, the activity of defining priorities is integrated into the banks' overall sustainability strategy, where short-term solutions are dealt with and not limited to certain agendas - e.g., biodiversity loss. For bank A, there are no defined priorities concerning biodiversity loss since the issue falls into the general sustainability strategy. Instead, issues are managed as they arise and are prioritized depending on how urgent they are. For bank C, however, prioritizing is not based on urgency, but rather on current and relevant local initiatives.

> It is not seen as a priority; it is more like "where in our lending can we act quickly to promote biodiversity"? So, it's more of a purpose-driven or value-driven way of working - bank A

None of the banks are using any KPIs related to biodiversity loss. All banks believe that KPIs are important and preferable to use when it comes to sustainability issues, but at the moment they all feel that the banking sector is too immature for measuring and reporting on biodiversity loss. Instead, all banks are looking to receive guidance from global frameworks and initiatives - they mention PRB, Agenda 2030 and the EU taxonomy, and bank B also mentions Net Zero Banking Alliance (NZBA).

> We have no KPIs for biodiversity loss at the moment, at all. We noticed that it's not an easy task. Instead, one must observe every industry, and start with easy KPIs - bank B

All banks have also realized that their greatest impact on biodiversity is done indirectly through their customers, lending, and investment operations. According to the banks, having mostly indirect impacts adds complexity to defining priorities.

> Of course, our bank has a climate footprint. But 99% of our footprint is made up of what we invest and issue credits in. So, it will be a big risk for us, this is why we must ensure that our customers can deliver - bank B

### 4.2.3 Integrating

The banks have a mutual perception that integration throughout the organization is vital for effective management of biodiversity loss. Biodiversity loss is an issue central to bank A's sustainability strategy and organization, where they have strict criteria for suppliers, internal education specifically for biodiversity loss and include it in their code of ethics and sustainability policy. Bank A foremost tries to manage biodiversity loss through customers - specifically in the lending process. Additionally, in meetings with customers, bank A tries to inform and educate the customers, so they reduce biodiversity loss themselves.

Bank B, C and D are still figuring out how to understand biodiversity loss and which priorities to define. Nevertheless, they have started small with integration, e.g. all three include biodiversity loss in employees' general sustainability education, and bank B has a specific education on biodiversity for some employees.
All banks have the same overarching goal - to not treat biodiversity loss as a side project. Neither of the banks currently has a policy that is specific to biodiversity loss, but still emphasizes the goal of treating biodiversity loss as a central issue in the sustainability agenda. All banks try to achieve this through an assigned sustainability group, sustainability manager or external environmental policy where biodiversity loss is mentioned, but the integration will especially happen for all banks through the employees who engage with customers.

### 4.2.4 Stakeholder engagement

*Customers*

Engaging stakeholders when managing biodiversity loss is considered vital for all banks interviewed. A common denominator among the banks is that customers are seen as the number one stakeholder to involve - i.e., all banks think they can reduce biodiversity loss the most through engaging customers since this is the area where they can have the largest positive effect. The banks look to influence their customers by educating them on biodiversity and helping them make sustainable choices, for example. This is mostly done through the banks' lending process, where the banks can gain insight into projects within multiple industries and define priorities based on that insight. The reduction also happens by making an impact on customers' savings - that the customers place money in sustainable and biodiversity-friendly options.
Simultaneously, bank C sees challenges in engaging with customers. They struggle to find a balance between influencing customers to choose the most sustainable option, while obeying multiple regulations. Bank B agrees and thinks this will affect their organization.

> There will be more regulations on biodiversity, and at the same time we must ensure that customers are aware of new regulations. If customers do not obey the regulations, or make choices that are not in line with regulations, we will find it difficult to manage biodiversity loss - bank B

*Employees*

In addition to customers, all banks highlight employees as important stakeholders when reducing biodiversity loss - employees who engage with customers and are responsible for lending out money. The employees are considered important to increase awareness and knowledge on biodiversity loss among customers and steer the customers towards sustainable choices.

> We want customers to measure and report their own impact on biodiversity, in addition to following the bank's internal policies and guidelines - which employees become responsible for - bank B

The employees are also subject to education within all banks - of biodiversity loss specifically or sustainability in general. However, despite specific education, all banks consider it to be challenging to ensure the correct and sufficient knowledge among employees. The solution these banks use is to provide yearly education and use experts in biodiversity loss within the bank or from external stakeholders.

> Our employees are mostly economists - not biologists. So, biodiversity is a new area of expertise that did not exist before naturally, even if the issue is highly relevant for the financial industry. Therefore, there is a challenge for all employees to acquire knowledge of biodiversity loss - bank C

*Other stakeholders*

In addition to the stakeholders mentioned above, a few other stakeholders are also of importance for the banks when reducing biodiversity loss. The first one is other actors in the financial industry. Through the banks' sustainability strategies and initiatives, they have joined, all banks see the possibility of affecting more actors than just banks.

> When reducing biodiversity loss, we see beyond the banking sector. We are more actors involved than just banks. We want to affect the whole financial industry and draw inspiration and resources for ourselves as well. Either locally or through global frameworks and initiatives we follow - bank D

All banks also see beyond the financial industry and want to create change through several other industries in Sweden. Bank A thinks the construction industry is key to engage with and influence, since it is through this industry, they can reduce biodiversity loss the most. Banks B, C and D also see the possibility of affecting key industries to reduce biodiversity loss, but highlight the forestry industry, and agricultural industry as most important to affect - partly because they are more exposed to risks through these industries. Furthermore, Bank B also considers the mining industry as important to collaborate with when managing biodiversity loss. Lastly, by managing biodiversity loss, bank C sees the opportunity of increasing sustainable development in the local society and affecting its residents to contribute as well. They use part of their profit to promote sustainability and biodiversity loss in the local society they operate within, and often try to connect global goals, e.g., Agenda 2030, to their local efforts.

### 4.2.5 Biodiversity loss as a wicked problem

All banks agree that biodiversity loss is a wicked problem. They all think the issue is subjective and hard to measure, in addition to no single or standardized definition.

> A complex problem without a clear and single solution, which we need help from our stakeholders to solve - bank D

Bank A, B and D consider biodiversity loss to be a wicked problem because the issue changes over time, and the solution that is plausible today is probably not the best solution available in the future. They also think the issue can differ depending on the geographical location and climate.

That banks have different departments and operations enhances the complexity of reducing biodiversity loss, according to banks B, C and D. They state that they work with many different operations within the organization, such as private customers, corporate customers, lending, investments, and savings - and that the complexity enhances when having mostly an indirect effect on biodiversity loss. Therefore, they consider it difficult to bring biodiversity into all aspects of the organization. This is made more difficult when you do not have any internal expertise within the bank, according to banks C and D.

> The problem becomes more complex as banks have so many different areas you can influence through - banks as an organization rarely have a single definition - bank B

Bank C and D propose a solution to the challenge of no internal expertise, where external knowledge can fill the resource gap. They mention global frameworks and initiatives as a way of managing the complexity of biodiversity loss.

# 5. Analysis & Discussion

*The empirical data is analyzed and discussed in relation to the conceptual framework in this chapter. The analysis and discussion are based on the aim of the study and connected to the literature review. The subheadings under 5.1 in this chapter are based on the coding scheme, as in chapter 4, to clarify the connection between theory, data, and analysis. Lastly, a revised conceptual framework is discussed at the end of this chapter.*

## 5.1 How do Swedish banks manage the problem of biodiversity loss?

### 5.1.1 Understanding biodiversity loss

This study focused on how Swedish banks manage the wicked problem of biodiversity loss, as a way of understanding how individual organizations manage global wicked problems locally. To investigate this, the unit of analysis, the banks being studied, were researched along with the activities included in the conceptual framework on how to manage the wicked problem of biodiversity loss - this framework is depicted in figure 1. The first activity, understanding wicked problems, was considered essential to investigate, since Bateh et al. (2013) note that companies need a good understanding of sustainability issues to enhance their effect on sustainable development.

All banks interviewed are currently putting a significant amount of effort into understanding biodiversity loss but have not yet fully comprehended what it entails - which is in line with Mistras (2021) analysis of Swedish banks. Neither of the banks has their own definition of biodiversity loss - they all draw inspiration from either researcher, research institutes, Agenda 2030, or CBD, which they also refer to for an official definition. Gaining knowledge from official resources is a way of becoming familiar with the issue according to the SDG compass (GRI et al., 2016), and can help a company manage a sustainability issue (i.e., biodiversity loss) while aiding sustainable development (Bateh et al., 2013).

All interviewed banks use internal and external resources to better understand biodiversity loss, e.g., employees, external experts, certification, education, etc. External resources are used more often, and external education, experts, global frameworks, and initiatives are helpful. All banks operate according to the EU taxonomy, PRB and Agenda 2030, which are relevant and applicable global frameworks for the financial industry when reducing biodiversity loss, according to European Commission (n.d.), Finance for Biodiversity Pledge (2022b) and UNEP FI (2019). The banks also consider Finance for Biodiversity Pledge to be of relevance when trying to understand biodiversity loss, which several global actors agree with, such as the European Commission, UNEP FI, and Principles for Responsible Investments (Finance for Biodiversity Pledge, 2022b). The interviewed banks are thus understanding biodiversity loss from relevant and current research and sources, which should guide individual organizations when dealing with wicked problems in general at a local level.

To manage a sustainability issue, organizations need to comprehend what possibilities it entails (GRI et al., 2016). The interviewed banks see possibilities for reducing biodiversity loss, but to a greater extent than understanding the meaning of the issue. The possibilities they see, such as improved stakeholder relations, improved risk management, keeping updated on new regulations, the possibility to join more initiatives and increased external collaboration, can therefore be a result of previous experience in managing wicked problems of sustainability issues, rather than the significant experience of reducing biodiversity loss specifically. The possibilities mentioned above can be connected to different sustainability issues, and thus inspire other companies on how to manage wicked problems and seize the possibilities it entails.

The possibilities mentioned are somewhat in line with the advantages mentioned in the SDG Compass (GRI et al., 2016). Even if the banks focus considerably on following global frameworks and initiatives, the banks do not mention the possibilities of using similar terminology as other actors, or motivation for employees when working towards e.g., Agenda 2030, which research considers possibilities too (Business & Sustainable Development Commission, 2017). Furthermore, it is only one bank that highlights financial benefits when reducing biodiversity loss within Agenda 2030, which research also sees as an essential opportunity (ibid.).

While the interviewed banks are currently trying to understand the issue of biodiversity loss, they demonstrate a broader understanding of the challenges the issue entails. Similar to the possibilities, some of the challenges mentioned are also of general nature. The banks see challenges with an increasing number of risks, having no proper KPIs to guide them, and too many regulations that are constantly changing - the last two are in line with IPBES (2019). However, the banks do not see the lack of economic incentives as a challenge nor a lack of supporting global

frameworks, which IPBES (2019) also highlights. The banks are instead driven by financial benefits and consider there to be plenty of global frameworks and initiatives to use - sometimes even too many. There is a general nature of the challenges mentioned and thus a way forward in managing different wicked problems (Bateh et al., 2013). The knowledge of these challenges can therefore guide individual organizations on what issues to face when managing wicked problems. However, the interview findings cannot guide organizations completely on how to overcome these challenges. One bank highlights the importance of prioritizing global frameworks and initiatives that are applicable and relevant right now, and which they have enough resources for - which could work as a solution for individual organizations when facing the above-mentioned challenges.

Three challenges mentioned in the interviews are connected to biodiversity loss specifically - including biodiversity in investments, the problem of gaining accurate knowledge and lack of reporting from the customers. The challenge to include biodiversity in investments is in line with research made by Fair Finance Guide (2020). Regarding the second, gaining accurate knowledge, all banks are new to the subject which hinder proper knowledge seeking. One bank considers its employees as economists, and not biologists - which is why gaining knowledge on biodiversity loss does not come naturally for their bank. The difficulty of gaining proper knowledge on biodiversity loss in the business spectrum is mentioned by Pascual et al. (2021), and thus lines up with the interviews. The third challenge, i.e. lack of reporting from customers, does not line up with any previous research specifically, but rather demonstrates the importance of customer engagement. Lastly, Mistra (2021) points out challenges of including biodiversity loss in e.g. financial decision-making, benchmarking and monitoring - which are not highlighted as current challenges in the interviews.

### 5.1.2 Defining priorities

Defining priorities is essential to achieve an effective impact on sustainable development (Longoni & Cagliano, 2015; Vila et al., 2021). Even though all interviewed banks are aware of the importance of defining priorities, they all fall short in terms of what is required by the global biodiversity frameworks and initiatives mentioned in this study. When asked how they define priorities, answers vary in terms of concrete measures taken. The general feeling of biodiversity loss being an under-prioritized issue for the banks is uniform, and thus in line with research made by Ecogain (2021) and KPMG (2020). The reason why biodiversity loss is not seen as a priority among banks is assumed to be that the issue has not gathered enough attention in the global political arena. While well-known initiatives have focused more on climate change and sustainability in general, little room has been given to the issue of biodiversity loss until recently, as the effects have been showcased in recent reports (IPCC, 2022).

The activity of defining priorities to manage biodiversity loss is mostly incorporated into the general sustainability agenda with no KPIs related to biodiversity loss, even though it is considered favorable by all banks to have. Only one bank seems to have a clear strategy for how to approach the task of defining priorities. However, this approach seems to be the general option in every sustainability issue and not specifically for the management of biodiversity loss.
Setting targets and measuring KPIs is a big part of the recommendations coming from the SDG Compass (GRI et al., 2016) and global initiatives such as PRB and Finance for Biodiversity Pledge. Since several of the banks are looking for guidance from global frameworks and initiatives, they are also dedicating themselves to setting KPIs and targets. However, measuring according to KPIs and setting targets is not something the banks are currently doing.
Since there exist around 100 potential KPIs for measuring an effect on biodiversity (Dasgupta, 2021), it is hard to claim that there is a shortage of measurement guidance, which IPBES (2019), Mistra (2021) and Statistics Sweden (2017) point out. However, only six of these KPIs are relevant for the financial industry (Finance for Biodiversity Pledge, 2021). This study presented three of these six KPIs: CBF, BFFI and STAR (ibid.).
While these KPIs are specifically connected to biodiversity, the nature, and advantages of these KPIs can help analyze how individual organizations can manage wicked problems in general. For example, CBF highlights customer engagement and life cycle analysis as important, BFFI mentions the importance of expertise and STAR connects target setting with an organization's general sustainability strategy and contribution to Agenda 2030. These aspects can be applied to other wicked problems as well and points out the advantages of using KPIs. KPIs in general can thus be important tools and guidelines for individual organizations when dealing with global wicked problems on a local level.

### 5.1.3 Integrating

Integrating is the third activity in the conceptual framework in figure 1. While integration is considered essential for managing a sustainability issue (Longoni & Cagliano, 2015; Vila et al., 2021) or achieving an SDG (GRI et al., 2016), the interview findings do not indicate that it is a common practice among Swedish banks when managing an "immature" wicked problem. The banks consider integration vital to manage biodiversity loss, but it is not something they are currently doing to a great extent. Only one bank is currently integrating biodiversity loss in the core of the organization, e.g., in criteria for suppliers, conducting internal education specifically for biodiversity loss, and including it in the lending process. The other banks have not come as far but do provide education on the issue for employees - either separately or integrated into the overall sustainability education.

All banks are currently putting more effort, resources, time, and money into understanding biodiversity loss than integrating their priorities to manage the issue. Swedish banks have existing practices in place and perform average when it comes to reducing biodiversity loss (Fair Finance Guide, 2020), which can be explained that they have not fully apprehended the issue while already having existing practices put in place. To have a high performance when managing wicked problems, the integrating part needs to be stronger than what the Swedish banks demonstrate when reducing biodiversity loss - in addition to having accurate knowledge and clear priorities Education is essential when handling wicked problems according to the interview findings and GRI et al. (2016), in addition to creating separate sustainability policies and treating the wicked problem as a core issue in the sustainability strategy (ibid.). When this is achieved, an organization's ranking will likely be improved and the management of wicked problems more effective.

### 5.1.4 Stakeholder engagement

Stakeholder theory describes the importance of stakeholder engagement to achieve sustainable development (Hörish et al., 2014). For this study, the focus lies on how Swedish banks engage with their stakeholders to manage biodiversity loss. Stakeholder engagement is identified as a key concept to managing wicked problems (Boiral & Heras-Saizarbitoria, 2017; CDB, 2020; USAID, 2018), which the interviewed banks agree with when talking about biodiversity loss.

Two types of stakeholder relationships are especially important to the interviewed banks. Unlike the stakeholders suggested by Boiral and Heras-Saizarbitoria (2017), all banks see their customers and employees as critical stakeholders to achieve the goal of reducing biodiversity loss - which instead is in line with CBD (2020a). All the banks interviewed believe that the largest impact to reduce biodiversity loss is achieved via either the lending process or through investments. While there are mixed perceptions on how to engage customers when managing biodiversity loss, all banks agree on its importance. As for employees, the interviewed banks refer to employees with customer responsibility. Since customers are seen as such vital stakeholders, banks see it as highly crucial that the employees working closest to the customer are well educated on biodiversity loss - partly to gain vital information from the customer and partly to educate customers on how to affect biodiversity loss themselves. Individual organizations should therefore focus on customer engagement as the primary stakeholder when managing wicked problems.

Other than customers and employees, the banks believe that the financial industry must work together on the issue together with experts and NGOs, which correlates to Boiral and Heras-Saizarbitoria (2017) which suggests four main categories of stakeholders: NGOs, public authorities, experts, and coalitions of companies. Coalitions of companies are interpreted by the researchers of this study as global

initiatives, e.g., PRB and the Finance for Biodiversity Pledge, where members of the financial industry work together towards the same cause. Furthermore, the local society was mentioned by one bank as an important stakeholder to engage, which CBD (2020a) and Boiral and Heras-Saizarbitoria (2017) also consider as important. This way of reasoning falls in line with the ideas of MLG, as the banks have managed to identify responsibilities at different levels of governance, both vertically as well as horizontally.

All interviewed banks believe it to be crucial to target key industries that have a larger direct impact on biodiversity, something that is recommended by Finance for Biodiversity Pledge (2021). This is especially the case for organizations that mostly have an indirect effect on wicked problems. Other industries are thus seen as important stakeholders, but since the number of existing industries are vast, it is important to locate which stakeholders are relevant to engage - as it becomes more efficient in the long run (Capitals Coalition & Cambridge Conservation Initiative, 2020). One difficult aspect when engaging stakeholders is for organizations to determine which stakeholders to involve and to what extent (Boiral & Heras-Saizarbitoria, 2017). This is not the case in this study according to the researchers' interpretation, since all the banks have a clear understanding of which stakeholders, and industries specifically, they wish to involve and how far that duty extends.

USAID (2018) presents three approaches to successfully engaging stakeholders: informing, consulting and decision-making. The first two approaches are apparent in all interviewed banks. All banks state that they inform their customers about measures taken concerning biodiversity loss. As for consulting, all banks seek to consult from the initiatives of which they are members of or via experts or NGO's. The last approach, decision-making, is not as apparent as the former two - this may be due to the banks' lack of maturity in managing biodiversity loss. The decision-making approach could be a case for big-impact industries, since all banks see these stakeholders as key stakeholders to engage. This demonstrates that as organizations develop in their work to manage wicked problems, it is key to engage stakeholders throughout the decision-making process for a successful direct effect.

### 5.1.5 Biodiversity loss as a wicked problem

Biodiversity loss as a wicked problem was demonstrated in the conceptual framework in figure 1. All banks that were interviewed consider biodiversity loss to be a complex issue and thus a wicked problem, which is in line with previous research (Barnett et al., 2018: Blok et al., 2016; Eastwood et al., 2020; Sharman & Mlambo, 2012). In addition, three banks also consider the issue to be more complex since they operate as a bank. They state that it is difficult to bring biodiversity into all aspects of the organization. Two banks mention that it is because a bank has an indirect effect on biodiversity loss through lending, investments and customers' saving. This is in line with Ritchey (2013) and Maron et al. (2016) who talk about

wicked problems being amplified in the financial industry because of the difficulty to prioritize resources through an indirect effect.

Sharman and Mlambo (2012) present five characteristics of why biodiversity loss can be seen as a wicked problem. The first is that the concept of biodiversity loss is missing a definitive formulation (ibid.). This is in line with the perception of the interviewed banks, since they all lack their own way of defining biodiversity loss - instead, they refer to definitions set by other global organizations (e.g., CBD) and frameworks. However, the banks mention the complexity of the existence of multiple definitions and are not sure which one is most accurate to use. Therefore, the issue still stands since neither of the banks could cite or provide the interviewers with a definitive formulation, which is likely the case for other wicked problems too that have not yet received full attention in the global arena just as biodiversity loss.

The second characteristic of the wicked problem of biodiversity loss lies in the lack of immediate and ultimate solutions - with the emphasis on multiple and different global frameworks, which enhance the complexity of the problem (Sharman & Mlambo, 2012). The interviewed banks agree with the lack of immediate and ultimate solutions, and think the issue, and its solution, change over time and over geographical borders. This is in line with Rodriguez et al. (2007) who mention the issue's ability to change in time, space and scale. In addition, the banks do think the complexity is enhanced by the existence of too many global frameworks and initiatives. Simultaneously, two banks mention global frameworks and initiatives to be a way of managing the complexity of a wicked problem and solving the challenge of having too few resources and internal knowledge about the issue. Individual organizations could thus use external inspiration to fill the resource and knowledge gap, as a way of creating immediate and ultimate solutions on a local level.

While the third characteristic, no trial-and-error learning (Sharman & Mlambo, 2012), is not evident in the interview findings, the fourth and the fifth characteristics are apparent - no exhaustive list of potential methods and the disparity in what causes biodiversity loss (ibid.). The banks do not consider it to exist an exhaustive list of potential methods for halting biodiversity loss, and they also think the issue is subjective with different opinions on what is causing biodiversity loss. The latter is in line with Weymouth and Hartz-Karp (2018) who also emphasize the subjectiveness of wicked problems in general.

Barnett et al. (2018) state that knowledge needs to exist about the current conditions of biodiversity loss, as well as the desired future state of the issue and how an actor wishes to overcome it. The interviewed banks are currently focusing on understanding biodiversity loss with little defined priorities, while still having existing practices in place - in which they are already being assessed (Fair Finance Guide, 2020). The overall low ranking among the biggest banks in Sweden when

managing biodiversity loss (ibid.) can thus be explained by too little knowledge about the issue, and how they wish to overcome it. Individual organizations should, therefore, at least according to Barnett et al. (2018), begin to gather knowledge before proceeding with actions to manage wicked problems.
Wicked problems are difficult to understand because of the complexity and ever-changing characteristics (Weymouth & Hartz-Karp, 2018), which could mean that companies trying to manage biodiversity loss will never move past the understanding phase of the issue and proceed with actions (Barnett et al., 2018). The interview findings demonstrate difficulty in understanding biodiversity loss, but also show that it is not impossible to proceed with actions. The suggestion is, based on the interview findings and empirical background, for organizations to use stakeholder engagement, frameworks, initiatives and KPIs to move past the understanding phase and do something despite the wicked nature of a problem.

## 5.2 Multilevel governance and global frameworks and initiatives

This study presented Agenda 2030 as a governance model in which organizations can manage wicked problems. Although belonging on a global governance level, the empirical data clearly demonstrates the relevance of Agenda 2030 when managing wicked problems at a local level and that it is currently used in practice among Swedish banks to manage biodiversity loss.
When managing wicked problems, several other global frameworks and initiatives are also relevant to use in addition to or in relation to Agenda 2030 - which both global organizations (Finance for Biodiversity Pledge, 2022b) and this study proves. This study presents three global frameworks and initiatives in the empirical background connected to banking and biodiversity, which are considered relevant to use for the financial industry when managing biodiversity loss and can inspire organizations to manage wicked problems in general.
Principles for Responsible Banking (PRB) is relevant for Swedish banks to use since it targets the banking sector specifically in connection to biodiversity loss (UNEP FI, 2020). PRB is an example of global level governance taking a horizontal leap towards the banking sector with a specific focus on sustainable action within banking. The banks interviewed state that PRB is relevant and useful when managing biodiversity loss, because it can accelerate their sustainability performance and increase collaboration with stakeholders - which is in line with research presented by Griffiths (2021).
The second global framework presented in the empirical background is the EU taxonomy. Although being bound to the supranational level of governance that is the EU, the EU taxonomy decentralizes itself by only applying to the financial

market and activities within the EU. It is therefore relevant for actors in the financial sector when managing biodiversity loss, and they can gain several benefits from measuring and disclosing their contributions to the objectives, e.g., increased transparency and legitimacy, becoming more climate-friendly, and the possibility to avoid greenwashing (European Commission, n.d.) - the first two are mentioned in the interview findings. The advantages can apply to other frameworks and wicked problems as well.

Lastly, Finance for Biodiversity Pledge is also relevant to use for banks specifically when managing biodiversity loss. The interview findings support this claim as well as CBD et al. (2021). The pledge is beneficial for those financial actors who seek to increase collaborations with stakeholders and want to manage a sustainability issue according to the best available science (Finance for Biodiversity Pledge, 2022a). These are some things that the interviewed banks note as possibilities and important when managing biodiversity loss, showing the relevance of using Finance for Biodiversity Pledge among Swedish banks as well as using frameworks in general when facing sustainability issues.

Frameworks and initiatives like these are ways to unravel complex governance issues. By decentralizing governance to serve a specific sector, stakeholder or purpose, global levels of authority are relieved from complex and complicated issues. By "picking apart" governance, or decentralizing it through distribution of authority and responsibility to the private sector or to lower levels of governance, complex sustainability issues or wicked problems become more manageable (Daniell & Kay, 2017) - which frameworks and initiatives, such as those mentioned above, can assist in. With inspiration from the interviewed banks' actions, individual organizations can use global frameworks and initiatives for inspiration, knowledge seeking or stakeholder engagement - as a way of managing global wicked problems that have been decentralized to a local level.

## 5.3 Revised conceptual framework

This study investigated the current situation in the Swedish banking industry when it comes to managing biodiversity loss, and the achieved result is considered to relate to the stated aim quite well. The conceptual framework in figure 1, which guided the interviews and analysis and discussion, is, however, not entirely accurate for a current situation analysis of how Swedish banks are managing biodiversity loss - according to the interview findings. Therefore, a discussion about the conceptual framework is adequate and a revised conceptual framework is presented in figure 2 as a proposed answer to the research question and to better relate the result to the aim.

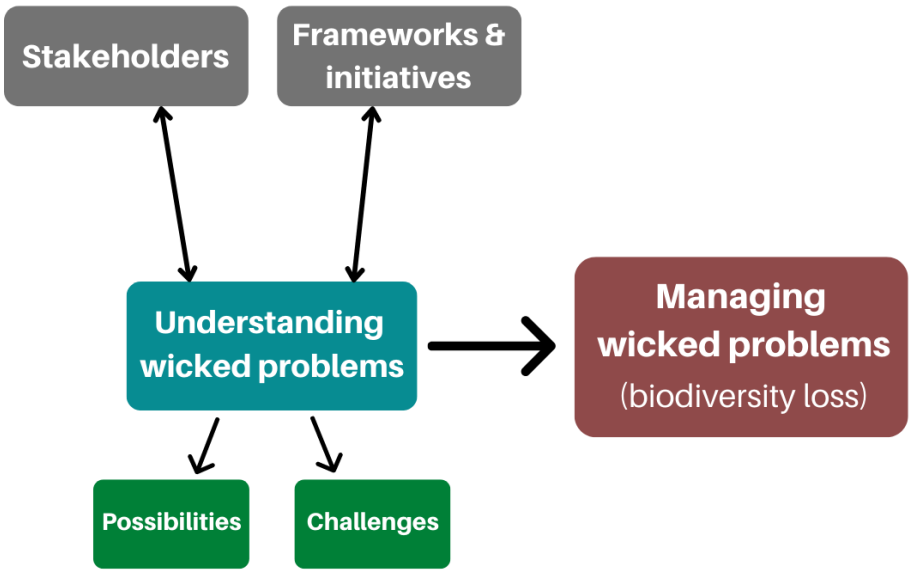


*Figure 2. Revised conceptual framework.*

The interview findings demonstrate that all interviewed banks try to manage biodiversity loss. However, the banks are currently putting more effort into trying to understand biodiversity loss, but not defining priorities or integrating the chosen priorities. Even if Longoni and Cagliano (2015) and Vila et al. (2021) believe that defining priorities and integration are important aspects of being able to positively influence sustainable development, the interview findings in this study demonstrate that the interviewed banks have not come as far as to these two steps yet. For example, all banks consider there to be a lack of KPIs - despite the existence of several KPIs for the financial industry (Finance for Biodiversity Pledge, 2021). This demonstrates that banks are currently trying to understand the issue of biodiversity loss more than any other activity in the conceptual framework, which could inspire organizations to first understand a wicked problem completely before taking actions. This insight is demonstrated in figure 2.

The conceptual framework in figure 1 also included stakeholders and biodiversity loss as a wicked problem. The interview findings proves that stakeholders are important for organizations to engage with when managing a wicked problem, which thus agrees with CBD (2020a) and Kujala et al. (2022) who talk about stakeholder engagement and biodiversity loss. All interviewed banks also consider biodiversity loss to be complex, which agrees with research on biodiversity loss as a wicked problem (Eastwood et al., 2020; Sharman & Mlambo, 2012). This motivates to keep stakeholders and biodiversity loss as a wicked problem in the revised conceptual framework.

This case study demonstrates the relevance of using global frameworks and initiatives when managing wicked problems - which aligns with the empirical background and statements from global organizations (Finance for Biodiversity Pledge, 2020b; GRI et al., 2016). Therefore, a new box is added to the revised

conceptual framework to demonstrate this insight. Furthermore, in addition to global frameworks, the revised conceptual framework itself can also be identified as a framework that help organizations to manage wicked problems in practice and move past the understanding phase - and not only for biodiversity loss. The revised conceptual framework was developed from undertaking literature reviews as well as collecting data about managing biodiversity loss from experts working at banks. This study, therefore, suggests that the revised conceptual framework is key to filling the research and knowledge gap on how organizations manage global wicked problems on a local level, and a starting point on how organizations can proceed with actions to effectively manage wicked problems.

# 6. Conclusion & future research

*This section begins with a conclusion that briefly summarizes the main findings of this study and seeks to distinctly fulfill the aim. Following the conclusion comes the section on future research and this study's contribution, which suggests what business research should focus on in the subject of wicked problem.*

## 6.1 Conclusion

Biodiversity is one of the necessities to sustain life on earth and while it is currently under massive threat, there is still time to make a change. Swedish banks have been recognized as a key catalyst in achieving sustainable development nationally, as is the case of managing biodiversity loss. However, the issue of biodiversity loss is seen as a wicked problem where there is paucity in business research on how individual organizations manage global wicked problems, i.e., sustainability issues, on a local governance level. The aim of this study was thus to contribute to the research knowledge of how individual organizations manage global wicked problems locally, with biodiversity loss and Swedish banks as case examples.

To address this aim, a conceptual framework was developed, which was later revised in section 5.3. Initially, the framework included three major components: three central activities to function as a base for managing wicked problems, with Stakeholder engagement as a key component integrated into the base activities. The conceptual framework was analyzed through a qualitative single case study. Through interview findings from four Swedish banks and secondary data from global biodiversity frameworks, initiatives and KPIs, results provided the study with a snapshot of the current situation of Swedish banks manage biodiversity loss, and thus insights into how individual organizations manage wicked problems locally.

Multilevel governance theory suggests that solutions for sustainability issues can be managed through different levels of power and authority, which this study agrees with. This study concludes that governance at different levels can support organizations to manage global wicked problems. However, this study also discusses the possibility of some wicked problems to be more difficult to manage locally if it has not received enough attention on the global arena. This seems to be

the case for biodiversity loss specifically. Nevertheless, the empirical findings demonstrate that the Swedish banks' work to manage biodiversity loss is applicable to other global wicked problems. As the bank's responses to manage biodiversity loss are largely general approaches and not linked to biodiversity specifically, individual organizations can learn from this study on how to start managing several wicked problems locally - and not only one specific sustainability issue.

Individual organizations are key players in addressing societal and global wicked problems. While there has been paucity in business research on how individual organizations manage these wicked problems locally, this study has started to fill this research and knowledge gap. To successfully manage a wicked problem on a local level, this study concludes that organizations need to first understand a wicked problem completely before taking actions - to avoid a mediocre and inefficient approach. Only when this is completed should an organization start defining priorities, set goals and integrate its specific strategy.

Trying to understand a wicked problem can be difficult - partly because of a high degree of complexity, lack of definitions, and lack of approaching methods. To overcome this obstacle, organizations should utilize several different stakeholders and engage them in the decision-making process. The empirical study shows that organizations can contribute to the solution of wicked problems by developing stakeholder engagement. The primary stakeholder for specifically commercial organizations to engage are customers. The financial industry can engage customers specifically through lending and investment processes, but all commercial organizations in general should utilize customers for exchanging knowledge and advice. Other important stakeholders are employees working firsthand with customers, as well as key industries where a significant direct effect on wicked problems can happen. Moreover, this study also demonstrates that global frameworks and initiatives are vital to include in the process of understanding and managing wicked problems - since they, according to the empirical findings, contribute with knowledge, inspiration and can accelerate an organization's overall sustainability strategy.

The difficulty of understanding wicked problems and proceeding with actions is partly because of the lack of attention on the global arena, but might also be because some wicked problems are not naturally connected to business research - such as biodiversity loss for example. However, despite the origin and nature of a wicked problem on the global arena, it is vital for local organizations to manage them. An effective management of a wicked problems should utilize multilevel governance and stakeholders on different levels and industries. Otherwise, the process of contributing to sustainable development will be lonely and unsuccessful - which in turn will affect an organization's long-term survival.

## 6.2 Future research & contributions

This study presented a research gap in the introduction in how companies manage global wicked problems, on a local level, together with stakeholders. After conducting this study with the aim to close this research and knowledge gap, this study contributes to the insight that since sustainable development became a governance issue, and not only a governmental issue, solutions for sustainability problems (i.e., global wicked problems) need to happen at multiple levels.

The study also contributes with the insight that managing wicked problems is vital, and that stakeholder engagement is an effective way to cope with these issues. The key stakeholder for organizations to engage with is customers, according to this study and CBD (2020a). However, there were mixed perceptions among the interviewed banks on how to engage customers when managing a wicked problem, i.e., biodiversity loss. This study did not focus on how to specifically engage the customers when managing a wicked problem, but since it is important to include the customers, the researchers suggest that future research should focus in detail on how customers can be engaged. Engaging customers accurately when managing wicked problems can strengthen a company's credibility (Boiral & Heras-Saizarbitoria, 2017) and enhances an organization's contribution to sustainable development (Capitals Coalition & Cambridge Conservation Initiative, 2020) and Agenda 2030 specifically (GRI et al., 2016) - which further motivates a detailed research focus on customer engagement.

In addition to stakeholder engagement, this study also briefly discusses having a direct and indirect effect on wicked problems. The two different ways to affect is not a focal area investigated in this study, but since this study and previous research state that an indirect effect on wicked problems can amplify the complexity and create even more challenges (Ritchey, 2013; Maron et al., 2016), future research is suggested to focus on the differences between having a direct and indirect effect on wicked problems. This can make it even more clear for organizations how to properly manage wicked problems, and thus contribute to sustainable development more effectively.

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# Popular science summary

Sustainable development is no longer an issue only for governments to tackle. An increasing number of organizations have started to care for and manage sustainability issues, which research defines as wicked problems. These are complex and subjective problems that lack definitive solutions. When different organizations all over the world have started to manage global sustainability issues, there is a need for research on how to manage these problems locally. However, there is no previous research made on how local actors manage global wicked problems on a local level, especially in connection to stakeholder engagement and global guiding models and frameworks. Hence, the aim was to contribute to the understanding of how current local actors manage global wicked problems. A case example was chosen of Swedish banks and biodiversity loss - since it is a pressing issue to solve and defined by research as a wicked problem.

To address this research aim, the study conducted four interviews, with four individuals each representing a bank. Multiple biodiversity frameworks, initiatives and KPIs for Swedish banks were identified. The results show that even though wicked problems are complex, they can be managed by first understanding the issue - with help from stakeholders, frameworks, and initiatives. From there, organizations can start to define priorities and integrate their strategy into the whole organization. In summary, this study has shown that research on management practices is important to manage wicked problems and solve sustainability issues - especially in combination with stakeholders and in the context of the financial industry. Future business research is, therefore, suggested to focus on how organizations can engage customers specifically when managing wicked problems, since they are important when facing these issues. Lastly, business research should also analyze the difference of having a direct or indirect effect when managing wicked problems - since it will likely guide organizations' future actions more accurately when managing wicked problems.

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Uppsala, 2022
*Evelina Bingmark & Karl Lodén*

# Appendix

## Appendix A - 17 Sustainable Development Goals

| Goal | Definition |
|---|---|
| Goal 1 - No poverty | End poverty in all its forms everywhere. |
| Goal 2 - Zero hunger | End hunger, achieve food security and improved nutrition and promote sustainable agriculture. |
| Goal 3 - Good health and well-being | Ensure healthy lives and promote well-being for all at all ages. |
| Goal 4 - Quality education | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. |
| Goal 5 - Gender equality | Achieve gender equality and empower all women and girls. |
| Goal 6 - Clean water and sanitation | Ensure availability and sustainable management of water and sanitation for all. |
| Goal 7 - Affordable and clean energy | Ensure access to affordable, reliable, sustainable, and modern energy for all. |
| Goal 8 - Decent work and economic growth | Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all. |
| Goal 9 - Industry, innovation and infrastructure | Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. |
| Goal 10 - Reduced inequalities | Reduce inequality within and among countries. |

| | |
|---|---|
| Goal 11 - Sustainable cities and communities | Make cities and human settlements inclusive, safe, resilient and sustainable. |
| Goal 12 - Responsible consumption and production | Ensure sustainable consumption and production patterns. |
| Goal 13 - Climate action | Take urgent action to combat climate change and its impacts. |
| Goal 14 - Life below water | Conserve and sustainably use the oceans, seas and marine resources for sustainable development. |
| Goal 15 - Life on land | Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. |
| Goal 16 - Peace, justice, and strong institutions | Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels. |
| Goal 17 - Partnerships for the goals | Strengthen the means of implementation and revitalize the global partnership for sustainable development. |

# Appendix B - the interview guide

***Section 1 - Understanding biodiversity loss***

1. How does your bank define biodiversity loss?
    0. How do you obtain knowledge on biodiversity loss at your bank?
2. By managing biodiversity loss, how do you think it will affect your bank?

***Section 2 - Defining priorities***

1. What are your bank's priorities in terms of managing biodiversity loss?
    0. How are these priorities determined?

***Section 3 - Integrating***

1. How does your bank integrate the prioritized measures of managing biodiversity loss into daily business practices?

***Section 4 - Stakeholder engagement***

1. How are stakeholders engaged in each step of the process of managing biodiversity loss?

***Section 5 - Ending***

1. Is there anything else you want to add related to the topics of this interview?

# Appendix C - 6 Principles for Responsible Banking

| Name of Principle | Description (UNEP FI, 2019) |
|---|---|
| Alignment | "We will align our business strategy to be consistent with and contribute to individuals' needs and society's goals, as expressed in the Sustainable Development Goals, the Paris Climate Agreement and relevant national and regional frameworks" |
| Impact & target setting | "We will continuously increase our positive impacts while reducing the negative impacts on, and managing the risks to, people and environment resulting from our activities, products and services. To this end, we will set and publish targets where we can have the most significant impacts." |
| Clients & customers | "We will work responsibly with our clients and our customers to encourage sustainable practices and enable economic activities that create shared prosperity for current and future generations." |
| Stakeholders | "We will proactively and responsibly consult, engage and partner with relevant stakeholders to achieve society's goals." |
| Governance & Culture | "We will implement our commitment to these Principles through effective governance and a culture of responsible banking." |
| Transparency & Accountability | "We will periodically review our individual and collective implementation of these Principles and be transparent about and accountable for our positive and negative impacts and our contribution to society's goals." |

## Appendix D - coding scheme

| Interview questions | Themes | Respondents' answers - examples |
|---|---|---|
| How does your bank define biodiversity loss?<br>How do you obtain knowledge on biodiversity loss at your bank?<br>By reducing biodiversity loss, how do you think it will affect your bank? | Understanding biodiversity loss | *We do not have our own definition, but use current research and global frameworks. The CBD and the UN feel relevant to start from when gaining knowledge.*<br>*We do our own research, but also through various initiatives we are involved in. We also have our own specialists within the bank who have worked for a long time with sustainability that educate us.*<br>*Possibility to affect different industries better, and in turn, the people and customers affected by those industries. However, also a challenge of falling behind competitors that have more resources.* |
| What are your bank's priorities in terms of reducing biodiversity loss?<br>How are these priorities determined? | Defining priorities | *Trying to create a framework and guidance internally.*<br>*Reducing biodiversity loss foremost through our customers and initiatives.*<br>*Strategic decisions are made through our board, but everyday and specific priorities are made by the sustainability team.* |
| How does your bank integrate the prioritized measures of reducing biodiversity loss into daily business practices? | Integrating | *Through a sustainability policy where biodiversity loss is mentioned.*<br>*Providing information through customer engagement and having strict policies for our suppliers.*<br>*External education and certificates to all employees within sustainability - where biodiversity is included.* |

| | | |
|---|---|---|
| How are stakeholders engaged in each step of the process of reducing biodiversity loss? | Stakeholder engagement | *Right now, stakeholders are mainly used to create understanding and decide what we want to do. But will be used throughout the process.* |
| | Wicked problem | *There are many different ways to measure, many different definitions and many different approaches. A complex problem that does not have a clear solution. And that the problem and its solution change over time - the solution that works today is probably not the best in a few years.* |

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