

# Climate Compensation through Forestry Initiatives

An analysis to support corporate compensation decisions

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## Abstract

An increasing number of companies are now publicly committing to becoming carbon neutral or achieving net-zero emissions. While most organisations will focus on preventative measures to reach their targets, climate compensation will also make up part of a company's carbon management strategy. Initial reports indicate that corporate investments in forestry-related initiatives have significantly increased in recent years. However, there is currently a lack of competence and guidance regarding how to develop credible carbon targets and strategies that involve such compensation initiatives. This research provides a detailed description of the current landscape of corporate climate compensation and the different forestry-related initiatives that companies are investing in to achieve their ambitious targets. It also identifies when a company's climate compensation actions are perceived as credible from the perspective of salient stakeholders. Data collection involved reviewing the webpages and sustainability reports from 16 companies with investments in or involvement with forestry-related initiatives. Position reports, guidance documents and webinars published by environmental NGOs, global voluntary initiatives, voluntary standards and consultants were also analysed. Further, nine interviews with corporate sustainability professionals, environmental NGOs and consultancy firms were conducted. This research highlights the rapidly evolving field of climate compensation and has provided evidence for the current growth and development in forestry-related initiatives used in the corporate sector. It has also uncovered various uncertainties that exist surrounding the credibility of climate claims, strategies and the mitigation approaches available to address residual emissions. Findings demonstrate that there is an urgent need for actors in the field to achieve alignment on definitions and credible approaches to net-zero to avoid confusion and to drive ambitious and impactful climate action. Areas of future research include exploring developments of corporate carbon frameworks, guidance and definitions and addressing the views of actors not addressed in this study such as local-NGOs, policymakers and government officials.

**Keywords:** corporate climate compensation – forestry initiative – climate strategy – offset – inset – forest governance

## Executive Summary

Since the adoption of the Paris Agreement in 2015 and the release of the IPCC's Special Report on 1.5°C in 2018, there has been a significant increase in companies setting ambitious climate targets such as net-zero, carbon neutral and climate positive. Specifically, the number of companies committing to reach net-zero emissions by 2050 has more than tripled in the past four months, with 201 signatories to the United Nations Global Compact (UNGC)'s Business Ambition for 1.5°C campaign as of March 2020. This UN-led campaign urges business and industry leaders to commit to ambitious emission reduction targets through the Science Based Target Initiative (SBTi). While preventative measures are an essential part of any corporate carbon strategy, companies are starting to realise the need to contribute to the capture and storage of carbon dioxide (CO<sub>2</sub>). For example, through forestry-related initiatives such as forestry carbon offset and inset projects, to compensate for residual emissions and contribute to achieving the Paris Agreement's objectives.

Initial reports indicate a significant rise in demand for carbon credits from forestry projects. These projects may involve the creation or protection of natural carbon sinks, for example through afforestation, reforestation, land restoration and sustainable forest management. Companies are increasingly investing in these projects as part of their carbon strategies to achieve ambitious climate targets and prove their commitment to addressing the rising carbon content in the atmosphere (Goldstein, 2015; Weber, 2018; WWF, 2019). These investments are often made in response to stakeholder pressure to improve environmental performance.

Despite the many benefits that these initiatives can have, when a company invests in carbon projects to claim reduced emissions, they can face criticism from the media and some environmental advocates. Offsets have been seen as a form of greenwashing in the past, where a company pays others to reduce their emissions while they continue polluting (Broekhoff et al., 2019). Currently, there is no one standard or framework that a company can follow when considering investing in carbon projects. Instead, businesses can rely on the methodologies developed by voluntary standards to assess the quality of projects. However, it may be that certain projects have broader negative sustainability impacts that can lead to criticism from a company's stakeholders. Therefore, a company must have a sound reason for confidence in the approach they choose and how they communicate this decision before any significant investments are made to minimise business risk. Current literature on global climate governance centres primarily around collective action, or governance *with* governments, while activities and initiatives at firm level, or governance *without* governments, is still under-researched (Weber, 2018).

### **Research questions and methodology**

To address the problems described above, this research aims to 1) provide a detailed description of the current landscape of corporate climate compensation and the different forestry-related initiatives that companies are investing in to meet their ambitious targets; and 2) identify when a company's climate compensation actions are perceived as credible from the perspective of salient stakeholders. To achieve this aim, two research questions (RQs) are posed:

**RQ<sub>1</sub>: How are companies with investments in forestry projects communicating their climate targets and compensation activities?**

**RQ<sub>2</sub>: When is a company's climate compensation investment in a forestry project seen as credible by salient stakeholders?**

The intended audience of this research are proactive companies that are considering investing in forestry carbon offset or inset projects and wish to be in a more informed position from which to make investment decisions. This research also aims to interest researchers in the field of global climate governance at the firm level by providing more knowledge regarding current business decision-making practice and stakeholder acceptance related to forestry projects.

To address the RQs, this thesis follows a multi-case study design where corporate investments in forestry projects to meet ambitious climate targets are considered ‘cases’. Methods of data collection include a comprehensive literature review of academic and grey literature, including a review of stakeholder salience theory and legitimacy theory. A practitioner review is conducted to understand how industry practices align with academic knowledge and how stakeholders perceive industry actions. The study involves reviewing corporate webpages and sustainability reports for 16 companies with investments in or involvement with forestry-related initiatives as well as position reports, guidance documents and webinars published by environmental NGOs, global voluntary initiatives, voluntary standards and consultants. Further, nine semi-structured online interviews with corporate sustainability professionals, environmental NGOs and consultancy firms are conducted.

### **Main findings**

Findings show that there is an evident rise in forestry-related initiatives being used in practice. This rise was attributed to forests’ ability to sequester carbon from the atmosphere, as well as companies’ perceived need to pursue the multiple co-benefits often associated with these projects. Furthermore, the rise in corporate environmental initiatives was accredited to the Paris Agreement’s 1.5°C objectives as well as Greta Thunberg’s influence. This research identifies a general lack of transparency regarding corporate communications on climate targets. Also, a move away from terms such as ‘offsets’ towards ‘nature-based solutions’ and more climate-focused terminologies is identified. This study highlights that some companies are emphasising their ambition to avoid using carbon offsets to achieve their climate targets. This analysis considers this evidence that corporate ambitions must change to remain acceptable to stakeholders, not least due to the apparent escalation of stakeholder expectations as more companies step away from ‘offsets’.

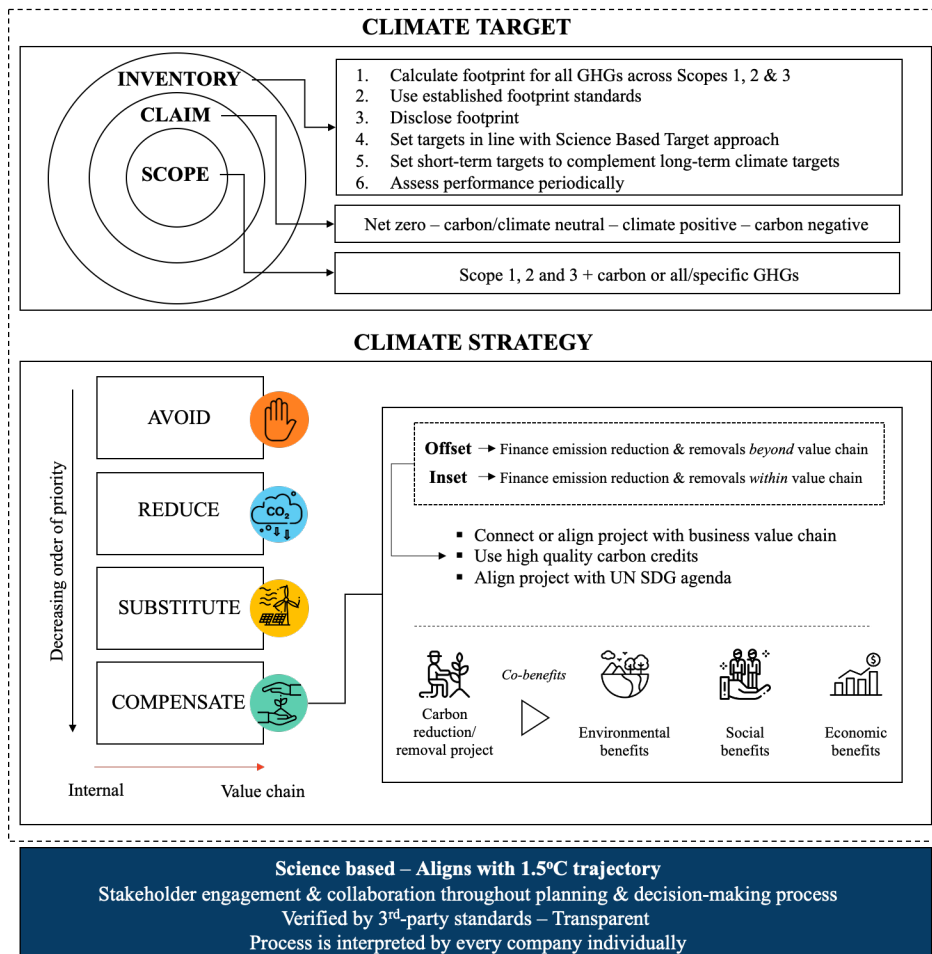
This research also highlights a major gap in robust definitions for climate terminology as well as in expert guidance to help evaluate a company’s overall strategic approaches to climate change. As such, results show the tendency for frameworks and guidelines to develop bottom-up. While there is a need for more robust guidance, this study reveals that companies are inclined to follow the guidance of actors such as SBTi and GHG protocol as they are considered the ‘experts’ in the corporate climate action arena. This analysis finds that following the advice of these science-based actors is considered credible amongst critical stakeholders. Furthermore, this research finds evidence that stakeholders place value on transparency in any credible carbon strategy.

The findings highlight that there are continuous updates and developments in this field, with more than half of the companies reviewed currently developing strategies or positions on climate compensation as this research took place. While all of the companies reviewed in this study have ambitious climate targets, they take varying levels of approaches to reach those goals. Results imply that some companies apply a more hands-on approach to climate compensation, such as collaborating with partners to develop projects related to their business value chain or purchasing land to develop and manage woodland. Alternatively, some companies are more hands-off in their approaches and invest in pre-existing offset projects where the responsibility of development, maintenance and reporting sits with another entity.

Results highlight the importance of aligning climate strategies, management and activities with the science of climate change. There are strong opinions that the 1.5°C trajectory and efforts to achieve net-zero should become the ‘new normal’. Recommendations from practitioners emphasised companies need to ensure they have a robust decarbonisation plan in place before investing in any carbon compensation projects. This study finds that while efforts to avoid and reduce emissions are prioritised above compensation initiatives, these actions can run concurrently. Therefore, nothing is prohibiting an ambitious company from setting SBTs while also working towards the capture and storage of emissions through natural carbon sinks.

**Key recommendations for practitioners**

Based on the above findings, recommendations for companies looking to develop a credible climate target and strategy are presented in figure and summarised below:



*Key recommendations for developing a credible corporate climate target & strategy*

Key recommendations to help companies navigate the uncertainties prevailing in this field:

- Ensure the climate claim, targets and strategy are **science-based**.
- Be **transparent** in internal and external communication about *why* specific corporate claims, targets, strategies and compensation initiatives are chosen.
- Develop a robust **decarbonisation** plan before offsetting emissions.
- Consider positive *and* negative impacts that compensation projects may have on the local environment, communities and economy of the country in which it takes place.

- **Collaborate with stakeholders**, specifically environmental NGOs, multilateral organisations (e.g. CDP, GHG Protocol), and other proactive companies to be at the forefront of any future decision-making.
- **Stay updated** with new initiatives, working groups and relevant discussions. Furthermore, keep track of other corporate initiatives and strategies as they develop.

For those actors creating sector-specific guidance on how a company should define and work towards their climate targets:

- Ensure the guidance aligns with the SBTi, GHG protocol and market standards.
- Avoid a mixture of very ambitious and very lax climate action falling under the same claim. A very ambitious company and non-ambitious company should not be able to make the same climate claim.

### ***Academic contribution and further research***

This thesis has contributed to a rapidly evolving field by advancing the current knowledge on corporate climate compensation, explicitly involving the development and implementation of forestry-related initiatives. It has uncovered various uncertainties that exist surrounding the credibility of climate claims, strategies and the mitigation approaches selected to address residual emissions. It has also highlighted the urgent need for actors in the field to achieve alignment on definitions and credible approaches to net-zero to avoid confusion and to drive ambitious and impactful climate action. Further research is required to understand corporate self-perception and behaviour; specifically, there is a need to understand modes of corporate actions. Further research could address the views of actors not included in this study, such as local-NGOs, policymakers or government officials. An additional research area includes exploring developments of corporate carbon frameworks, guidance and definitions. Finally, as this is an extremely dynamic area, with many unanswered questions further research could consider: when a company should use carbon credits and for what claims; the roles of and differences between ‘reductions’, ‘removals’ and ‘avoided emissions’; if there are types of credits and/or projects that are more suited for specific emission sources (e.g. is one project more suited to compensate for carbon emissions versus other GHG emissions?); what are the benefits/weaknesses/drivers/barriers of insetting versus offsetting?; and finally, what claims can be made for what activities? (e.g. is carbon neutrality a stepping-stone on the journey to net zero?).



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## Abbreviations

ACE – Alliance for Beverage Cartons and the Environment

A/R – Afforestation/Reforestation

CCBA – Climate, Community and Biodiversity Alliance

CDM – Clean Development Mechanism

CDP – formerly known as the Carbon Disclosure Project, now just ‘CDP’

CO<sub>2</sub> – Carbon Dioxide

COP – Conference of the Parties

CSR – Corporate social responsibility

FAO – Food and Agriculture Organisation of the United Nations

GHG – Greenhouse Gas

GtCO<sub>2</sub> – Gigaton of carbon dioxide or equivalent

ICROA – International Carbon Reduction and Offset Alliance

IET - International Emissions Trading

IPCC – International Panel of Climate Change

IUCN – International Union for Conservation of Nature

JI – Joint Implementation

MNC – Multinational Corporation

MtCO<sub>2</sub>e – Metric tonnes of carbon dioxide or equivalent (measured in millions, M or thousands, K)

NBS – Nature Based Solutions

NCS – Natural Capital Solutions

NDCs – Nationally Determined Contributions

NGO – Non-governmental organisation

SBTi – Science Based Target Initiative

SDG – Sustainable Development Goals

SME – Small-medium enterprise

UN – United Nations

UNEP – United Nations Environmental Programme

UNFCCC – United Nations Framework Convention on Climate Change

UNGC – United Nations Global Compact

VCM – Voluntary carbon market

VEI – Voluntary environmental initiative

VER – Verified Emission Reductions

WRI – World Resources Institute

# 1 Introduction

## 1.1 Background and Significance

In 2018, the Intergovernmental Panel on Climate Change (IPCC) released the Special Report on 1.5°C estimating that by 2050, global net anthropogenic carbon dioxide (CO<sub>2</sub>) emissions will need to reach ‘net zero’ – where emissions are in balance with removals – for a 50% chance of avoiding the worst effects of climate change (IPCC, 2018, 2019). To minimise these unpredictable and dangerous effects and limit global warming to well below 1.5°C by the end of the century, immediate action must be taken by every local and national government, business and individual to reduce greenhouse gas (GHG) emissions (Hamrick & Gallant, 2018). To that end, how to achieve net-zero emissions globally has been described as “the most important and most active question for the climate movement” (WWF, 2019:1). Despite international efforts to address these challenges, such as the Paris Agreement’s decarbonisation objectives, GHG emissions continued to rise in 2019 (McGrath, 2019). Radical emissions reductions require systematic solutions: a shift away from fossil fuels, substantial energy efficiency improvements and the restructuring of current economic systems (Bayon, Hawn, & Hamilton, 2009; Kollmuss, Zink, & Polycarp, 2008). Some progress has been made through increased use of renewable energy, technological developments and a focus on the circular economy; however, these actions are not enough to eliminate a carbon footprint<sup>1</sup> (Carillo Pineda & Faria, 2019).

Recently, the concept of net-zero emissions and carbon or climate neutrality has gained prominence in the climate action and policy arena, leading to a rise in countries and companies setting long-term pathways to reach net-zero emissions (Carillo Pineda & Faria, 2019). In the corporate sector, the number of companies committing to reach net-zero emissions by 2050 has more than tripled in the past four months with 201 signatories to the United Nation Global Compact (UNGC)’s Business Ambition for 1.5°C campaign<sup>2</sup> as of March 2020 (UNGC, 2020a). Businesses with proactive (as opposed to reactive) environmental strategies voluntarily implement practices and initiatives intended to improve environmental performance, known as voluntary environmental initiatives (VEIs)<sup>3</sup> (Carballo-Penela & Castromán-Diz, 2015). As proactive businesses take a more constructive approach toward international climate action by addressing and improving their environmental management, a wide range of climate change mitigation strategies and approaches are used to set and implement ambitious climate targets and make related claims (Carillo Pineda & Faria, 2019; Kolk et al., 2008). Companies are acknowledging that in order to reach the goals of the Paris Agreement, it is no longer enough only to reduce emissions. Therefore, companies must consider contributing to the capture and storage of CO<sub>2</sub>, for example, through forestry-related initiatives such as carbon offset and inset projects to compensate for residual emissions<sup>4</sup>. These concepts are discussed further.

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<sup>1</sup> A carbon footprint represents the total amount of GHG emissions released into the atmosphere from the activities of a particular individual, organisation, or community, expressed as carbon dioxide equivalent (*Dictionary of Energy*, 2015).

<sup>2</sup> A campaign led by UN agencies, business and industry leaders calling for companies to commit to ambitious emission reduction targets through the Science Based Target Initiative (SBTi) (SBTi, 2019).

<sup>3</sup> Voluntary environmental initiatives could include: reducing internal and supply chain GHG-emissions, eliminating waste, replacing an unsustainable material for a sustainable alternative or innovating manufacturing practices (EMS, 2018).

<sup>4</sup> Residual emissions are “the emissions remaining after all technically and economically feasible opportunities to reduce emissions in all covered scopes and sectors have been implemented” (C40 Cities, 2020).

## **Research Partner: Tetra Pak AB**

This thesis was written in collaboration with Tetra Pak AB (hereafter referred to as Tetra Pak), a Swedish multinational company operating in the packaging industry. Tetra Pak offer processing, packaging and service solutions for food and beverages. The company is well known for its aseptic packages that preserve food and liquids, helping to “make food safe and available everywhere” (Tetra Pak, 2020a). Tetra Pak is recognised as a leader in sustainable business and is a signatory to UNGC, Science Based Targets initiative (SBTi) and the CDP<sup>5</sup> among other global initiatives. In January 2020 Tetra Pak was named on the CDP Supplier Climate A list<sup>6</sup> as well as the CDP Forest A list, demonstrating its high sustainability positioning (Tetra Pak, 2020b). Tetra Pak has set ambitious climate targets and aims to use 100% renewable electricity across global operations by 2030 (Tetra Pak, 2019). Moreover, its sustainability team works on numerous projects including improving the recyclability of their products to join the transition towards a circular economy and more recently researching the options available to develop ‘carbon-neutral’ products and processes (Environment Specialist, Tetra Pak, personal communication, December 4, 2019). The work presented in this thesis is based on Tetra Pak’s recent interest in corporate carbon compensation through carbon credits in the forestry and land-use area. These concepts are expanded on and discussed further.

## **Climate compensation through carbon credits**

Initiatives related to corporate carbon management include activities and policies aimed at climate protection such as the voluntary purchase of carbon offset credits<sup>7</sup> or the more recent concept of carbon insetting - where investments are made in emission reduction projects within a company’s value chain (Weber, 2018). Insetting is explained further in Chapter 2. Carbon offsets are measurable units of GHG emissions reductions, which can be used by emitters when it becomes financially unfeasible or physically impossible to reduce emissions any further (Hamrick & Gallant, 2018a). They can be purchased on the voluntary or compliance carbon market, as explained in Chapter 2. Carbon credits are produced by on-the-ground projects that carry out emission reduction activities outside of the company’s value chain or sphere of influence (Banerjee et al., 2013). These projects range from renewable energy infrastructure to planting trees for carbon sequestration; supporting both large-scale and community projects. As demonstrated in Figure 1-1, these projects can be classified as either a) carbon removal or b) avoided emission. Projects that remove CO<sub>2</sub> from the atmosphere and store it in terrestrial, geological or ocean reservoirs (carbon sinks), or in products are known as carbon removals. Existing and prospective removal measures include: afforestation and reforestation (A/R)<sup>8</sup>, land restoration, soil carbon sequestration, bioenergy combined with carbon capture and storage (BECCS), direct air carbon capture and storage (DACCS), enhanced weathering and ocean alkalisation (Carillo Pineda & Faria, 2019). Avoided emission projects include protection of natural carbon sinks, for example, avoided deforestation.

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<sup>5</sup> Formerly known as the Carbon Disclosure Project, more recently known as ‘CDP’, more information in Appendix G.

<sup>6</sup> CDP’s A List “names the world’s most pioneering companies leading on environmental transparency and performance” (CDP, 2020b)

<sup>7</sup> ‘Carbon offsets’ and ‘carbon offset credits’ are used interchangeably although they have slightly different meanings. Carbon offsets represent “a reduction in GHG emissions - or an increase in carbon storage that is used to compensate for emissions that occur elsewhere” (Broekhoff, Gillenwater, Colbert-Sangree, & Cage, 2019:6). A carbon offset credit, on the other hand, is a “transferable instrument certified by governments or independent bodies to represent an emission reduction of one metric tonne of CO<sub>2</sub>, or an equivalent amount of other GHGs” (Broekhoff et al., 2019:6).

<sup>8</sup> A/R projects involve improving the management of forests, farms and fields (Zwick, 2019).

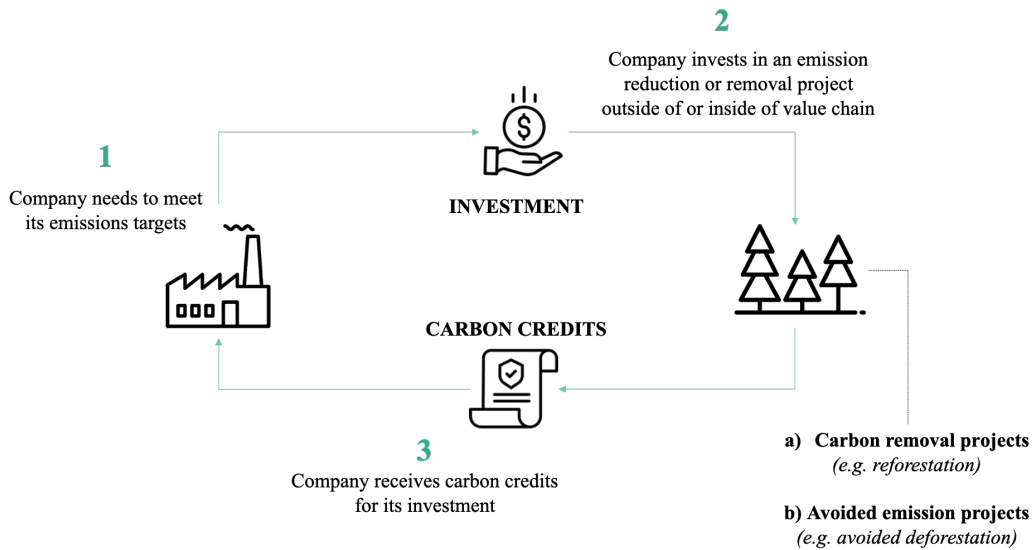


Figure 1-1: Corporate investments for carbon credits

Source: Own illustration

A carbon offset credit represents the equivalent of one metric tonne of carbon dioxide (or MtCO<sub>2</sub>e) reduced somewhere in the world (Broekhoff et al., 2019; Hamrick & Gallant, 2018). Companies can purchase these carbon offsets to claim a reduction in their CO<sub>2</sub> consumption, thus reducing their carbon footprint and potentially gaining a carbon- or climate-neutral certification for a product or business process. Insetting, on the other hand, refers to an investment in an emission reduction or carbon sequestration project that is linked to the company's value chain or direct sphere of influence (Banerjee et al., 2013).

In February 2020 Tetra Pak launched its first ever carbon-neutral product which involved investing in two different carbon offset types for a short-term pilot project (Environment Specialist, Tetra Pak, personal communication, December 4, 2019). Views within the company are that if Tetra Pak is to commit to future climate compensation projects, an in-depth and detailed understanding of these processes is required from which to make informed investment decisions. The overwhelming majority (99%) of Tetra Pak's land use is associated with forestry, due to the paper resources required for its cardboard packaging. Consequently, it makes business sense to align carbon credit projects with Tetra Pak's value chain (Environment Specialist, Tetra Pak, personal communication, March 18, 2020). For this reason, carbon credit producing projects related to forestry are the focus of this research and will be discussed further.

### Forestry projects

As exhibited in Figure 1-1, carbon credits can be generated from various project types. Projects that fall within the 'forestry and land use' category have gained popularity in recent years. Forest Trends' Ecosystem Marketplace (2019) reported a 265% increase in the volume of offsets generated through forestry and land use activities between 2016 and 2018, from 13.9 MtCO<sub>2</sub>e to 50.7 MtCO<sub>2</sub>e. Specifically, offsets from A/R projects have increased 342% between 2016 and 2018 from less than 2 MtCO<sub>2</sub>e to 8.4 MtCO<sub>2</sub>e (Forest Trends' Ecosystem Marketplace, 2019). These types of projects may involve planting trees or sowing seeds in an area without forests (afforestation); planting trees in an existing forest where the number of trees is decreasing (reforestation); and restoring biodiversity, structure and function to a damaged ecosystem (land restoration) (IPCC, 2019b).

## **Drivers of corporate climate compensation**

Investing in forestry carbon offsets, either on voluntary or compliance markets, or implementing insetting practices is increasingly being used by companies as part of their carbon management strategies. This type of individual action has become important for companies to prove their commitment to addressing the rising carbon content in the atmosphere (Goldstein, 2015; Weber, 2018; WWF, 2019). The growing popularity of voluntary environmental initiatives such as insetting demonstrates a “significant shift in the way MNCs<sup>9</sup> deal with sustainability issues” (Weber, 2018:620). Investing in carbon-mitigation projects can benefit a company in numerous ways: **first**, this action can act as a powerful demonstration to critical stakeholders of the firm’s environmental commitment (Goldstein, 2015); **second**, early adopters can gain an understanding of how the voluntary market works and how to best adapt their business practices in preparation for mandatory schemes and more stringent environmental regulations in the future (Tipper et al., 2009); **third**, in most cases, carbon offset projects produce co-benefits<sup>10</sup> such as greater community employment opportunities, gender equality improvements and better access to health and education services (Broekhoff et al., 2019). These additional benefits are attractive to companies that incorporate sustainable development into their corporate social responsibility (CSR) or sustainability strategies. They can often be linked to the UN Sustainable Development Goals (SDGs), a common sustainable marketing tool.

## **1.2 Problem Definition**

Despite these benefits, businesses that purchase carbon credits to claim reduced emissions, frequently face criticism from the media and some environmental advocates, this is especially linked to when and how they are used (Broekhoff et al., 2019). Offsets have been criticised as an easy way out where businesses pay others to reduce their emissions, therefore allowing polluters to keep on polluting, i.e. a form of greenwashing<sup>11</sup> (Broekhoff et al., 2019). Another perceived problem with this form of climate compensation is the great distance that can exist between the buyer and the producer of the emission credits (Röstlund & Lenas, 2019). Offset companies have been described as “undermining the necessary political battle to tackle climate change at home” (Monbiot, 2006) by allowing businesses and individuals to pay someone else to undo the environmental damage they have caused and thus buy a ‘clean conscience’. They are seen as a short-term solution that can ‘lock-in’ high-carbon infrastructure since companies may purchase offsets without taking initiatives to reduce internal emissions, meaning high-emitting activities can prevail (Blum & Lövbrand, 2019). Some argue that offsets are “used as an excuse for the unsustainable growth of carbon-intensive activities” (Monbiot, 2006). Furthermore, carbon offset projects have sometimes been associated with adverse impacts on land and local communities that may potentially worsen environmental problems. These findings and ongoing issues with determining additionality<sup>12</sup> undermine the legitimacy of carbon compensation projects.

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<sup>9</sup> MNC = Multinational corporation

<sup>10</sup> Co-benefits are defined as the “social, economic and environmental benefits delivered by voluntary carbon offset projects that are in addition to the carbon reductions they achieve” (ICROA, 2018).

<sup>11</sup> Greenwashing is defined as “the selective disclosure of positive information about a company’s environmental or social performance, while withholding negative information on these dimensions” (Lyon & Maxwell, 2011:5)

<sup>12</sup> If GHG emission reductions would not have occurred without a market for offset credits, then they are additional (Broekhoff et al., 2019a). Purchasing non-additional GHG reductions instead of reducing will worsen climate change.



As previously mentioned, a growing number of businesses are striving to achieve carbon-neutral products, processes or entire business operations. This is often in response to pressure from stakeholders to minimise their direct and indirect environmental impacts (Climate Corporation, 2019; Hahn et al., 2015a). This field is dynamic, with companies frequently releasing new carbon strategies with selected initiatives to reach ambitious climate targets. Many companies mention carbon-sinks, land restoration, afforestation, reforestation and other forestry-related activities in their strategies; however, it is not always clear how the company uses those specific activities to address its carbon footprint. Often carbon credits are used by companies to make carbon neutral claims; however, as they are a somewhat controversial topic, a company can risk its reputation and be accused of greenwashing if it makes misleading claims or invests in an unreliable project. Consequently, the credibility of a carbon offset or offset project becomes an essential factor in a company's decision making. Specifically, companies considering this voluntary initiative must recognise the credibility of the offset, i.e. the reputability of the offset mechanism as well as how accepted the offsets are by salient stakeholders (Elijido-Ten et al., 2010).

Currently, there is no standard way to assess the quality of offset projects in the voluntary market, with offset quality varying considerably due to its intangible nature. Instead, businesses and individuals must trust the process of voluntary standards, such as the Gold Standard and Verra's Verified Carbon Standard (VCS)<sup>13</sup>, which can endorse the quality of an offset from a technical point of view. However, it may be that despite this, certain offsetting projects have wider negative impacts such as land-rights issues and uncertainties regarding additionality, which can lead to criticism from company stakeholders. Therefore, a company must have a sound reason for confidence in the approach they choose and how they communicate this decision before any significant investments are made to minimise business risk.

Since there is currently no one standard or framework that a company can follow when considering investing in carbon offset or inset projects, companies are beginning to incorporate new roles into their core business activities to engage with political, social and ecological issues (Weber, 2018). These actions become challenging with the lack of standardisation, clear definitions and clarity amongst different actors in the voluntary carbon market (VCM). Nevertheless, they are important activities to ensure business' investment decisions are of value for both the company and those communities in which climate compensation projects occur. While setting ambitious climate targets is essential, there remains a lack of research concerning how effective these targets are on non-financial performance outcomes, leading to legitimacy concerns with some VEIs (Dahlmann et al., 2019). Furthermore, current literature on global climate governance centres largely around collective action, or governance *with* governments, while activities and initiatives at the firm level, or governance *without* governments, is still under-researched (Weber, 2018).

### 1.3 Research Aim and Questions

To address the problems described above, this research aims to 1) provide a detailed description of the current landscape of corporate climate compensation and the different forestry-related initiatives that companies are investing in to meet their ambitious targets; and 2) identify when a company's climate compensation actions are perceived as credible from the perspective of salient stakeholders<sup>14</sup>. This research will consider the actions companies are

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<sup>13</sup> Gold Standard: [www.goldstandard.org](http://www.goldstandard.org) & Verified Carbon Standard: [www.verra.org](http://www.verra.org)

<sup>14</sup> Salient stakeholders are those actors with power, legitimacy, or urgency in relation to the firm. See 5.1.1.

taking to address residual emissions to achieve ambitious climate goals; the sustainability issues and/or co-benefits companies are targeting through their investments in forestry projects and the views of different salient stakeholders towards these corporate actions. To achieve this aim two research questions (RQs) are posed:

**RQ<sub>1</sub>: How are companies with investments in forestry projects communicating their climate targets and compensation activities?**

In order to address this umbrella question, the following tasks are pursued in this analysis:

1. Delineate the terminologies and forms of corporate guidance that companies are using to support their climate targets and strategies;
2. Document the key activities specific to forestry in which companies invest to address residual emissions and thus meet ambitious climate targets;
3. Identify additional sustainability issues and/or co-benefits that companies target when they invest in forestry projects.

**RQ<sub>2</sub>: When is a company's climate compensation investment in a forestry project seen as credible by salient stakeholders?**

In order to address RQ<sub>2</sub>, the following tasks are followed in this analysis:

1. Identify the main concerns expressed by salient stakeholders towards forestry projects;
2. Determine the recommendations and demands that salient stakeholders offer companies regarding credible forestry initiatives.

**Clarification of terminology**

The term *ambitious climate targets* refers to net-zero, climate neutral, climate positive or climate negative goals. *Sustainability issues and/or co-benefits* refers to those sustainability issues or co-benefits the company has acknowledged or targeted in addition to the climate compensation intention of the investment (e.g. carbon removal). Stakeholders considered *salient* for this study included environmental non-governmental organisations (NGOs), global voluntary initiatives, voluntary standards and consultants with experience in corporate climate compensation. The stakeholder selection process is explained further in Chapter 3.

**1.4 Scope and Limitations**

This research focuses on the carbon compensation activities available for proactive companies to offset residual emissions. The research assumes that companies have a robust plan in place to reduce internal and supply-chain emissions. Therefore, it focuses on the climate mitigation approaches available for companies to meet their targets. Specifically, this research is restricted to an examination of corporate decision making related to one category of carbon credit producing projects – forestry and land use. This category includes projects in managing forests, soil, grasslands, and other land types. These are predominantly classified as afforestation, reforestation and land restoration projects and are used to avoid the release of carbon into the atmosphere and/or to increase the storage of carbon in trees and land (Hamrick & Gallant, 2018b). These types of projects are chosen as the focus of research as forestry projects have gained significant popularity in recent years, and they align with the business activities of Tetra Pak that use paperboard for its packaging products. Furthermore, understanding the best-practice process and stakeholder views of forestry projects is applicable to companies considering investing in this type of project outside of or inside of their sphere of influence, i.e. an offset or an inset.

In terms of limitations, the study of one specific type of carbon credit-producing project leads to generalisability issues for the whole category of carbon offset projects available. Additionally, the scoping of salient stakeholders to four main groups means that some stakeholders are disregarded in this study, and therefore certain perspectives are not captured in the results. Furthermore, this research was conducted during the time that the global COVID-19 outbreak occurred. Worldwide COVID-19 restrictions and quarantine orders influenced the present study where response rates to requests for interviews were lower than expected. Some potential interviewees that did respond often had no time to participate in an interview as they were coping with the global crisis and all the side-effects the virus caused. This means the collected data on corporate forestry actions and stakeholder perspectives on these forestry initiatives is not as detailed and in-depth as it could have been with the intended number of interviews (10+). Finally, this pandemic meant the author was unable to access the Tetra Pak office to interact with the sustainability team as planned due to precautionary measures; however, this did not impact the study greatly as fortnightly video meetings were organised between the author and supervisor at Tetra Pak instead.

## **1.5 Ethical Considerations**

This project was conducted in collaboration with Tetra Pak in Lund, Sweden. Tetra Pak provided numerous written documents, assisted in connecting the author with specific interview contacts and provided financial support for the author. The research was intended to be used to help inform Tetra Pak's decision-making regarding their approach to compensate for residual emissions through a forestry project. Since this was a new area for Tetra Pak and one in which it was looking to be better informed, no issues of the company influencing the analysis and subsequent conclusions were predicted. A confidentiality agreement was signed between the author, supervisor at Tetra Pak and Director of the HIEE to ensure any confidential information gathered from interviews or directly from Tetra Pak was protected.

The research proposal for this thesis was reviewed against the criteria for research requiring an ethics board review at Lund University and was found to not require a statement from the ethics committee. Ethical considerations for this research mainly concerned the interview process and data. Interviews conducted for this research were entirely voluntary. Prior to the interviews, all participants were informed of the purpose of the research through an explanatory email and if requested, they received a project brief based on the document in Appendix A. Before the interviews commenced, participants were asked for permission to record the interview. Permission was requested from all interviewees to disclose the findings in the final thesis. Information gathered from interviews was stored on the author's private laptop. The results from this research were not predicted to be harmful in any way to the reputation, dignity or privacy of the interviewees. Permission was granted to disclose information gathered in this research and all interview findings were anonymized to protect the participants' identities.

## **1.6 Audience**

The intended audience of this research is proactive companies that are considering investing in forestry carbon offset or inset projects and who wish to be in a more informed position from which to make investment decisions. This research also aims to interest researchers in the field of global climate governance at the firm level by providing more knowledge regarding current business decision-making practice and stakeholder acceptance related to forestry projects.

## 1.7 Thesis Structure

This thesis proceeds as follows:

*Chapter 1* presents the nature of the problem addressed in this research and the specific aim and research questions addressed. Research limitations and scope, ethical considerations and the intended audience are described.

*Chapter 2* provides a more detailed background of some of the concepts mentioned in the introduction. This chapter is intended for those readers who are less familiar with business' role in climate change action, carbon insetting and the voluntary carbon market.

*Chapter 3* presents the rationale and methodology used for conducting a multi-case research design using qualitative data collection and analysis methods. It details the process used by the author to collect information through a practitioner review as well as through semi-structured interviews.

In *Chapter 4* (literature review), a more thorough analysis of the immediate field of corporate climate compensation is presented.

*Chapter 5* develops a comprehensive review of the main concepts and theories on stakeholders and legitimacy.

Next, *Chapter 6* presents the main results and analysis of this research.

*Chapter 7* presents and discusses the significant research findings and their implications and answers to the two stated research questions. This chapter highlights the research contribution to the field of corporate climate compensation, explicitly focusing on forestry-related initiatives. This chapter also provides remarks on the methodology.

Finally, *Chapter 8* presents the main conclusions of the research, provides recommendations for proactive companies looking to develop credible environmental targets and strategies that involve forestry-related compensation activities, and outlines several areas for future research.

## 2 Background

This section is intended for readers who are less familiar with some of the concepts mentioned in the introduction including businesses' role in climate change action, carbon insetting and the voluntary carbon market including the Paris Agreement and 1.5°C pathway.

### 2.1 Business' role in climate change action

Businesses are major CO<sub>2</sub> emitters and can thus help in reducing the global environmental impact of contemporary society by acknowledging and taking responsibility for their wider environmental and social impacts (Carballo-Penela & Castromán-Diz, 2015; Dahlmann et al., 2019). In 2017, the Carbon Majors Report and dataset uncovered that just 100 companies have been the source of more than 70% of global GHG emissions since 1988 (Griffin, 2017; Riley, 2017). Moreover, the world's largest 500 global companies are reported to generate, in aggregate, more than 2.5 gigatons of GHG emissions each year, more than any country excluding China and the US (WWF, 2020b). The rather recent and heightened awareness of global energy consumption's impact on environmental degradation, pollution and GHG emissions has increased public concern and created a growing sense of responsibility for its reduction (Dhanda & Hartman, 2011). As businesses are significant contributors to climate change, they are increasingly under pressure to take action and make meaningful changes to their current unsustainable business models and practices (Dahlmann et al., 2019). Furthermore, the increasing level of stringency of environmental policies and regulations, more burdensome legal liabilities for environmental damage and more demanding customers, means managing a company's environmental impact is essential if a company is to remain competitive in international markets (Berry & Rondinelli, 1998; Epstein & Buhovac, 2014). In the context of global climate governance, high-level politicians have emphasised the vital role business leaders now play in the climate action movement, with "multinational corporations (MNCs) increasingly seen as financial, technical and political partners" (Weber, 2018:619).

Corporate climate-related activities have evolved significantly in recent decades (Weber, 2018), with environmental commitments varying considerably depending on a company's technical, managerial and strategic challenges to operate more sustainably (Delmas & Toffel, 2008). The 1997 Kyoto Protocol and the 2015 Paris Agreement are considered by some to be the main drivers for the rapid changes in corporate responses to climate change (Blum & Lövbrand, 2019; Lee et al., 2015). The field of climate governance is continuously evolving, with new initiatives emerging such as the EU's €100 billion European Green Deal for a climate-neutral EU by 2050 and the European Investment Bank pledging to provide €1 trillion of investment in climate action and environmental sustainability to 2030 (BBC, 2019; EIB, 2019). The threat of tighter regulations and rise of global initiatives such as the UN SDGs, CDP, Forest500 (deforestation) and RE100 (renewable energy) have added to the pressure businesses face to disclose non-financial data, triggering an increase in climate change target-setting (Dahlmann et al., 2019; Hahn et al., 2015; Wright & Nyberg, 2017). Additionally, the IPCC's call to decarbonise the economy has increased the number of companies committing to Science Based Targets (SBTs) to drive ambitious climate action (Ioannou et al., 2016). Businesses have started to acknowledge the scientific concerns and find opportunities to prepare for a carbon-constrained future, while those that reject and oppose climate change lag behind and are exposed to greater risks (Kolk et al., 2008; Weber, 2018).

### 2.2 Carbon insetting

Carbon insetting is a relatively new concept with no universal definition or standard to guide companies on the best way to approach and implement these types of projects. In a study

conducted by the University of Bristol and ICROA<sup>15</sup> (Davies, 2016), two very different definitions of insetting were identified. First, insetting was defined as a direct extension from offsetting, with the only difference being the location of the carbon offset. A second definition was: “any investment within a company’s supply chain that generates environmental, social or corporate value” (Davies, 2016:6). The International Platform for Insetting (IPI) defines insetting programmes as “environmental programs implemented within companies’ direct sphere of influence (core business and supply chains) so as to generate multiple positive sustainable impacts on climate mitigation and adaptation, soils, water, biodiversity, local communities...” (International Platform of Insetting, 2020). In the same study mentioned above (Davies, 2016), discussions with over 50 individuals and organisations that had insetting investments uncovered four main uncertainties surrounding insetting. These involved 1) the corporate motives for these investments, 2) the intended outcome of insetting projects, 3) the characteristics of management strategy, and 4) the potential for the upscale of its use by private sector companies (Davies, 2016). Appendix B provides a summary of recommendations developed by ICROA for companies desiring to develop an insetting management strategy.

Insetting has also been described as an investment that “combines carbon compensation with effective management of environmental and social resources along the supply chain” (South Pole, 2020:1). This could include “planting trees in agroforestry systems that regenerate the ecosystem upon which the MNC depends” (Weber, 2018:620). Since natural and social resources along global value chains are predominantly located in developing countries, they are more vulnerable to and increasingly under threat from climate change, therefore ignoring these threats could lead to inefficiencies and disruptions in value chains (South Pole, 2020b). As with carbon offset projects, carbon insetting practices are often linked to social sustainability benefits such as improving the livelihoods of suppliers. As these benefits are connected to improvements in the company’s value chain they are considered more beneficial than investments in external projects (offsets) as they offer climate change mitigation and adaptation, and climate finance remains within the company’s value chain (Banerjee et al., 2013; myclimate, 2020). Noticeable co-benefits therefore include improved relations with suppliers and improved security of commodity supply.

## 2.3 Evolution of the Voluntary Carbon Market

This section outlines the historical developments that are important to understand the current situation of the voluntary carbon market. It will briefly discuss the Kyoto Protocol and Clean Development Mechanism (CDM), which developed the building blocks for the voluntary carbon market. This is followed by an explanation of the Paris Agreement and 1.5°C pathway.

### 2.3.1 The Kyoto Protocol and Clean Development Mechanism

The Kyoto Protocol initiated the creation of an international carbon market. The United Nations Framework Convention on Climate Change (UNFCCC) was established in 1992 with the aim of “stabiliz[ing] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (UNFCCC, 1992). In 1997, the convention adopted the Kyoto Protocol, which was signed and ratified by 192 countries committed to limiting or reducing GHG emissions in industrialised countries (“Annex I countries”) (UN, 1998). The Kyoto Protocol established “the first generation of large-scale compliance carbon market mechanisms” (Michaelowa, Shishlov, Hoch, Bofill, & Espelage, 2019:10), including the Clean Development Mechanism (CDM), Joint Implementation (JI) and International Emissions Trading (IET). It set legally-binding

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<sup>15</sup> ICROA: International Carbon Reduction and Offset Alliance

emissions limitation and reduction commitments for 37 industrialised countries (UNFCCC, 2016). The CDM was established to promote mitigation action and sustainable development by allowing Annex I countries to invest in emission reduction projects operating in countries without emission targets (Lang et al., 2019). These emission reductions can be certified under the UN climate regime as ‘credits’ to meet a share of a country’s Kyoto Protocol targets (UNFCCC, 2016; UN, 1998). The CDM has helped reduce over 1,645MtCO<sub>2</sub>e (Hamrick & Gallant, 2018a) and formed a market-based approach to tackle climate change, ultimately creating a blueprint for the VCM (Lang et al., 2019).

### **2.3.2 The Voluntary Carbon Market**

Under the Kyoto Protocol, via the CDM, the compliance-based and voluntary-based carbon markets were born. The compliance carbon market is almost 20 times the size of the VCM and is directly connected to political decisions with verification processes from the UNFCCC (Gaast et al., 2018). In contrast, the VCM is described as a “private sector mechanism in the field of climate governance” (Lang et al., 2019:415), that has evolved outside of the UN climate change regime. Credits originating from the VCM are called Voluntary Emission Reductions (VERs). Initially, the VCM was highly unstructured with project developers defining the measurement and verification of achieved VERs (Hamrick & Gallant, 2018a; Lang et al., 2019). Today there are numerous voluntary standard schemes, standard-setting organisations, third-party verifications and independent carbon credit registries to help structure the VCM (Lang et al., 2019). Since taking off in the early 2000s, over 437.1MtCO<sub>2</sub>e have been reduced, sequestered or avoided from voluntary carbon offsetting projects (Hamrick & Gallant, 2018:4). The number of carbon projects has increased dramatically since the early 2000s, especially in recent years. Hamrick & Gallant (2018) connect this increase to the Paris Agreement and a heightened awareness of climate change leading to businesses committing to reduce their emissions.

### **2.3.3 The Paris Agreement and 1.5°C pathway**

In November 2016, the Paris Agreement entered into force, signed by 195 members of the UNFCCC with a goal to keep global temperature rise to well below 2°C and to support countries dealing with impacts of climate change (Damert & Baumgartner, 2018; UNFCCC, 2019). Since then, the IPCC’s 2018 Special Report further recommended a limit of 1.5°C in order to reach net-zero anthropogenic CO<sub>2</sub> emissions by 2050 (IPCC, 2018). In response to this report, the SBTi has translated the global carbon budget into practically applicable actions for sectors and companies to ensure net-zero is achieved by 2050 (Carillo Pineda & Faria, 2019; SBTi, 2020). Measures that prevent CO<sub>2</sub> from being produced and emitted are more effective in achieving the Paris Agreement’s decarbonisation goals than relying on carbon removal projects alone. However, nearly all pathways that limit warming to 1.5°C “use carbon dioxide removals to some extent to neutralise emissions from sources for which no mitigation measures have been identified” (Carillo Pineda & Faria, 2019:4). These pathways are projected to use removals in the order of 100-1000 GtCO<sub>2</sub> over the 21<sup>st</sup> Century (IPCC, 2018). This means that nearly one ton of CO<sub>2</sub> must be removed for every ton of CO<sub>2</sub> released in the atmosphere throughout the 21<sup>st</sup> Century in order to avoid warming of more than 1.5°C (IPCC, 2019). The sheer scale of carbon removals required to reach this objective emphasises the urgent need for businesses to acknowledge their environmental impact and the role they play in achieving net-zero CO<sub>2</sub> emissions by 2050.

### **3 Research design, materials and methods**

This chapter presents the research design, materials and methods used to gather and process information in order to address the previously established research questions. Section 3.1 justifies the choice of a multi-case study design and use of a conventional qualitative content analysis. Section 3.2 explains the methods used for data collection, the materials collected and how the collected data was interpreted.

#### **3.1 Research design**

Qualitative methods have been used in realising the objective of this research. Specifically, a multi-case research design using conventional qualitative content analysis was used to derive the empirical findings. The research followed a combined inductive and deductive logic of inquiry, where data was collected to derive generalisations (Blaikie & Priest, 2019). A deductive approach was used by the author when analysing what was currently known in the field of climate compensation using carbon credit producing projects. This also included testing these findings and observations via the application of several data collection methods. During the empirical research, the author used an inductive approach to discover new elements influencing corporate investment decisions related to this topic. This process was therefore iterative, and during the research the author remained open to new elements of analysis.

This section will discuss the use of a multi-case approach, the process of case selection, identification of relevant stakeholders, description of qualitative content analysis and the initial literature review method used.

##### **3.1.1 Multi-case approach**

Research for this thesis is divided into two parts: (1) an investigation of current corporate practices surrounding investments in forestry projects as a form of climate compensation; and (2) an exploration of the views and insights of key stakeholders surrounding these decisions. Forestry carbon credit producing projects were chosen as a specific focus to understand how companies navigate multi-criteria decision making and to gain insights into how practitioners, experts in the field and relevant business stakeholders perceive these projects more generally. A multi-case research design was chosen as a reasonable research design for this thesis, where corporate investments in forestry projects for the purpose of meeting ambitious climate targets were considered ‘cases’ for research. According to Gerring (2004), a case is best understood as “an intensive study of a single unit with an aim to generalize across a larger set of units” (Gerring, 2004:352). Using multiple cases in this context helped to uncover the different approaches companies take towards achieving ambitious climate goals and an understanding of the criteria used during the decision-making process.

Using multiple cases can be useful to gain an in-depth understanding of a specific phenomenon (Yin, 2014). Other strengths of this design include its ability to open up new research fields and provide a holistic and real-world perspective of the phenomenon (Gerring, 2004). Furthermore, compared to single-case designs, “the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust” (Yin, 2014:57). This research design also provides high flexibility for the choice of data collection methods. Despite these benefits, there are limitations of this design, including aspects related to social research such as validity (construct, internal and external), reliability and replication (Bryman, 2016; Yin, 2014). The following measures were taken to ameliorate these limitations. Construct validity was pursued through the use of multiple sources of evidence, development of a clear chain of evidence and multiple peer reviews during the research and writing process (Yin, 2014). The present work was discussed and partially



reviewed several times by supervisors and peers during the writing process (see Appendix C for formal review instances). Further, data triangulation was achieved by gathering data from multiple informants and sources (Flick et al., 2004). As shown in Figure 3-1, differing informant sources were utilised in this study to enhance the validity of information gained.

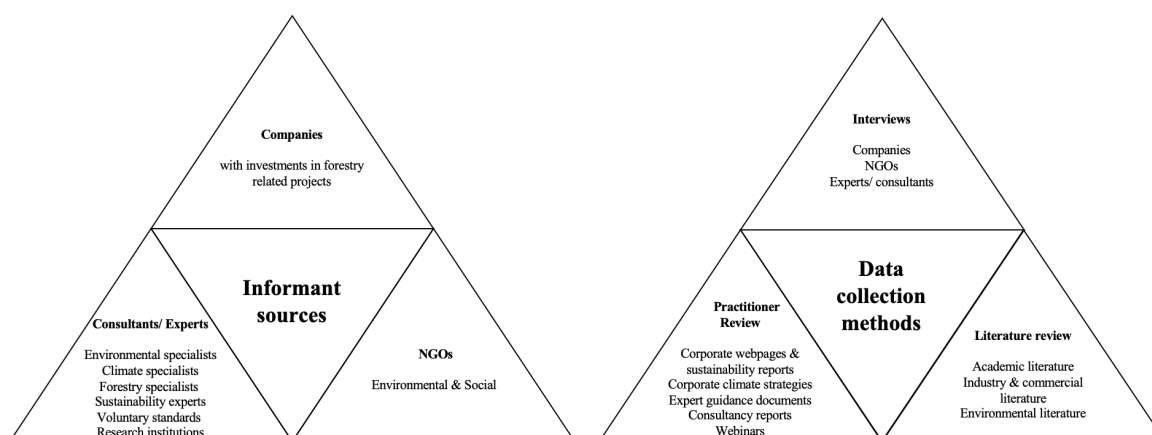


Figure 3-1: Triangulation of informant sources and data collection methods

**Internal validity** was strengthened by drawing upon multiple disciplines to develop a robust research framework as well as triangulation of data sources. Data collection was also pursued with triangulation by using three different methods, as shown in Figure 3-1. **External validity** of the selected cases may be constrained due to the choice of investment approach being context-specific and depending largely on a company's desire and ability to invest in certain projects. That being said, the selected cases aim to represent a group of entities, namely proactive companies and relevant stakeholders, to achieve a certain level of generalisability by drawing upon reports and interviews with different stakeholder groups. **Reliability and replication** of the study were strengthened by the detailed documentation of the procedures followed for the research design, data collection and analysis as well as making the interview guides available; please refer to Appendices D, E and F.

### 3.1.2 Process of case selection

Cases for RQ<sub>1</sub> were identified by referring to the UNGC campaign 'Business Ambition for 1.5°C' as an initial reference point to identify companies with commitments to a zero emissions future. This UNGC campaign targets business and industry leaders to commit to more ambitious climate action. "By taking this pledge [companies] are formalizing [their] increased ambition and signalling [their] commitment to a zero emission future to [their] peers, investors, policy makers, customers, suppliers, civil society organisations and other stakeholders" (UNGC, 2020:1). The 201 signatories to this pledge (as of March 2020), with corresponding sector and headquartered country were entered into a Microsoft Excel spreadsheet. The author then viewed company websites and, if available, scanned the sustainability reports and climate/energy strategies for each of these companies to identify those with investments in forestry-related projects or offsetting and carbon-removal projects more generally. The following search terms were used when scanning company websites and reports: 'offset'; 'credit'; 'carbon'; 'invest'; 'project'; 'tree'; 'forest'. Relevant companies identified through this first screening are presented in Table 3-1, with those specifically mentioning forest-related initiatives indicated.

Table 3-1: Signatories for Business Ambition for 1.5°C identified as relevant by the author (March 2020)

<ul style="list-style-type: none"> <li>▪ Acciona</li> <li>▪ AstraZeneca*</li> <li>▪ Australian Ethical*</li> <li>▪ Bennetts Associates</li> <li>▪ Burberry Plc*</li> <li>▪ Chanel</li> <li>▪ Co-operative Group Ltd.</li> <li>▪ Danone*</li> <li>▪ Elopak AS*</li> <li>▪ Firmenich SA</li> <li>▪ IFF*</li> <li>▪ Ingka Group (IKEA Group)*</li> <li>▪ Inter IKEA group*</li> <li>▪ Intrepid Travel</li> <li>▪ L'Oréal</li> </ul>	<ul style="list-style-type: none"> <li>▪ MaCher (USA) Inc.*</li> <li>▪ Mahindra Group*</li> <li>▪ MacArthur Green*</li> <li>▪ Microsoft*</li> <li>▪ Movida*</li> <li>▪ Nestle*</li> <li>▪ Olam International</li> <li>▪ Orkla</li> <li>▪ Ørsted</li> <li>▪ Salesforce</li> <li>▪ Signify*</li> <li>▪ Sky Group*</li> <li>▪ The Lux Collective Ltd.</li> <li>▪ Unilever*</li> </ul>
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\*forest-related initiatives mentioned on company webpages and/or in reports.

Companies in Table 3-1 were reviewed further and those with limited information regarding their strategies and initiatives were removed from the final list. Additional companies identified by the author through the literature review and through conversations with the supervisor at Tetra Pak were included in the final list of companies to review and contact, see Table 3-2. Some of these additional companies were Tetra Pak’s key customers or important retailers that it expressed interest in learning more about. Reflecting Tetra Pak’s interest in understanding the current landscape of forestry initiatives, those with investments in forestry-related projects were prioritised over those investing in other offsetting practices. Additionally, companies with ambitious climate targets for 2030 were prioritised over those with climate targets for 2050 due to Tetra Pak’s interest in companies taking immediate climate action and the justification that by 2050 there would likely be different methods available for companies to address residual emissions (Environment Specialist, Tetra Pak, personal communication, February 24, 2020).

Table 3-2: Final list of companies reviewed and contacted for interviews with sector (RQ<sub>1</sub>)

Company	Sector	Company	Sector
<b>Arla Foods</b>	Food & beverage processing	<b>Microsoft</b>	Software & services
<b>AstraZeneca</b>	Biopharmaceuticals	<b>Movida</b>	Transport
<b>Australian Ethical</b>	Diverse financials, insurance	<b>Nestlé</b>	Food & beverage processing
<b>Danone</b>	Food & beverage processing	<b>Patagonia</b>	Textiles & apparel
<b>Elopak</b>	Containers & packaging	<b>Signify</b>	Electrical equipment, lighting
<b>H&amp;M Group</b>	Textiles & apparel	<b>Sky Group</b>	Media
<b>IKEA Group</b>	Retailing, furniture	<b>Unilever</b>	Consumer products & durables
<b>MacArthur Green</b>	Professional services	<b>Valio</b>	Food & beverage processing

### 3.1.3 Identification of stakeholders

Relevant stakeholders for RQ<sub>2</sub> were identified through the practitioner review and during meetings with the supervisor at Tetra Pak, these are presented in Table 3-3. For more information about each of these stakeholders, please see Appendix G.

Table 3-3: Stakeholder list for RQ<sub>2</sub>

Stakeholder Group	Name
NGOs	  
Global voluntary initiatives and standards	   
Consultants	   

Source: author's collaboration with Tetra Pak. Logos drawn from respective websites<sup>16</sup>

Stakeholders considered pertinent to the present study included NGOs, global voluntary initiatives, voluntary standards, and consultants. These stakeholders were considered 'experts' at the time on matters related to corporate climate compensation to achieve ambitious climate goals. NGOs were selected as they "often play a crucial role in representing the views of specific groups of less economically powerful citizens" (O'Dwyer et al., 2005:761). Additionally, NGOs play an important role in supporting and developing the guidelines that voluntary initiatives, standards and consultants consider and abide by. Global voluntary initiatives were selected as they play an important role in driving ambitious climate action by working closely with multiple stakeholders. For example, the SBTi is a partnership between the CDP, UN Global Compact, WRI and WWF (CDP, 2020c). Gold Standard and Verra's VCS were chosen as they represent two of the largest voluntary GHG programmes available for companies investing in climate and sustainable development interventions (The Gold Standard, 2019; Verra, 2020). Finally, consultants were included as they provide expert advice to companies such as Tetra Pak regarding their pursuit of sustainability, decarbonisation goals and preparation for a low-carbon economy.

<sup>16</sup> [www.greenpeace.org](http://www.greenpeace.org); [www.wwf.org](http://www.wwf.org); [www.forest-trends.org](http://www.forest-trends.org); [www.cdp.net](http://www.cdp.net); [www.sciencebasedtargets.org](http://www.sciencebasedtargets.org); [www.goldstandard.org](http://www.goldstandard.org); [www.verra.org](http://www.verra.org); [www.southpole.com](http://www.southpole.com); [www.guidehouse.com](http://www.guidehouse.com); [www.3degreescompany.com](http://www.3degreescompany.com); and [www.naturalcapitalpartners.com](http://www.naturalcapitalpartners.com)

### 3.1.4 Conventional qualitative content analysis

This research follows a conventional qualitative content analysis. According to Hsieh and Shannon (2005, p.1278), qualitative content analysis is defined as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns”. The goal of this type of research design is “to provide knowledge and understanding of the phenomenon under study” (Downe-Wamboldt, 1992:314). It is a relatively flexible research method and therefore, approaches to data collection can be adapted to the specific researcher. For this research, text used to code was derived from a variety of methods including interviews, print media and narrative responses in numerous forms, including print, verbal and electronic (Hsieh & Shannon, 2005). Content analysis offers numerous benefits including the high level of flexibility for data collection as well as the access to “direct information from study participants without imposing preconceived categories or theoretical perspectives” (Hsieh & Shannon, 2005:1280). Limitations include the amount of time required to code data and the types of statistical procedures that work effectively with the data (Downe-Wamboldt, 1992). The author used multiple synthesis matrices to reduce and simplify the data and to identify common themes and concepts within the sources of relevant literature; this is explained further in Section 3.2.1.

### 3.1.5 Literature review

A literature review was conducted to provide background and context for the research and to establish a bridge between the project and the current state of knowledge on the topic (Blaikie & Priest, 2019). The reviewed literature included peer-reviewed journal articles, grey literature, practitioner reports, official documents and news articles accessed by the end of April 2020 using Lund University library tools (i.e. LubSearch), Google Scholar, MarketLine and ScienceDirect. The author used a snowballing method where relevant literature was identified by consulting the reference list of key documents to find additional references as well as through systematically looking for citations within the literature (Wohlin, 2014). Since the Paris Agreement has influenced the way businesses disclose non-financial information (Lang et al., 2019), literature after 2015 was prioritised for research on proactive environmental management and initiatives. For both the academic and grey literature review, documents from a range of disciplines were analysed to ensure a comprehensive understanding of the topic and triangulation of data to ensure validity of the research (Flick et al., 2004). This process was iterative in nature, and changes were made as more knowledge was gained.

The topics reviewed by the **academic literature** provided an understanding of:

- (1) the history and evolution of the voluntary carbon market and why there is current uncertainty surrounding the future of corporate climate compensation through carbon credits;
- (2) the developing area of global climate governance and how this relates to governance at the firm level; and
- (3) the key aspects of stakeholder theory and legitimacy theory and how they relate to corporate climate compensation and social and environmental disclosure.

The topics reviewed in **grey literature** provided an understanding of:

- (1) the current state of voluntary corporate carbon offsetting and insetting, the types of projects that exist, the current size of the compliance and voluntary carbon market and background specific to forestry and A/R projects; and
- (2) the important actors operating within the field of corporate climate compensation.

### 3.2 Data collection and analysis

This section presents the methodologies used for data collection and analysis. Data collection followed a two-tiered approach that involved a review of grey literature and practitioner reports as well as a set of semi-structured interviews with nine experts and practitioners (See Appendix H for the full interview list). Each of the research questions used different data collection methods; these are detailed in Figure 3-2. As specified in Figure 3-2, ‘relevant’ company and organisational representatives refers to respondents with sufficient knowledge to answer the research questions. Interviewees were senior leaders such as managers, directors or specialists in a climate or carbon related position; it was therefore deemed that their responses were credible, and they were therefore ‘relevant’ interview candidates.

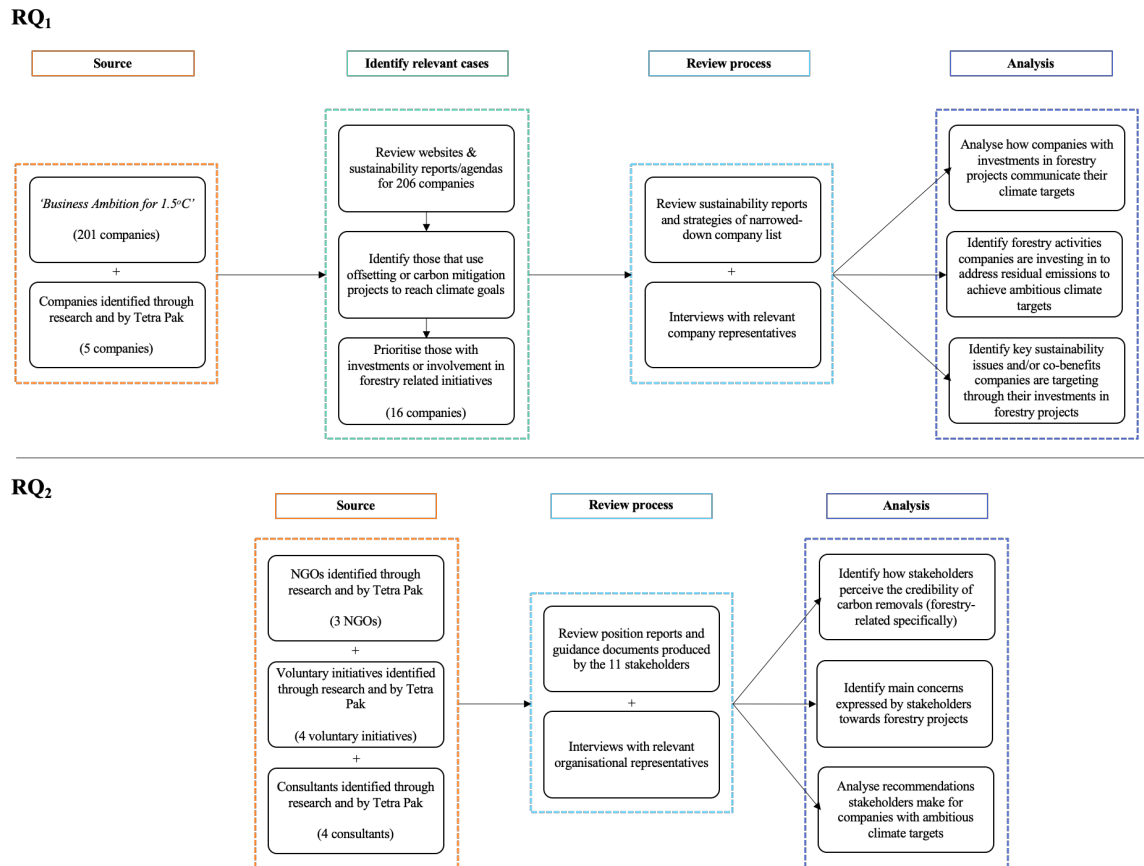


Figure 3-2: Methodology for data collection

#### 3.2.1 Practitioner review

An extensive practitioner review was conducted to understand 1) how industry practices have evolved and currently align with the current academic knowledge identified in the previous literature review and 2) how stakeholders perceive these industry actions. To achieve this, practitioner reports, guidance documents, corporate sustainability reports, NGO publications and webinars were reviewed to gather secondary data (see Appendix I for webinar list). These reports, documents and webinars were either recommended by academic and industry professionals or identified by the author through online research using the same search tools mentioned in Section 3.1.5. The author’s supervisor at Tetra Pak provided several practitioner reports and internal documents from relevant stakeholder groups (e.g. from WWF, CDP and SBTi) – these served as both immediate data sources and as examples of relevant data sources.

The topics reviewed provided:

- (1) a summary of how corporate climate targets are being communicated; what guidance companies are following; a summary of general climate mitigation actions used; specific forestry-related initiatives being implemented or considered; what sustainability issues and/or co-benefits were associated with these projects; and
- (2) an understanding of the current recommendations provided by the selected NGOs, voluntary initiatives and consultants for corporations setting net-zero or similar targets.

To analyse the data, all sources of data were systematically computed into two different synthesis matrices within Microsoft Excel; one for each RQ: 1) MNC actions to achieve ambitious climate targets and 2) stakeholder positions/guidance on these actions. By entering information into the excel spreadsheet, data was reduced and displayed simply, enabling the author to identify common themes and concepts within all sources of relevant literature. As additional literature was identified, the synthesis matrix was adjusted.

### 3.2.2 Semi-structured interviews

Semi-structured interviews were used as a qualitative data collection method due to their flexibility. Gathering independent views, thoughts and opinions from a variety of stakeholders was deemed valuable to the study and justified the use of semi-structured interviews with open-ended questions. Semi-structured interviews also allow the interviewee to elaborate and introduce new perspectives that may have been overlooked by the researcher. The author's objective was to 1) understand the decision-making process companies make when selecting a forestry initiative to invest in and 2) derive stakeholder perspectives regarding these projects. Due to the choice of multi-case study design and the research questions, data collection relied on interviewees as key informants.

Interviewees were identified based on their involvement with corporate climate compensation. For RQ<sub>1</sub>, interviewees were sustainability managers or environmental experts working for the companies presented in Table 3-2. For RQ<sub>2</sub>, interviewees were climate business experts, forest and climate specialists and associate directors working for NGOs or consultants presented in Table 3-3. See Appendix H for the final interview list.

**Interviewee selection for MNCs** was guided by the following considerations:

- (1) their commitment to the UNGC Business Ambition for 1.5°C pledge; and/or
- (2) their involvement in setting ambitious net-zero/carbon neutral/ climate positive goals where forestry-related initiatives were used to realise climate objectives.

**Interviewee selection for NGOs** and other **experts** in the field was guided by the following considerations:

- (1) their involvement with corporate climate compensation; and
- (2) their previous or existing working relationship with Tetra Pak.

## 4 Literature Review

This chapter delineates the research and industry practice frontier by reviewing relevant published literature available on the topic of corporate climate compensation in a global climate governance setting. The literature review is structured along four subsections. Subsection 4.1 outlines the current knowledge related to corporate engagement in global environmental governance. Subsection 4.2 presents a selective review of the rise in corporate carbon strategies in response to climate change. Next, subsection 4.3 gives a detailed overview of forest governance at firm level. Finally, subsection 4.4 reviews drivers for corporate investments in carbon projects.

### 4.1 Corporate engagement in global environmental governance

Non-state actors have grown in relevance in recent decades becoming highly influential in shaping global environmental governance (Falkner, 2003; Pattberg, 2005; Weber, 2018). Regarding climate change, “private governance arrangements are expected to become a central pillar of the post-Paris regime” (Weber, 2018:622). Drawing on global climate governance literature, Weber (2018) distinguishes between two categories of corporate engagement in global governance: (1) governance *with* governments and (2) governance *without* governments; this is demonstrated in Figure 4-1.

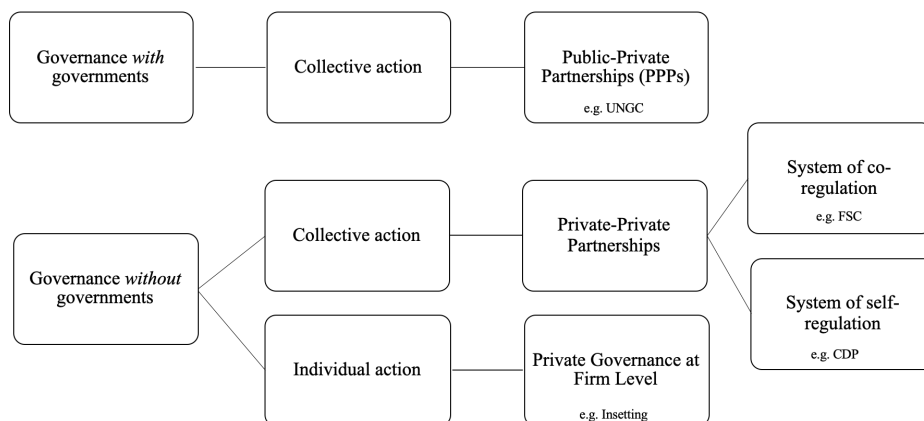


Figure 4-1: Corporate engagement in global governance

Source: adapted from Weber (2012), p.622

The former category includes collective action and institutionalised collaborations with governmental bodies, i.e. public-private partnerships (PPPs) such as the UN Global Compact, a voluntary corporate sustainability initiative aimed at encouraging responsible corporate behaviour (UNGC, 2020c). These private initiatives are dependent on the public sphere (Weber, 2018). Alternatively, the second category operates outside of the state system and includes private-private partnerships with systems of self-regulation and co-regulation. An example of co-regulation is the Forest Stewardship Council (FSC), a multi-stakeholder initiative developed to establish third-party certification and set standards regarding forestry (FSC, 2020b). Individual action and the grouping of ‘private governance at firm level’ also fall within this second category. Carbon insetting is an example of private governance at firm level, where companies undertake activities independently of other actors. This means the “formulation of rules, norms and standards as well as guidelines for their implementation is not transferred to an external body” (Weber, 2018:623). Falkner (2003) describes private

governance as more than just cooperation between private actors, requiring the “adjustment of individual behaviour to achieve mutually beneficial objectives” (Falkner, 2003:73). Despite individual and unilateral action becoming increasingly important for companies, this area is much less researched than both industry and cross-industry self-regulation (Pattberg, 2005).

There is a growing willingness of environmental NGOs to engage in a constructive dialogue with corporations and participate in efforts to establish private governance mechanisms (Falkner, 2003). This has created a new form of independence between corporations and NGOs, as seen in the development of the GHG Protocol by the WRI and subsequent use of GHG inventory in-line with this methodology, for example in initiatives such as Science Based Targets (SBT). As companies begin exploring new initiatives within private-private partnerships and private governance at firm level, these multi-stakeholder partnerships are anticipated to play a role in influencing the development of corporate carbon management approaches and strategies (Epstein & Buhovac, 2014). The concept of carbon strategies, management and activities will be discussed further in Section 4.2.

## 4.2 Corporate carbon strategies in response to climate change concerns

The intensification of climate change’s impact on economic and business circles in the past decade has led to companies recognising their carbon consumption and overall strategic positioning (Lee, 2012). By adopting environmental management and carbon strategies, Dahlmann et al. (2019) found that businesses can pre-empt or better respond to regulatory pressures, reduce costs by eliminating waste, attract environmentally conscious stakeholders, and build and maintain legitimacy among external stakeholders. The concepts of legitimacy and stakeholder salience will be further expanded upon in 5. Regarding environmental management and carbon strategies, companies can be reactive or proactive (Carballo-Penela & Castromán-Diz, 2015; Hunt & Auster, 1990). Environmental reactivity is understood as “only implementing the minimal compulsory changes to meet regulations” (Carballo-Penela & Castromán-Diz, 2015:804). Reactive companies are driven by factors such as avoiding penalties for non-compliance and negative reputation. In contrast, proactive companies go beyond regulatory requirements and actively implement voluntary environmental initiatives (VEIs) intended to improve environmental performance (Aragón-Correa & Rubio-López, 2007). VEIs are not mandated by governmental regulations but can be used to adhere to their requirements (Christmann & Taylor, 2002). Proactive environmental management has been described as an “urgent, profitable and sustainable way for firms to deal with the natural environment” (Aragón-Correa & Rubio-López, 2007:357).

Carbon management strategies, or “those activities in which companies engage to respond to climate change” (Lee, 2012:35), are increasingly being researched to understand the typical strategic options available for corporations. Some studies have focused on firms’ efforts to reduce emissions through GHG emission management<sup>17</sup> (Hoffman, 2008), while others have focused on corporate carbon footprints (Weinhofer & Hoffmann, 2010). Researches have emphasised the need to improve supply chain measures and product design (Weinhofer & Hoffmann, 2010) while others have described the opportunities available for firms to create new products and markets (Sprengel & Busch, 2011). Lee (2012) identifies a comprehensive list of six carbon management activities available to firms responding to climate change; these are detailed in Table 4-1. These classifications incorporate carbon measures from previous

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<sup>17</sup> For example, emission reduction in the manufacturing process or design of less carbon-intensive products.



research and include practices related to processes, products, supply chains, organisations and systems and external relationships (Lee, 2012).

Table 4-1: Corporate carbon management activities

Carbon management activity	Description
<b>Emission reduction commitment</b>	<ul style="list-style-type: none"> <li>▪ Set carbon reduction targets with clear measures to achieve them;</li> <li>▪ Quantify the corporate carbon footprint</li> </ul>
<b>Product development</b>	<ul style="list-style-type: none"> <li>▪ Focus on developing ‘greener’ and more energy-efficient products;</li> <li>▪ Reduce environmental impact across the value chain</li> </ul>
<b>Process and supply improvement</b>	<ul style="list-style-type: none"> <li>▪ Process improvement and supply chain measures;</li> <li>▪ Investment in more efficient production equipment and processes;</li> <li>▪ GHG inventory and improved housekeeping</li> </ul>
<b>New market and business development</b>	<ul style="list-style-type: none"> <li>▪ Awareness of opportunities for improved energy efficiency;</li> <li>▪ New market and product combinations;</li> </ul>
<b>Organisational involvement</b>	<ul style="list-style-type: none"> <li>▪ Awareness of the impact of firms’ activities on climate change;</li> <li>▪ Involvement in climate change initiatives</li> </ul>
<b>External relationship development</b>	<ul style="list-style-type: none"> <li>▪ Emission trading on the compliance market (CDM);</li> <li>▪ Participation in voluntary programs with governments, NGOs, local communities, CDP, global financial institutions and carbon offset projects;</li> <li>▪ Making GHG emission data available to the public.</li> </ul>

Source: adapted from Lee (2012), p.35-36

The scholarly field of business and the natural environment has increased research on how organisations respond to climate change, with academics, practitioners and policymakers recognising the importance of proactive environmental management (Potrich et al., 2019; Wright & Nyberg, 2017). Various taxonomies propose different levels of environmental proactivity (Aragón-Correa & Rubio-López, 2007). Businesses adopting voluntary strategies are associated with higher efficiency, social reputation, customer preference, improvement of organisational efficiency and higher competitiveness (Alberto Aragón-Correa & Rubio-López, 2007; Berry & Rondinelli, 1998). Furthermore, Lee, (2012:37) states: “firms with no emission reduction targets are less likely to engage in emission reduction commitment activities than those with clear targets and specific measures for achieving them”. Research has found a positive relationship between environmental disclosure and corporate financial performance (Albertini, 2013). Additionally, a company’s image can be improved with proactive climate-related measures, carbon disclosures, and climate-friendly products (Sullivan & Gouldson, 2012). Pressure to reduce emissions can lead to improved carbon management and can also help companies manage natural and regulatory risks associated with climate change (Hahn et al., 2015a). Lee (2012) summarises various strategic options for firms to address climate change and emphasises the importance of integrating climate change issues into their strategic management process to better manage business risks associated with climate change issues. At the same time, it is important to involve the entire organisation in approaching carbon

strategies to minimise risk of negative impacts on profitability if employees lack the motivation to achieve reduction targets (Lee, 2012).

As discussed in Section 4.1, corporations are beginning to undertake new roles independently of other government actors and multi-stakeholder partnerships with environmental NGOs are increasingly being formed. Moreover, as outlined in Section 4.2, environmental management and carbon strategies are vital in today's climate and can provide numerous advantages to a firm. A company can undertake numerous carbon management activities to address its carbon footprint. Next, the idea of forest governance at firm level is discussed to provide background into the importance of forests in combatting climate change.

### 4.3 Forest governance at firm level

This section outlines the importance of forests in climate change action. This is followed by a summary of corporate forestry policies and activities identified through the literature. Finally, some more recent developments in global forestry initiatives are discussed.

#### 4.3.1 Importance of forests in combatting climate change

As mentioned in the introduction, carbon credits produced by projects that fall within the 'forestry and land use' category have grown significantly in recent years. The volume of offsets associated with REDD+ (Reducing Emissions from Deforestation and Degradation, plus enhancement of carbon stocks) increased by 187% between 2016-2018 from 10.6MtCO<sub>2</sub>e to 30.5MtCO<sub>2</sub>e (Forest Trends' Ecosystem Marketplace, 2019). The substantial increase in offsets from forestry projects is likely driven by the awareness that deforestation and forest degradation are responsible for approximately 25% of global anthropogenic GHG emissions, making this the second leading cause of climate change (Forest Carbon Partnership Facility, 2018; IPCC, 2019b). Further motives for corporate investments in voluntary carbon projects are discussed in Section 4.4. Since 2000, there has been a loss of around 70 million hectares of forests, resulting in devastating effects to biodiversity, water quality and the health of forests, croplands, mangroves, grasslands and wetlands (United Nations, 2020). Despite this knowledge, deforestation rose in 2019 (Forest 500, 2019). Corporate activities that involve any of the four 'forest risk commodities' – namely cattle, soy, palm oil and timber – have been identified as the leading driver of deforestation in Southeast Asia and Latin America with further drivers of deforestation linked to other commodities such as coffee, cocoa, rubber and sugar (Boucher et al., 2011; Weber, 2018).

Tree planting and better land and forest management are proposed as a solution to restore local ecosystems by improving the capture of carbon from the atmosphere, fertilising soil, protecting biodiversity and supplying firewood and timber (United Nations, 2020). Recently, forestry projects are referred to as 'nature based solutions' (NBS), or "climate change solutions that lock up carbon in the world's forests, grasslands and wetlands" (World Economic Forum, 2020b). In the 2019 IPCC Special Report on Climate Change and Land, the important role that NBS play in solving the global climate crisis is highlighted with estimates that "NBS can provide up to one-third of the emissions reductions required by 2030 to meet the Paris Agreement targets" (World Economic Forum, 2020b:1). Climate change adaptation and mitigation response options presented in the 2019 IPCC Special Report on Climate Change and Land include, among others, improved and sustainable forest management, reduced deforestation and degradation, afforestation and reforestation as well as agroforestry. These forestry projects are associated with multiple ecosystem services and functions and have the potential to contribute to sustainable development positively (IPCC, 2019b).

### 4.3.2 Corporate forestry policies and activities

In relation to corporate forest governance, Weber (2018) developed a list categorising corporate policies and activities that are usually performed at firm level and that respond to issues associated with forest risk commodities and other drivers of deforestation. The policies were divided into three main categories: (1) sourcing policies involving ecological sustainability, (2) restoration policies involving ecological sustainability and (3) community projects involving social sustainability. These are summarised in Table 4-2.

Table 4-2: Corporate forestry policies and activities

<b>Sourcing Policies</b>	<ul style="list-style-type: none"> <li>▪ Prevent deforestation</li> <li>▪ Protect intact forests</li> <li>▪ Protect high carbon stock forests</li> <li>▪ Protect high conservation value areas</li> <li>▪ Prevent development on peatlands</li> <li>▪ Responsible use of forest resources</li> <li>▪ Responsible management of new plantings</li> <li>▪ Further commodity-specific activities</li> </ul>
<b>Restoration Policies</b>	<ul style="list-style-type: none"> <li>▪ Afforestation and reforestation</li> <li>▪ Forest landscape restoration, including peatland restoration</li> </ul>
<b>Community Policies</b>	<ul style="list-style-type: none"> <li>▪ Prevent the exploitation of people and local communities</li> <li>▪ Respect land tenure rights</li> <li>▪ Respect human rights</li> <li>▪ Respect indigenous rights</li> <li>▪ Resolve complaints and conflicts with local communities</li> <li>▪ Support sustainable livelihoods through education and infrastructure programmes</li> </ul>

Source: adapted from Weber (2018) p.625

As demonstrated in Table 4-2, there are various corporate policies and activities available for firms, with corporate decisions influenced by the type of sustainability impact being targeted. Weber (2018) found that corporate forestry commitments differed significantly in ambition, degree, detail and scope between 250 companies listed in a Forest 500<sup>18</sup> project. These differences existed within and between industries. Those companies operating in the timber and palm oil supply chain reported much higher commitments to deforestation-free supply chains than companies operating within the cattle, soy and pulp and paper supply chain. These results can be explained by the highly visual and publicised attention timber and palm oil receive and how negative public attention often triggers a reaction from companies (Forest 500, 2019; Weber, 2018). Furthermore, as evident in the ‘community policies’ row of Table 4-2, firms have a range of social sustainability issues to take into consideration if they are to invest in a forestry project in a foreign country. In the past, some projects have led to increased demand for land conversion and thus have been associated with social concerns such as land-rights issues; therefore, considerations of the local environmental and socio-economic conditions are essential for the successful implementation of forestry projects (IPCC, 2019b).

<sup>18</sup> Forest 500 annually assesses the world’s most influential companies and financial institutions operating in forest-risk supply chains “on the strength and implementation of their deforestation commitments and policies” (Forest 500, 2019:6).

### 4.3.3 Evolving global forestry initiatives

Forest governance is a rapidly evolving field with global forestry initiatives continually expanding and developing. For example, in January 2020, The World Economic Forum launched ‘1t.org’, a global multi-stakeholder platform for “the conservation and restoration of one trillion trees within this decade” (World Economic Forum, 2020a). This platform supports the UN Decade on Ecosystem Restoration 2021-2030, led by the United Nations Environmental Programme (UNEP) and the Food and Agriculture Organisation of the United Nations (FAO), to promote ecosystem restoration of 350 million hectares of terrestrial and aquatic ecosystems between now and 2030 (United Nations, 2020). These restoration efforts are estimated to remove between 13 and 26 gigatons of GHG emissions from the atmosphere leading to substantial benefits to ecosystem services (United Nations, 2020). Furthermore, in 2011 the Bonn Challenge was launched by the Government of Germany and the International Union for Conservation of Nature (IUCN). It was initially a global commitment to restore 150 million hectares of land globally by 2020 and has since been extended to 350 million hectares by 2030 (IUCN, 2020). In order to achieve this objective, multiple country-led initiatives have been developed, for example, Initiative 20x20, to restore 20 million hectares of land in Latin America and the Caribbean by 2020 and AFR100, to restore 100 million hectares of land in Africa by 2030 (World Resources Institute, 2013).

### 4.3.4 Challenges surrounding corporate forestry commitments

Despite the apparent rise in corporate forestry initiatives, in 2019, Forest 500 found a lack of deforestation-prevention action from almost half of the most influential companies and financial institutions with forest-risk supply chains. This was described as “preventing the necessary sector-wide change” (Forest 500, 2019:3). In their most recent (2019) annual report, Forest 500 reported a ‘commitment failure’ with numerous companies quietly dropping previous commitments. In the assessment, Forest 500 found that 48% of companies with commitments were not reporting on the progress they make to achieve commitments, and 68% of financial institutions had no deforestation policies at all. Even though this report indicates a lack of voluntary corporate commitments and reporting regarding deforestation and corporate progression, it emphasises the vital role these commitments play in eliminating commodity-driven deforestation. Such voluntary environmental commitments and initiatives can “raise the bar higher and faster than legislative measures, and in places where environmental governance is weak or being rolled back” (Forest 500, 2019:4). Moreover, Forest 500 argue that the on-going failure of companies to acknowledge the deforestation in their supply chains requires a more stringent and robust system where companies are penalised for (1) not publicly recognising their role in deforestation and (2) not being transparent in how they will and are progressing towards a deforestation-free supply chain.

This section has outlined the vital role forests play in capturing and sequestering carbon. Tree planting and better land management are proposed by experts as effective methods to combat climate change. As such, companies involved with forest risk commodities are increasingly acknowledging their impacts on deforestation. Those more exposed to public scrutiny for lack of meaningful action are found to be more active in forestry-related initiatives than others. Finally, global forestry initiatives are constantly emerging, and there is a need for more severe penalties for companies that are un-transparent about their forestry initiatives. Next, drivers for investing in voluntary carbon projects are discussed.

## 4.4 Drivers for corporate investments in voluntary carbon projects

As outlined in Table 4-1, companies can undertake a wide range of carbon management activities to address their carbon footprint. Companies are increasingly engaging in forestry-

related projects such as investing in forestry carbon offsets. This section will look at some of the drivers for these corporate actions.

In a 2014 study conducted by ICROA and Imperial College London, 72 businesses were surveyed to 1) understand motivations and barriers related to investing in offsetting programmes and 2) quantify the co-benefits delivered by voluntary carbon offset projects (ICROA, 2018; Kountouris et al., 2014). The study found that buyers of offsets ranked reputation/brand image, employee engagement and market differentiation as the three highest motivators of investment. These findings are similar to those of Weber (2018) who found that motives for forest governance, such as participating in carbon insetting and offsetting projects, included preventing reputational damage, building resilience and assuming ethical responsibility. In ICROA's 2014 study, 67% of the companies surveyed reported positive and tangible business benefits related to reduced energy consumption and costs, improved client retention and employee engagement. Furthermore, when asked about which projects companies prefer and why, the most common responses included relevance to business and co-benefits. In addressing the second objective, a survey was conducted between project developers of voluntary offset projects with an accumulated portfolio of 32MtCO<sub>2</sub> per year. This study found that every 1 tonne of CO<sub>2</sub> offset can add up to \$664 in additional economic, social and environmental benefits for local communities around the world. These co-benefits include job creation, household savings, environmental conservation, technology improvements, local training and infrastructure, health benefits and positive impacts on water resources.

In 2016, a second study concerning private investments in voluntary carbon projects was conducted by ICROA and Imperial College London (Kountouris & Tan Loh, 2016). The Benefit Transfer (BT)<sup>19</sup> method was applied to evaluate co-benefits of three types of carbon offset projects: REDD+ forestry, efficient cookstoves, and biogas. The BT method used existing values of environmental services and social welfare of carbon offset projects identified in academic and grey literature. An example of additional added value (in USD) from each of the three projects is given in Tables 4-3, 4-4 and 4-5.

*Table 4-3: Value derived in economic, social and environmental benefits from an example REDD+ project*

Community and project sustainability fund	Income generation	Employment creation	Time saving	Ecotourism	Ecosystem services	Improved health
\$9,437	\$9,759	\$24,917	\$73,141	\$887,363	\$2,041,232	\$5,464,475
Carbon emissions are reduced by 6,550,464 tonnes each year.						
<b>Total added value = \$8,502,324</b>						

*Source: adapted from Kountouris & Tan Loh (2016).*

<sup>19</sup> The Benefit Transfer method is "used to estimate the economic values of ecosystem services by transferring available information from studies already completed in another location and/or context" (King & Mazzotta, 2000).

Table 4-4: Value derived in economic, social and environmental benefits from an example cookstove project

Skills & jobs	Cooking time saving	Forest conservation	Fuel savings	Improved health
\$2	\$21	\$58	\$94	\$548
<b>For every 1 tonne of CO<sub>2</sub> reduced, total added value = \$724</b>				

Source: adapted from Kountouris & Tan Lob (2016).

Table 4-5: Value derived in economic, social and environmental benefits from an example biogas project

Employment creation	Forest conservation	Fuel savings	Improved health
\$0.91	\$6	\$21	\$276
<b>For every 1 tonne of CO<sub>2</sub> reduced, total added value = \$304</b>			

Source: adapted from Kountouris & Tan Lob (2016).

The study found that significant benefits to local communities were generated from private investments into voluntary carbon projects. Furthermore, the types and values of co-benefits differed significantly across project types as well as within the same project category. This implied the need to assess co-benefits at a project level and not generalise these benefits across a general category of projects. The study also highlighted the challenges of monetising co-benefits and the limitations in placing an economic valuation on impacts such as female empowerment and improved food security. The key finding from this research is the ability of offset projects to deliver positive impacts on a range of outcomes. These social, environmental and economic co-benefits play a large role in motivating companies to invest in voluntary carbon projects.

In summary, if a company decides to invest in a project that falls into this category, they should be well informed about the impacts such a project can have on local communities, as well as how their critical stakeholders perceive this investment. That is, if the company is serious about their actions and recognises that their salient stakeholders can sanction them in some way for failure to act, they should be public and transparent about their commitments. This is important if the company is to maintain credibility and legitimacy. These concepts will be discussed further in Chapter 5. The literature has also shown that drivers for corporate investments in carbon projects are often centred around reputation and brand image, employee engagement and market differentiation. It has also identified that different corporate actions can achieve a wide range of co-benefits and that these are unique to each project.

This literature review has highlighted the importance of individual corporate actions to manage carbon footprints. Nevertheless, these corporate activities remain under-researched, and therefore there is a gap in the knowledge regarding company-specific actions that are being undertaken as part of corporate carbon strategies to achieve climate targets.

## **5 Theoretical and Conceptual Foundations**

This thesis positions itself broadly within the field of corporate climate compensation. This chapter introduces the fundamental concepts underpinning the research.

### **5.1 Stakeholder theory**

According to stakeholder theory, company actions are influenced by the pressures received and perceived from stakeholder groups (Berry & Rondinelli, 1998; Freeman, 1984; Wright & Nyberg, 2017). Stakeholders have been defined as “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Freeman et al., 2010:25), and also as “groups of constituents who have a legitimate claim on the firm” (Hill & Jones, 1992:133). In literature, these groups are classified as either primary or secondary stakeholders (Clarkson, 1995). Primary stakeholders are those groups vital to the company’s survival such as shareholders, employees, customers and suppliers as well as those external to the firm such as governments and communities. Secondary stakeholders still affect or are affected by the firm; however, they do not engage in transactions with the firm and are thus not essential for its survival. For example, the media and other interest groups that are able to influence public opinion in favour of, or in opposition to a firm’s performance (Clarkson, 1995). Buzzelli (1991) emphasises the importance of firms cooperating with their primary and secondary stakeholders to ensure effective and meaningful environmental management. Wolf (2013) summarises external stakeholders such as governments, customers, suppliers and NGOs, and internal stakeholders such as firm leadership and employees as important in the context of corporate sustainability. Figure 5-1 provides an example of stakeholder groups that might influence or be influenced by a company’s actions specific to climate compensation strategies. In this figure, ‘VEI proponents’ refer to those stakeholders that are influential in the development and implementation of voluntary environmental initiatives (VEIs) such as multilateral organisations (e.g. CDP, GHG Protocol<sup>20</sup>, SBTi, UNFCCC), sectoral organisations (e.g. ACE<sup>21</sup>), consultancies and impact investors.

For a company to remain competitive, stakeholder theory suggests that a firm must consider all groups that can affect the value of the firm. This differs from the more traditional shareholder view that a business’ responsibility is to maximise profits to shareholders and owners (Smith, 2003). As such, it is becoming increasingly common for firms to undertake mapping exercises to identify and model their stakeholder groups (Raum, 2018). Since different stakeholders have different levels of investment and interest in a company, this mapping exercise can help managers identify the level of power, predictability and interest of key stakeholder groups (Newcombe, 2003), in other words, the level of stakeholder salience. Taking a stakeholder approach involves a combination of strategic management, corporate planning, risk management, systems theory, organisation theory and corporate social responsibility (CSR) (Freeman et al., 2010). Each company will have different stakeholder groups included in this map, which will vary over time. Building upon stakeholder theory, Mitchell Agle and Wood (1997) proposed a theory of stakeholder identification and salience; this will be discussed in the next section.

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<sup>20</sup> The GHG Protocol was established by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). It is a “global standardised framework to measure and manage GHG emissions from private and public sector operations, value chains and mitigation actions” (GHG Protocol, 2020).

<sup>21</sup> ACE stands for the Alliance for Beverage Cartons and the Environment. It “provides a European platform for beverage carton manufacturers and their paperboard suppliers to benchmark and profile cartons as renewable, recyclable and low carbon packaging solutions” (ACE, 2020).

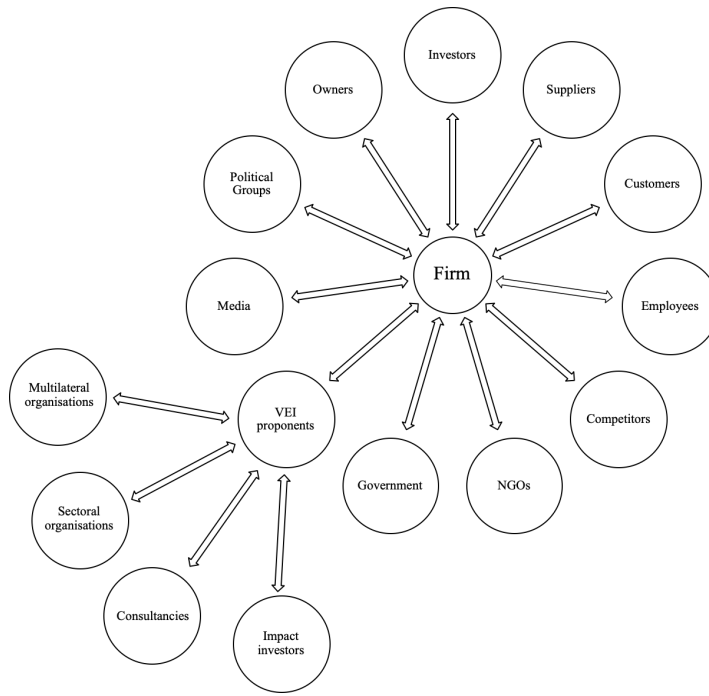


Figure 5-1: Stakeholder mapping for climate compensation strategies

Source: adapted from Freeman (1984), p.55

### 5.1.1 Stakeholder salience

Stakeholder salience theory was first proposed by Mitchell et al. (1997) as a way to explain how managers establish and prioritise stakeholder status and relationships. It proposes a three-factor model to identify key stakeholder classes using the following attributes – power, legitimacy and urgency. As demonstrated in Figure 5-2, a stakeholder group can have one, two or three of these attributes present, which influences the way a manager or an entire firm responds to a stakeholder. The model is dynamic by nature, meaning stakeholders can shift between the three classes, with important effects for managers and the firm itself (Mitchell et al., 1997).

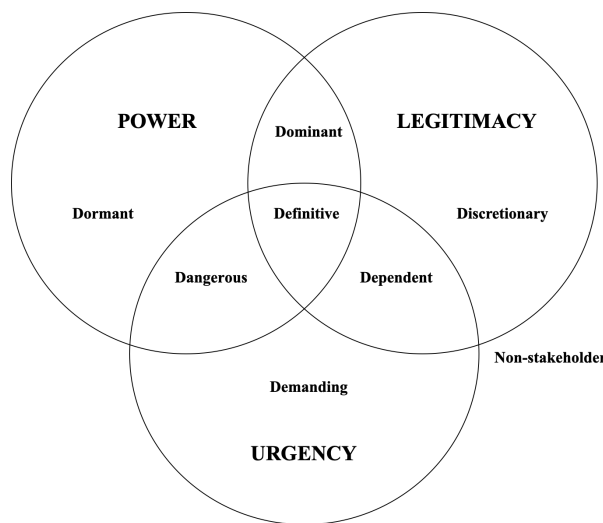


Figure 5-2: Stakeholder salience typology

Source: adapted from Mitchell et al. (1997), p.874



As exhibited in Figure 5-2, the model proposes seven stakeholder types. Those with low salience are referred to as ‘latent’ stakeholders and include dormant, discretionary and demanding stakeholders. As firms have limited resources to track and manage relationships, managers may choose to do nothing about latent stakeholders and instead focus more on those entities holding two or more attributes. Those holding two attributes are referred to as ‘expectant’ stakeholders; these include dominant, dangerous and dependent stakeholders. Highly salient stakeholders are those with a combination of all three attributes – namely ‘definitive’ stakeholders. Those entities with no power, legitimacy, or urgency in relation to the firm are considered non-stakeholders and therefore have no salience according to a firm’s managers. The theory asserts that “stakeholder status is impermanent, and determined through the eyes of the decision-maker” (Magness, 2008:177). This theory emphasises the importance of recognising stakeholder salience. Managers are urged to understand the power and urgency of all entities in their environment “if managers are to serve the legal and moral interests of legitimate stakeholders” (Mitchell et al., 1997:882). Furthermore, misrepresenting or not paying close enough attention to the claims of salient stakeholders can lead to detrimental consequences for a firm.

Climate compensation through carbon credits can be described as a response to stakeholder demand for improved environmental action and disclosure on climate-related information becoming a pressing societal issue (Hahn et al., 2015b). This can also be regarded as a method of risk management where businesses are pre-empting the business, financial and reputational risks of not taking action to improve corporate environmental performance. Referring to stakeholder salience theory, managers should be aware that a claim with no legitimacy at one moment might become legitimate at other times. For example, some latent stakeholders, such as communities or individuals impacted by a business’ actions can gain power in their claims if they find support from more powerful actors such as global environmental and social NGOs or governments. The dynamic nature of this model suggests that managers should remain current in their analysis of stakeholder salience.

As stakeholder groups become more aware of the connection between business performance and environmental quality, businesses experience greater pressure to disclose information regarding their environmental strategies and plans to reduce GHG emissions, often leading to the adoption of proactive environmental initiatives (Berry & Rondinelli, 1998; Wright & Nyberg, 2017). This is especially true as NGOs continue to play a large role in advocating social and environmental interests by increasing international pressure on corporate environmental conduct (Christmann & Taylor, 2002). The ways in which a firm decides to respond to the demands of a stakeholder group will influence whether an organisation adopts a more reactive or proactive environmental strategy (Carballo-Penela & Castromán-Diz, 2015; Hunt & Auster, 1990), as discussed in Section 4.2. Increases in corporate environmental and social disclosure have been studied in detail with legitimacy theory used as the leading paradigm; this is explained further.

## **5.2 Legitimacy theory**

Legitimacy theory offers an explanation of the motivating factors of corporate social and environmental disclosure (Hahn et al., 2015b; Suchman, 1995). It provides a framework to explain why companies may engage in certain disclosures, how they do this, as well as how environmental disclosures may impact the public and community (Mousa & Hassan, 2015). Suchman (1995, p.574) defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”. Legitimacy theory is therefore “a mechanism

that supports organisations in implementing and developing voluntary social and environmental disclosures in order to fulfil their social contract that enables the recognition of their objectives and the survival in a jumpy and turbulent environment” (Burlea Schiopoiu & Popa, 2013, p.1). Disclosing information regarding a firms’ social and environmental performance has been described as the only way a company can uphold their legitimacy to society (Mousa & Hassan, 2015).

Mousa and Hassan (2015) conducted a literature review on the concept and objectives of legitimacy theory and found it to be one of the most prominent theories and dominant perspective used to explain social and environmental disclosure in corporate communication. According to legitimacy theory, voluntary environmental initiatives such as investing in carbon offsets or insets, are a reaction to external pressure from salient stakeholders to take action to improve climate performance and therefore prove the legitimacy of the firm. Legitimacy theory tends to focus on the communication of these initiatives to business stakeholders with a number of studies (Adams et al., 1998; Deegan, 2002; O’Dwyer et al., 2005) finding the annual report to be the most legitimate form of corporate communication available. The annual report has been described as a strategic document that can be used to try and influence stakeholders’ perception of the company (Adams et al., 1998). Communicating corporate initiatives and performance reviews through these more legitimate annual and sustainability reports have become an important and common business practice and one that has been found to “mediate the effect of poor environmental performance on environmental reputation” (Cho et al., 2012:14). Specifically, Mousa (2004) illustrates that using social and environmental reports can help create a good corporate image or reputation; confirm the legitimacy of a firms’ operations; demonstrate regulatory compliance; create marketing benefits from a reputation for environmental protection; and help a firm differentiate from its competitors, this is illustrated in Figure 5-3.

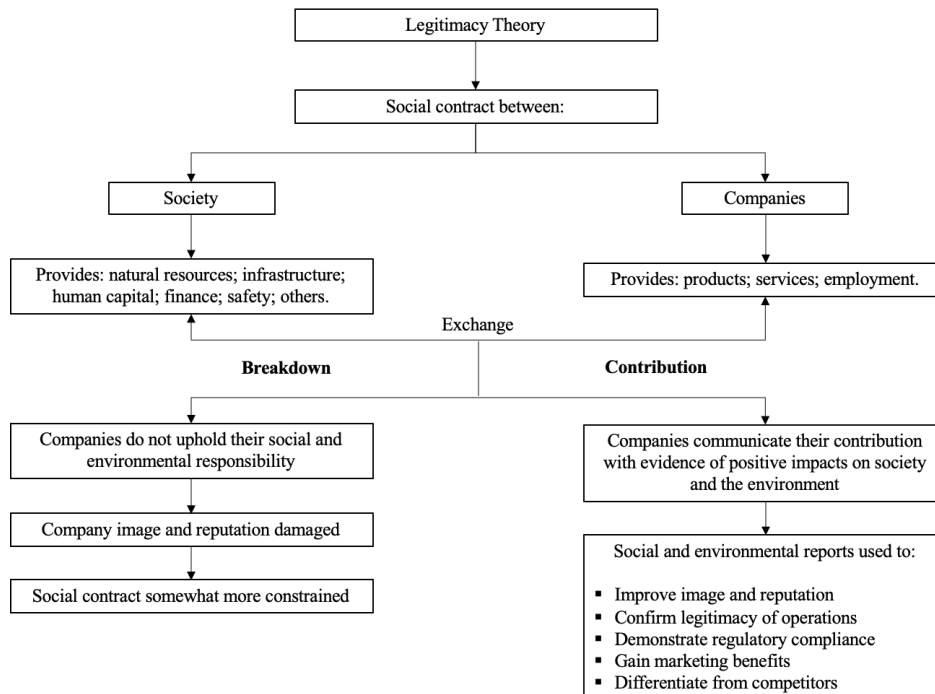


Figure 5-3 Legitimacy theory and corporate social and environmental disclosure

Source: adapted from Mousa (2004), p.124

Legitimacy theory has been used in several studies to explain changes in corporate performance, disclosure and reputation (Cho et al., 2012; A. G. Mousa & Hassan, 2015). For example, Patten (1992) found a significant increase in corporate disclosures in North American petroleum firms after the Exxon Valdez Oil spill in 1989. Du and Vieira (2012) outline the role increased CSR communication plays in the controversial oil industry as a means to obtain legitimacy. Furthermore, Brown and Deegan (1998) argue that media plays a significant role in driving public concern surrounding corporate environmental performance. This is further supported by Barnes (2019), who claims that media attention has “provided a catalyst for galvanizing public debate and further policy action” (Barnes, 2019:812). Media has played an increasingly important role in the past decade with the evolution of smartphones and the internet empowering individuals as a stakeholder group to hold companies accountable for their actions (Barnes, 2019). For example, the Blue Planet II documentary in 2017 raised public attention to the negative impact plastics have on the marine environment (BBC News, 2018), which influenced the development of the European Commission’s single-use plastic ban. When concern is raised, Summerhays and De Villiers (2012) found that organisations will increase the extent of environmental information disclosed in their reports in an effort to prove their environmental commitment and maintain credibility and legitimacy in the eyes of society, as was the case after the 2010 Deepwater Horizon Oil Spill. Elkington (1998) emphasised the importance of firms building public credibility and stakeholder engagement to create a sense of shared value and ownership in corporate initiatives.

### **5.2.1 Legitimacy concerns with voluntary environmental initiatives**

Research shows that companies undertake VEIs and set targets for different motives (Dahlmann et al., 2019a). Dahlmann et al. (2019) describe a spectrum of intentions for setting emission reduction targets ranging from symbolic, with low environmental commitment, to substantive with high environmental commitment. They argue “only when substantive intentions to improve environmental performance underpin target-setting behavior will they be effective” (Dahlmann et al., 2019:4). Understanding underlying intentions is important in identifying the legitimacy of corporate environmental ambitions as some initiatives may be systematically unrelated to emissions and impacts, and instead used as “symbolic impression management and legitimacy enhancement” (Dahlmann et al., 2019:3), often associated with greenwashing. This is defined as “the selective disclosure of positive information about a company’s environmental or social performance, while withholding negative information on these dimensions” (Lyon & Maxwell, 2011:5). There is concern that increasing pressure on firms to act on environmental issues will incentivise the communication of commitments with no clear plan to tackle environmental issues (Aragón-Correa et al., 2016; Dahlmann et al., 2019). In contrast, Lyon and Maxwell (2011) found that the risk of being accused of greenwashing is one reason managers hesitate to promote positive environmental work. Activists often attempt to punish companies accused of greenwashing by encouraging consumer boycotts and embarrassing the company in the media (Lyon & Maxwell, 2011). This can lead to reputational damage and financial loss. To mitigate business risk and respond to pressures, companies and their suppliers can set VEIs that exceed mandates and self-regulate their environmental conduct (Christmann & Taylor, 2002).

## 6 Climate compensation in the corporate sector

This section presents the findings from the practitioner review and interview study. The results and analysis are structured along five subsections. Subsection 6.1 presents a synthesis of current climate compensation communication in the corporate sector. This includes an analysis of the differences between climate target terminology in corporate communications. Subsection 6.2 discusses the ongoing developments with guidance related to corporate climate compensation. Next, subsection 6.3 analyses the carbon mitigation approaches used by the reviewed companies. Subsection 6.4 presents a summary and analysis of the current forestry-related initiatives companies are investing in as part of their carbon strategies. Finally, subsection 6.5 discusses the theme of credibility related to forestry projects, from the perspective of key stakeholders. Interview findings are referenced as ‘respondent A, B, C...’ Please refer to Appendix G and H for more information about the respondent’s respective position and company.

### 6.1 Communication of climate targets in the corporate sector

Corporate climate targets provide a means for effective internal and external communication and corporate engagement (Gassner, 2016). The communication of climate targets by each of the 16 companies reviewed in this study are analysed in this section. First, differences between climate target terminology are analysed, followed by findings on climate target setting.

#### 6.1.1 Differences between climate target terminology

This research found clear evidence that the concept of climate compensation in the corporate sector has been approached and communicated in various ways. Throughout the review of practitioner literature, industry reports, webinars and interview summaries, definitions and explanations of overall climate target terminology were noted. Communication of overall climate targets were found to differ between companies, with some using the term ‘carbon neutral’, while others use ‘carbon net zero’, ‘climate positive’ or ‘carbon negative’. These terms are often used interchangeably and inconsistently leading to some confusion within and between companies and external stakeholders trying to determine the impact and effectiveness of corporate targets (Carillo Pineda & Faria, 2019; Science Based Targets, 2019). During the time this research was conducted a new term – ‘absolute zero’ was introduced into the mix, demonstrating the dynamic landscape of climate target terminology. Table 6-1 encapsulates some general explanations for the most common terminology used amongst the 16 reviewed companies.

Table 6-1: Carbon related terminology with explanations & company examples

Term	Explanation	Example
<b>Carbon neutral or net zero</b>	Net zero emissions are achieved when the activities within the value-chain of a company result in no net impact on the climate from GHG emissions. Therefore, value chain GHG emissions must be reduced in line with the 1.5°C pathway and balanced by GHG removals over a specific period.	<ul style="list-style-type: none"> <li>▪ Arla Foods</li> <li>▪ Danone</li> <li>▪ Patagonia</li> <li>▪ Signify</li> <li>▪ Valio</li> </ul>
<b>Climate positive</b>	To realise climate positivity, a company must “achieve a state of net negative emissions by 2040 at the latest and reduc[e] and physically remov[e] more greenhouse gas emissions from	<ul style="list-style-type: none"> <li>▪ H&amp;M</li> <li>▪ IKEA group</li> </ul>

	the atmosphere than the whole value chain emits regardless of business growth” (WWF, 2020:1).	
<b>Carbon negative</b>	Carbon negativity is achieved when a company removes more carbon than it emits over a specific period.	<ul style="list-style-type: none"> <li>▪ MacArthur Green</li> <li>▪ Microsoft</li> </ul>

Source: Carillo Pineda & Faria, 2019; Science Based Targets, 2019; Smith, 2020; WWF, 2020.

When analysing the different definitions and explanations available of corporate terminologies and associated activities, no clear difference between the terms ‘carbon neutral’ and ‘carbon net zero’ was identified. In a webinar moderated by South Pole in May 2020, the author asked the panel if there was any clear difference between these two terms. This was described as the ‘million-dollar question’ that is up for debate at the moment. One panellist understood the two terms to be used interchangeably as synonyms. Another panellist described net-zero as a longer-term trajectory and carbon neutrality as a claim to be made along the way, where a company takes accountability for residual emissions along the net zero pathway (South Pole, 2020c). Carbon neutral targets often involve measuring a company’s emissions over the past year before compensating for them. According to Respondent C, the carbon neutrality path is more static, while the net-zero path is a more dynamic approach. Possibly, through emission reductions, removals and avoidance, a company could claim they are carbon neutral along the way to becoming net zero (South Pole, 2020c). The precise definition of these terms and their application to corporate climate strategies are still under debate.

A general finding from this research was that some companies are very transparent about their goals and the initiatives they use to compensate for residual emissions while others are not. For example, in February 2020, MacArthur Green published a detailed document outlining its carbon management strategy and carbon negative business model (MacArthur Green, 2020c). It claimed: “We want to help demonstrate how successful this type of business model is and encourage other SMEs<sup>22</sup> to adopt a similar approach” (MacArthur Green, 2020a). Similarly, Microsoft has made multiple white papers publicly available to share their actions in a replicable way along with best practices to help positively influence their sector (Natural Capital Partners, 2019). In contrast, some companies provide little information to the public regarding their climate targets and general climate strategy. In a discussion paper led by the CDP and SBTi (Carillo Pineda & Faria, 2019), approaches to climate neutrality were found to differ in at least four aspects: “(1) the time frame of the target (e.g. short vs long-term targets); (2) the scope of the activities included in the target (e.g. operational emissions vs. value-chain emissions); (3) the climate impacts from those activities (e.g. CO<sub>2</sub> emissions vs. non-CO<sub>2</sub> radiative forcing) and; (4) the climate mitigation approach used by companies to meet their targets (e.g. decarbonisation, use of offsets etc.)” (Carillo Pineda & Faria, 2019:1). This is partly supported in Table 6-2 where the climate targets with scope and time frame for the 16 reviewed companies are summarised. The terminology used in Table 6-2 is based on how each company communicated its targets within sustainability reports and corporate webpages.

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<sup>22</sup> SMEs = small-medium enterprises

Table 6-2: Summary of corporate climate targets with scope of activities and time frame (as of April 2020)

Company	Climate Target	Scope of target	Time frame
	Carbon net zero	operations (globally)	2050
	Zero carbon emissions	operations (globally)	2025
	Carbon negative	value chain	2030
	Net zero emissions	operations	2050
	Carbon neutral	value chain	2050
	Net zero focus	-	-
	Climate positive	value chain	2050
	Climate positive	value chain	2030
	Carbon negative	business	-
	Carbon negative	footprint (scope 1, 2 & 3) <sup>23</sup>	2030
	Zero historical CO <sub>2</sub> emissions	-	2050
	Carbon free	programme	-
	Zero net GHG emissions	-	2050
	Carbon neutral	business	2025
	Carbon neutral	operations	2020
	Net zero carbon	value chain	2030
	Carbon positive	operations	2030
	Carbon neutral	milk chain	2035

Source: Arla Foods (2020); AstraZeneca (2020); Australian Ethical (2019); Danone (2019); Elo Pak (2020); H&M Group (2019); IKEA Group (2019); MacArthur Green 2020); Marcario (2020); Movida (2018); Nestlé (2019); Signify (2020); Sky Group (2020); Smith (2020); Unilever (2020); Valio (2018).

Differences in corporate climate targets are demonstrated in Table 6-2, where some companies focus on reducing the climate impact of global operations and others of their value chain or business. Some companies are clear about what is included in their scope such as IKEA’s definition of their value chain: “from materials to product end-of-life” (IKEA Group, 2019:2) while others provide no clear definition. The scope of target significantly impacts the amount

<sup>23</sup> Scope 1 emissions come directly from a business’ activities (e.g. emissions from a truck used to transport products); Scope 2 emissions are indirect emissions from the generation of the electricity or heat a company purchases; and Scope 3 emissions are all indirect emissions (not including Scope 2) that occur upstream and downstream of the company’s value chain (GHG Protocol, 2019).

of carbon that needs to be eliminated and therefore the robustness of carbon management strategy developed. The time frame of targets also varies, though the majority of companies have set long-term ambitions to achieve targets by 2030 or 2050. Some companies, such as AstraZeneca and Microsoft, have set several targets with differing scopes and time frames, while others, such as Modiva, have no clear climate objectives but have implemented related programmes (e.g. carbon free programme). One highly ambitious climate target is that of Microsoft, with the goal to remove its entire historical carbon footprint from the environment since it was founded in 1975 by 2050 (Microsoft, 2020a; Smith, 2020a). This field is particularly dynamic, with corporate targets and associated strategies constantly evolving. In fact, multiple companies that were reviewed for this study released or were still developing corporate climate strategies related to ambitious climate targets while this research took place (e.g. AstraZeneca, Danone, H&M Group, IKEA Group, MacArthur Green, Microsoft, Nestlé, Patagonia, Sky group & Valio).

### **6.1.2 Selecting and setting climate targets**

Setting long-term climate targets involves discussions with multiple internal and external stakeholders. In an interview with Respondent A, the strategic selection process of climate target terminology was explained. Specifically, the choice between using ‘carbon neutral’, ‘carbon net zero’ or ‘carbon positive’ in their corporate communications. This decision involved multiple discussions with important stakeholders to the company, including environmental organisations, to understand the preferred target choice. ‘Climate positive’ was decided against as it was considered a risky and confusing concept. According to Respondent A, reaching ‘break-even’ in terms of emissions is challenging enough in this dynamic system, therefore trying to claim carbon or climate positivity – where the company does more good than harm – did not seem appropriate. Instead, ‘carbon net-zero’ was selected as the company believed it was the most honest option; one in which the company has recognised that they will never have zero emissions, but where they will strive to balance out emissions wherever they can. The drive for setting this specific climate goal as well as for setting SBTs until 2030 was to capture and communicate to stakeholders that the company is putting a clear focus on reducing GHG emissions (Respondent A, personal communication, March 10, 2020).

There appears to be a desire for a robust and clear definition for specific climate claims to help reduce confusion within and among companies. One company interviewed had proposed to create a round table in Sweden to discuss this matter, however at the time they were not met with much response. Since then, in November 2019, several actors within the field – namely the Inter IKEA Group, H&M Group and Max Burgers AB – partnered with WWF to develop the first draft for a global framework around climate positive (WWF, 2020c, 2020a). Respondent H explained the need for standardisation around climate positive and the involved actors’ desire to develop a credible framework to ensure the terminology had substance and was not a ‘fluffy’ concept. This framework is still in development, as of May 2020, and WWF is currently seeking to engage with other corporates and relevant organisations to develop the framework further and create a roadmap to achieve this ambition (WWF, 2020c). Once finalised, the framework will expectantly help settle the uncertainties that some proactive corporations currently face when developing important climate goals and related strategies. The novelty of this field means that relevant definitions, frameworks and guidelines are constantly evolving and emerging; this is discussed further.

## **6.2 Ongoing developments with corporate carbon guidance**

According to several interviewees (respondents C, D, & E), there has been a noticeable rise in the number of companies committing to net-zero or similar targets recently. Respondent C

noted a dramatic increase in demand for carbon neutrality guidance, carbon offsets purchases, and carbon and GHG reporting over the past five years. This trend was attributed to the Paris Agreement’s 1.5-degree trajectory as well as to Greta Thunberg’s influence with the Fridays for Future campaign<sup>24</sup>, also referred to as the ‘Greta Effect’ by Respondent E. The growth in ambitious corporate climate targets is considered positive and highly necessary by multiple interviewees who perceive that there is an urgent need to drive towards zero emissions globally, which requires immediate action from all actors. According to the President of Microsoft, Brad Smith, the urgent need for net zero means “those of us who can afford to move faster and go further should do so” (Smith, 2020a). This growing trend indicates that more than ever, companies are in need of clear guidance from reputable sources to help develop their climate strategies.

In this emerging field, there are many different opinions related to corporate commitments and approaches to achieve climate neutrality. Despite the desire for such, there is currently no scientific-based framework that defines what it is to be carbon net zero or climate positive and provides guidance on how to achieve this target. This has caused uncertainty within some companies wishing to set ambitious climate goals, specifically regarding which path is most appropriate and effective to take to achieve climate targets. For example, one interviewee described their hesitation regarding which specific actor(s) they should turn to for guidance, asking: “who makes the final decision? Who is running the show?” (Respondent A, personal communication, March 10, 2020). Furthermore, the Carbon Trust<sup>25</sup> has identified a “growing demand from companies for expert evaluation and guidance on their overall strategic approach to climate change” (Carbon Trust, 2019). This confusion seems justified with the absence of one key player in determining the dominant framework or guideline that a company should follow.

The apparent lack of top-level guidance regarding corporate climate compensation has resulted in standards, frameworks and guidelines being developed from the bottom-up (Respondent E, personal communication, March 31, 2020). This is demonstrated in the ongoing development of a climate positive framework between IKEA Group, H&M Group, Max Burgers and WWF (WWF, 2020a), as outlined in Figure 6-1.

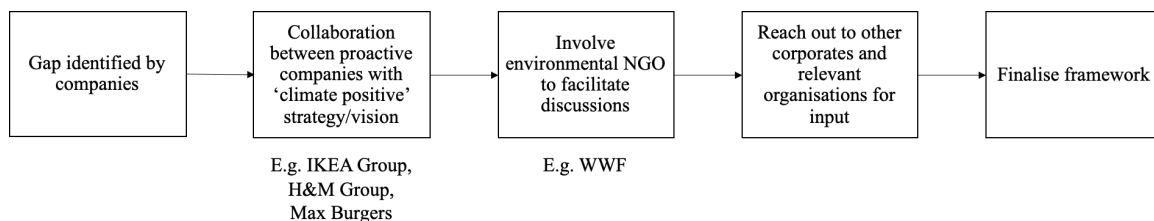


Figure 6-1: Bottom-up development of climate positive framework

Source: author’s own illustration from information gathered during an interview with Respondent H

Further frameworks and guidance documents have been proposed by other actors. For example, in June 2019, the Carbon Trust announced their ‘Climate Leadership Framework’ to

<sup>24</sup> Greta Thunberg is a Swedish environmental activist who gained international recognition in 2018 when she called for stronger action by world leaders on climate change by beginning a school climate strike movement under the name ‘Fridays for Future’ (Alter et al., 2019).

<sup>25</sup> The Carbon Trust partners with businesses, governments and organisations to support sustainable, low carbon futures. It provides voluntary carbon certification services and verifies corporate carbon footprint data (Carbon Trust, 2020a).



help managers follow a low-carbon path (Carbon Trust, 2019, 2020b). Additionally, in May 2020, South Pole along with SBTi, GHG Protocol and the Gold Standard discussed the development of a 'Framework for a Net Zero Emissions Economy' (The Gold Standard, 2020). In a 2019 presentation by the SBTi, it was mentioned that new guidance on accounting for land-sector emissions and removals was being developed by the GHG Protocol (Science Based Targets, 2019). Furthermore, corporate net-zero guidance for practitioners, along with recommendations and qualitative and quantitative criteria to inform the formulation and assessment of corporate net-zero targets is set to be developed by the SBTi in the second quarter of 2020 (Science Based Targets, 2019). Over the past two years, research institutes such as the GHG Management Institute and Stockholm Environment Institute have also released multiple corporate guidance documents regarding the use of carbon offsets (Broekhoff et al., 2019b). It is evident that companies and other stakeholders are identifying a lack of standardisation and are choosing to collaborate to fill this gap. Respondent A and H explained their company's interest in being involved in these discussions early on to ensure that new guidance documents are developed with their input so that it suits them.

During interviews with several companies and consultancies, evidence was found that while this space is still developing, some standards, methodologies and pathways are considered to be well formulated and worthy of respect. For example, the use of a 1.5°C focused SBT following GHG Protocol methodology are considered more rigorous in terms of net zero and the 1.5-degree alignment. These multi-stakeholder initiatives are constantly developing and improving and can set a common ground for companies to be able to align their actions (Respondents C & G, personal communication, March 27 & April 21, 2020). While important players in the carbon business world collaborate to develop appropriate guidance, companies can closely follow the guidance provided by actors such as the UNFCCC, CDP and SBTi as well as RE100 (renewable energy) and EV100 (electric vehicles) depending on their strategic focus. Furthermore, while there are potential uncertainties regarding the ideal way a company should proceed, this does not provide a justification for a company to do nothing (Respondent C, personal communication, March 27, 2020). A common opinion gathered from interviewees and company reports was that there is an undeniable need for urgent action to tackle climate change; the important thing just now is that they are seen to be doing something meaningful, as long as they take into account the scientific advice and guidelines provided by key actors mentioned above and develop strategies best suited to their business activities (Respondent G, personal communication, April 21 2020).

This section produced two essential insights. **First**, there is a gap in sector-specific guidance concerning how a company can achieve ambitious climate targets in a credible way. Specifically, there is a need for a framework that aligns with the SBTi, GHG Protocol and market standards. Science-based definitions with guiding principles are urgently needed in order to allow the private sector to achieve harmonised, ambitious and efficient climate action. **Second**, despite the lack of robust guidance, important players, such as the SBTi and GHG Protocol, are acknowledging and addressing the existing gap in the carbon conversation today (The Gold Standard, 2020). To achieve ambitious climate commitments, the companies reviewed have implemented, or were considering at the time of research, various carbon mitigation approaches, these will be discussed further in Section 6.3.

### 6.3 Corporate carbon mitigation approaches

This section provides a summary of some general carbon mitigation approaches being used by companies to achieve their climate targets, as identified in the company review.

Throughout the practitioner and interview study, it was clear that companies implement a wide range of emission mitigation measures to achieve their climate targets. These mitigation approaches are described by the CDP and SBTi as ranging from (1) decarbonisation activities; (2) balancing emissions with removals within the value chain of the company; (3) balancing emissions within the value chain of the company with emissions avoided through the use of sold products/services; (4) offsetting (carbon removal activities or emission reduction projects); to (5) hybrid approaches, where companies use a mixture of decarbonisation and other mitigation approaches to reach their targets (Carillo Pineda & Faria, 2019; Science Based Targets, 2019). A further approach identified in this research was setting internal decarbonisation incentives such as carbon pricing<sup>26</sup>, which involves setting an internal price on carbon, “high enough to materially affect investment decisions to drive down GHG emissions” (CDP, 2020a). This is implemented by Microsoft to help pursue the firm’s carbon neutrality position and ensure every business division is financially responsible for reducing their carbon emissions (Smith, 2019).

The majority of companies reviewed had ambitions to decarbonise by reducing Scope 1, 2 and 3 emissions in the future. Actions to achieve these ambitions included using 100% renewable electricity, renewable fuels for transportation in certain countries (e.g. Arla Foods in Sweden), or transitioning to hybrid or electric vehicle fleets (e.g. AstraZeneca). Some companies had ambitions to balance emissions within their value chain with removals through the use of carbon sinks or carbon capture and storage (e.g. H&M Group, IKEA Group & Sky). Some claimed avoided emissions through the use of their products, such as IKEA’s Home Solar products and energy-efficient lighting and appliances, enabling customers to use renewable energy at home and save energy. This research also found that investments in carbon mitigation actions can differ between different sections of a business. For example, in their 2019 Sustainability Report, IKEA stated: “parts of the business are investing heavily in the transition to renewable energy and access to electric vehicles, whereas other parts are investing in innovation and the development of new materials, forest management practices and product development” (IKEA Group, 2019:7).

While many of the companies reviewed used carbon offsets to achieve their targets, most used them in addition to other decarbonisation or value chain focused activities. For example, corporate carbon strategies usually involved multiple stages, such as actions to 1) *avoid* emissions, 2) *reduce* emissions, 3) *substitute* electricity and fuel sources for lower carbon alternatives and finally 4) *compensate*. Several companies, such as AstraZeneca and IKEA, specifically stated that they have the ambition to achieve climate targets without the use of carbon credits, as demonstrated in Table 6-3. In addition to emission reductions and compensation, another approach taken by Australian Ethical Investment was to decarbonise their entire investment portfolio (Australian Ethical, 2019). This involves collaborating with investees to reduce Scope 1, 2 and 3 emissions to reach their net-zero target.

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<sup>26</sup> The CDP has reported an eight-fold increase in use of internal price of carbon for major multinationals, with almost 1,400 companies integrating internal carbon pricing into their business plans in 2017 (CDP, 2020a).

Table 6-3: Examples of companies with explicit objectives to avoid using carbon credits

Company	Corporate communication surrounding purchasing carbon credits
AstraZeneca	“We are decarbonising business now by taking actions to eliminate GHG emissions from our sites and fleet by 2025 <b>without carbon credits</b> and by becoming carbon negative across our entire value chain by 2030” (AstraZeneca, 2019:34).
IKEA	“The IKEA commitment for 2030 is to become climate positive... the ambition is to achieve this <b>without purchasing carbon offset certificates</b> . Instead the IKEA business is addressing the root cause of our impact on climate change” (IKEA Group, 2019:23).

Source: AstraZeneca (2019); IKEA Group (2019).

Despite AstraZeneca’s desire to achieve carbon negativity without carbon credits, its 2019 carbon strategy involves compensation actions such as investing in carbon removal programmes to compensate for its Scope 3 emissions. This is claimed to be the strategy in the near-term until better solutions are available (AstraZeneca, 2019). It is unclear how AstraZeneca’s compensation initiatives are to be accounted for and how/if any carbon savings from such activities would be measured. Throughout the practitioner review, corporate investments in carbon removal projects and forestry-initiatives were identified; these are discussed in Section 6.4.

## 6.4 Corporate forestry initiatives

In addition to the carbon-mitigation measures mentioned above, all companies reviewed were involved in some way with forestry-related initiatives to compensate for residual emissions. This section examines the trends and motives for investing in forestry projects as identified through this research. Next, it analyses the different forestry initiatives that the 16 reviewed companies invest in or were considering as part of their climate mitigation approaches at the time of research. This analysis also considers the sustainability issues and/or co-benefits companies are targeting in addition to climate compensation through their investments in forestry projects.

### 6.4.1 Motives for corporate investments in forestry programmes

This research found clear evidence that demand for forestry-related projects in the corporate sector has grown in popularity in recent years. The demand for forestry carbon reduction projects is expected to rise as more companies aim to address unavoidable emissions (Respondent D, personal communication, March 30, 2020). Of those companies reviewed and interviewed, main drivers for investing in forestry projects centred around forests’ unique ability to not only avoid emissions but to capture and sequester carbon from the atmosphere. During a webinar moderated by Natural Capital Partners, forests were described as “one of the largest and most cost-effective climate solutions available today” (Natural Capital Partners, 2019) with numerous environmental and social benefits. Forestry-related initiatives were explained to allow companies to take action on climate change, build resilience and support communities in the supply chain and operations of their business. Respondent G considered forestry projects to bring the highest environmental benefits compared to other carbon offsetting projects. Forest projects were considered the most natural way to offset emissions along with the removal of CO<sub>2</sub> from the atmosphere often having direct and profound ecosystem and community benefits. These initiatives are also a means to engage with staff and customers, as mentioned in an interview with Respondent A, who believed that tree projects

were recognised and respected amongst Swedish consumers. Several motives for businesses to be involved in these programmes are summarised in Table 6-4.

Table 6-4: Key drivers for businesses to be involved in forestry programmes

Drivers	Reasons
<b>Climate and biodiversity</b>	<ul style="list-style-type: none"> <li>Helps companies meet objectives around carbon reduction and long-term carbon removals.</li> <li>Associated benefits: improved biodiversity, habitat provision, water storage, absorption of CO<sub>2</sub>, released oxygen</li> </ul>
<b>Value chain operations</b>	<ul style="list-style-type: none"> <li>Delivering measurable and tangible benefits where businesses operate and where their customers may exist</li> </ul>
<b>Engagement and communications</b>	<ul style="list-style-type: none"> <li>Informing and inspiring employees and stakeholders about the actions taken locally and enabling a tangible link to global climate programmes</li> </ul>

Source: Natural Capital Partners, (2019).

Businesses have different motives for supporting forestry programmes, which can impact the credibility of business claims. As an example, in a Webinar with Natural Capital Partners in 2019, four categories of forestry actions were discussed, and the strength of a company’s tree and carbon claim were distinguished between. This is shown in Figure 6-2 where companies can finance 1) charitable actions, 2) tree planting, 3) carbon credits, or 4) forest catalyst activities. Explanations of these four terms are provided in Table 6-5. Projects within the ‘carbon credits’ and ‘forest catalyst’ categories were described as the most credible as they provide the most substantial claim for carbon reduction and tree plantation. The credibility of carbon claims is discussed further in 6.5.

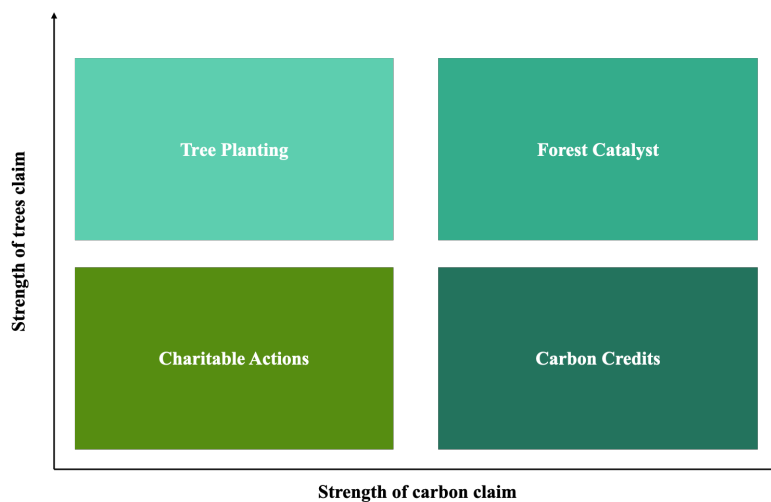


Figure 6-2: Categories of business actions regarding forestry initiatives

Source: adapted from Natural Capital Partners (2019)

Table 6-5: Business actions regarding forestry initiatives

<b>Charitable actions</b>	<ul style="list-style-type: none"> <li>▪ Donation to an organisation that supports forestry</li> <li>▪ No direct link between outcomes and finance</li> <li>▪ Weak claim for trees and carbon</li> </ul>
<b>Tree planting</b>	<ul style="list-style-type: none"> <li>▪ Financing new tree planting – payment made per tree</li> <li>▪ Direct link of financing with trees</li> <li>▪ No strong claim for carbon – project may not be associated with credible carbon reporting methodology</li> <li>▪ Ownership for carbon reduction not determined</li> </ul>
<b>Carbon credits</b>	<ul style="list-style-type: none"> <li>▪ Financing existing tree planting projects – payment made per tonne of CO<sub>2</sub> removal</li> <li>▪ Solid claim for carbon reduction</li> <li>▪ Finance based on project output (CO<sub>2</sub>) and not necessarily the input (trees planted), therefore the claim for trees is weak (not sufficient evidence to state the specific number/volume of trees planted)</li> </ul>
<b>Forest catalyst</b>	<ul style="list-style-type: none"> <li>▪ Financing new tree planting activities – payment made per tonne of CO<sub>2</sub> removal and per tree planted</li> <li>▪ Finance based on expected project output</li> <li>▪ Strong claim for both trees and carbon</li> </ul>

Source: *Natural Capital Partners, (2019).*

#### 6.4.2 Nature Based Solutions and other terminologies

When reviewing corporate sustainability reports and websites, there was an evident move away from the word ‘offset’ and a re-branding of forestry offsets to the terms ‘Nature Based Solutions’ (NBS), ‘Natural Capital Solutions’ (NCS) or ‘forestry investments’. These were described as the new buzz words by Respondent E and F and a trend to make forestry offsets more attractive. Moreover, Microsoft included afforestation and reforestation projects under the heading ‘Negative Emission Technologies’. In a webinar moderated by South Pole in May 2020, the term ‘offsetting’ was claimed to have moved towards communication of ‘a contribution to global climate action’. One interviewee stated that NBS was synonymous with ‘forestry offset’. However, this does not align with reports from the Gold Standard that categorise forestry (afforestation/reforestation and improved forest management) as a sub-category of NBS. The different types of forestry-related initiatives the reviewed companies were involved in are discussed in the following section.

#### 6.4.3 Forestry initiatives implemented by reviewed companies

A summary of the forestry initiatives and sustainability issues and/or co-benefits targeted by the 16 reviewed companies is provided in Table 6-6. It highlights those initiatives specific to forestry in bold, including projects aimed at protecting forests, agroforestry, carbon sinks, regenerative agriculture. Projects classified as ‘REDD+’ refer to those associated with reduced emissions from deforestation and forest degradation plus the sustainable management of forests and the conservation and enhancement of forest carbon stocks (REDD+). These projects can remove and avoid carbon in the same intervention.

Table 6-6a: Summary of forestry initiatives & sustainability issues & co-benefits targeted (as of April 2020)

Company	Forestry initiatives used to achieve climate target	Sustainability issues and/or co-benefits targeted
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• <b>REDD+</b> project <b>protecting rainforests</b>, Indonesia</li> <li>• Biogas project, East Africa</li> <li>• <b>Agroforestry</b> project, Uganda</li> </ul>	<ul style="list-style-type: none"> <li>▪ Air &amp; water pollution</li> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Fossil fuel/energy use</li> </ul>
	<ul style="list-style-type: none"> <li>• Invest in carbon removal programmes in near-term for supplier footprint until better solutions available</li> <li>• Plan to <b>plant 50-million trees</b> over next 5 years</li> </ul>	<ul style="list-style-type: none"> <li>▪ Climate change</li> <li>▪ Fossil fuel/energy use</li> <li>▪ Human health</li> </ul>
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• Kariba <b>REDD+</b> project, Zimbabwe</li> </ul>	<ul style="list-style-type: none"> <li>▪ Climate change</li> <li>▪ Deforestation</li> <li>▪ Hunger</li> <li>▪ Poverty</li> </ul>
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• Invest in the Livelihoods Carbon Fund<sup>27</sup> to support projects for <b>mangrove restoration, agroforestry</b> &amp; fuel-efficient cookstoves in Asia, South America &amp; Africa</li> </ul> <p><b>Additional initiatives:</b></p> <ul style="list-style-type: none"> <li>• Soil health initiative (<b>carbon sinks &amp; regenerative agriculture</b>)</li> <li>• One Planet Business for Biodiversity<sup>28</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Community development</li> <li>▪ Deforestation</li> <li>▪ Fossil fuel/energy use</li> <li>▪ Restoring ecosystems</li> <li>▪ Soil degradation</li> </ul>
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• <b>REDD+, protecting rainforests</b>, Indonesia</li> <li>• Cookstoves project, Kenya</li> </ul>	<ul style="list-style-type: none"> <li>▪ Community development</li> <li>▪ Fossil fuel/ energy use</li> </ul>
	<ul style="list-style-type: none"> <li>• Will likely manage unavoidable emissions with <b>carbon sinks</b> (natural &amp; technological)</li> <li>• Strategy for carbon sinks &amp; offsetting being developed in 2020</li> </ul>	<ul style="list-style-type: none"> <li>▪ Agricultural practices</li> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Social sustainability</li> <li>▪ Water usage</li> </ul>
	<ul style="list-style-type: none"> <li>• Storing carbon in land, plants &amp; products</li> <li>• Exploring ways to store carbon through better forest management and agricultural practices (<b>carbon sinks</b>)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Deforestation</li> </ul>

<sup>27</sup> Livelihoods Carbon Funds finance projects surrounding ecosystem restoration, agroforestry and rural energy projects by providing upfront financing to project developers for large-scale project implementation and maintenance over periods of 10 to 20 years (Livelihoods Funds, 2020). See: [www.livelihoods.eu/ldf/](http://www.livelihoods.eu/ldf/)




<sup>28</sup> An “international cross-sectorial, action-oriented business coalition on biodiversity with special focus on agriculture” (OP2B, 2019), launched at the United Nations Climate Action Summit in New York in 2019. See: [www.op2b.org](http://www.op2b.org)

Table 6-6b: Summary of forestry initiatives &amp; sustainability issues &amp; co-benefits targeted (as of April 2020)

Company	Forestry initiatives used to achieve climate target	Sustainability issues and/or co-benefits targeted
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• Borehole rehabilitation, Uganda</li> <li>• Cookstove programme, Kenya</li> <li>• Portel-Pará Deforestation (<b>REDD+</b>), Brazil</li> <li>• Wind based power generation, India</li> </ul> <p><b>Additional initiatives:</b></p> <p>Carbon Reduction Plan</p> <ul style="list-style-type: none"> <li>• <b>Tree planting</b> at own nature reserve in Scotland</li> <li>• Woodland management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Deforestation</li> <li>▪ Forest and land management</li> <li>▪ Fossil fuel/ energy use</li> </ul>
	<p><b>Carbon Offsets:</b></p> <ul style="list-style-type: none"> <li>• <b>Forestry &amp; land use</b> projects, Washington &amp; Indonesia</li> </ul> <p><b>Additional initiatives:</b></p> <ul style="list-style-type: none"> <li>• Shifting focus to removing carbon already emitted through ‘Negative Emission Technologies’ (NET) – <i>potentially</i> including <b>afforestation and reforestation</b></li> <li>• <b>Forest creation programme</b> in Ireland &amp; the Netherlands</li> <li>• <b>Biodiversity initiative</b> – ‘Planetary Computer’<sup>29</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Collaborations with customers</li> <li>▪ Community development</li> <li>▪ Employee engagement</li> <li>▪ Fossil fuel/ energy use</li> <li>▪ Forest and land management</li> <li>▪ Social sustainability</li> <li>▪ Watershed restoration</li> </ul>
	<ul style="list-style-type: none"> <li>• Carbon Free Program – offset pollutant emissions resulting from rentals by <b>planting trees</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Climate change</li> </ul>
	<p>Insetting approach to <b>reforestation</b> program:</p> <ul style="list-style-type: none"> <li>• <b>Agroforestry</b> within value chain</li> <li>• Protecting forests by <b>replanting trees</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Climate change</li> <li>▪ Community development</li> </ul>
	<p>Developing plan to mitigate residual emissions</p> <p>Focus:</p> <ul style="list-style-type: none"> <li>• Regenerative organic agriculture</li> <li>• Soil carbon sequestration (<b>land-restoration</b>)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Pollution</li> <li>▪ Public &amp; worker health</li> <li>▪ Rivers health</li> <li>▪ Threats to wildlife</li> </ul>
	<p><b>Carbon offsets:</b></p> <ul style="list-style-type: none"> <li>• <b>Forest protection</b>, Zimbabwe</li> <li>• RE projects, China, India &amp; Vietnam</li> <li>• <b>Reforestation</b> project, Colombia</li> <li>• Landfill gas recovery, China</li> </ul>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Community development</li> <li>▪ Deforestation</li> <li>▪ Employee engagement</li> <li>▪ Forest management</li> <li>▪ Fossil fuel/ energy use</li> </ul>

<sup>29</sup> In April 2020, Microsoft released this initiative for a Planetary Computer using artificial intelligence and machine learning to monitor the Earth’s health. The initiative is intended to help researchers and other companies working to advance sustainability to make more informed decisions around the environment and biodiversity (Microsoft, 2020b).

Table 6-6: Summary of forestry initiatives &amp; sustainability issues &amp; co-benefits targeted (as of April 2020)

Company	Forestry initiatives used to achieve climate target	Sustainability issues and/or co-benefits targeted
	<p><b>Carbon Offsets:</b></p> <ul style="list-style-type: none"> <li>• <b>Afforestation/reforestation</b>, Mexico</li> <li>• Rimba Raya <b>REDD+ project</b>, Indonesia</li> <li>• Wind/solar energy, India &amp; the UK</li> <li>• Cookstove &amp; water treatment project, Guatemala</li> </ul> <p>From 2030, will offset any remaining carbon footprint across entire value chain in natural <b>carbon sinks</b> – e.g. forests, mangroves and seagrass</p>	<ul style="list-style-type: none"> <li>▪ Biodiversity</li> <li>▪ Deforestation</li> <li>▪ Ocean health</li> </ul>
	<p>Commitment to sustainably source commodities linked to <b>avoided deforestation</b></p> <p>Landscape programmes across Indonesia &amp; Malaysia (<b>land-restoration</b>)</p>	<ul style="list-style-type: none"> <li>▪ Climate change</li> <li>▪ Deforestation</li> <li>▪ Land management</li> </ul>
	<p>Will use <b>carbon sinks</b>: smart grass field cultivation (binding carbon in grassland – still in development)</p>	<ul style="list-style-type: none"> <li>▪ Animal health</li> <li>▪ Biodiversity</li> <li>▪ Climate change</li> </ul>

Source: Arla Foods (2020); AstraZeneca (2020); Australian Ethical (2019); Danone (2019); Elopak (2020); H&M Group (2019b, 2019a); IKEA Group (2019a, 2019b); MacArthur Green (2020); Marcario (2020); Movida (2018); Signify (2020); Sky Group (2019, 2020); Smith (2020a, 2020b); Unilever (2020); Valio (2018); Ware (2020).

The summary given in Table 6-6 produced three essential insights. **First**, there is a wide range of forestry-related initiatives being implemented and considered by companies to achieve ambitious climate commitments. **Second**, there are numerous sustainability issues and/or co-benefits targeted or considered by companies during project investment decisions, (these will be analysed further in 6.4.7). **Third**, 50% of companies reviewed were still in the process of developing their strategies or methodologies surrounding forestry initiatives at the time of research (e.g. Arla Foods, Danone, H&M Group, IKEA, Microsoft, Patagonia, Sky, & Valio).

Throughout this research, it became apparent that some companies have taken a more hands-off approach to climate compensation initiatives while other companies have taken on a more hands-on approach. These categories, along with some evolving approaches to climate compensation, will be discussed and distinguished between further.

#### 6.4.4 Hands-off approaches to climate compensation

This subsection analyses the more ‘hands-off’ approaches to corporate climate compensation identified by the reviewed companies. In this context, ‘hands-off’ refers to little-to-no involvement of the target company with the development, implementation, monitoring and maintenance of the chosen initiative.

##### **Investments in offsets from offset providers & investment funds**

Some companies have chosen to work with an ‘offsetting partner’ to invest in certain carbon offsetting projects. These projects predominantly operate in developing countries as they are cheaper to implement and often have larger associated co-benefits such as improved social and economic wellbeing. Offset providers offer projects that are already developed and available



for companies to select. The offset has occurred, and the carbon credit can therefore be purchased. An offsetting partner is responsible for tracking the progress of projects and providing the investing company with updates. For forestry-projects, these updates are much less frequent than most other carbon offsetting projects due to the longevity of tree-related activities. Of the companies reviewed, it seems common practice to invest in a portfolio of projects, both as a strategy to spread the risk of investment and to promote different types of climate mitigation options. Companies are also likely to invest in projects related to the business' value chain to align with the story they want to tell stakeholders about their climate actions. For example, food retailers are often involved in cookstove projects as well as community-based forestry projects, whereas tech-companies often invest in renewable energy projects (Respondent C, personal communication, March 27, 2020).

There are a wide range of offsetting partners available for companies to work with, including specific investment funds such as the Livelihoods Funds. This specific Fund was established by private companies to develop and implement projects focusing on improving the livelihoods of rural communities in developing countries to achieve positive social, environmental and economic impacts (Ramdoo, 2019). The Funds allow project developers to implement and monitor projects for up to 20-years. Based on the Fund's investment model, companies can invest in the funds to receive carbon credits. Accordingly, companies that invest in these projects are not directly involved with designing or monitoring the project and instead rely on their partners to provide impact statements.

As evident in Table 6-6 above, there are numerous forestry-related offsets that companies currently invest in more generally, not exclusive to Livelihoods Funds. Specific types of forestry offsets that were invested in by companies are summarised in Table 6-7.

Table 6-7: Forestry offset project categories with descriptions

Forestry offset project category	Description
<b>Afforestation/ reforestation</b>	<p>Afforestation projects involve planting trees on land which was not previously covered in forest. Reforestation projects involve planting trees on land that was previously forest and has since been cleared.</p> <p>Approaches to reforestation include (1) protecting and restoring <i>existing</i> forests or (2) creating <i>new</i> forests in regions that were historically forested.</p>
<b>Agroforestry</b>	<p>Agroforest refers to land-use systems and technologies combining agriculture and forestry. They involve the combined planting of trees or shrubs among or around crops or pastureland to enhance biodiversity and reduce erosion.</p>
<b>Forest restoration</b>	<p>These projects involve improving the health, productivity and biodiversity of a forest. They might involve planting trees, improving soils, protecting wildlife corridors and managing land sustainably. These projects require participation and collaboration with many actors to ensure project success. Community engagement is important in these projects to help prevent over-consumption of forest wood and unsustainable forest management.</p>

<p><b>Mangrove conservation and restoration</b></p>	<p>These projects involve regenerating mangrove forest ecosystems in areas where they had existed previously. They hold mitigation and adaptation gains.</p>
<p><b>REDD+</b></p>	<p>REDD+ involves efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks. Projects can involve, among other things, forest conservation, training community members in sustainable forest management, fire management, beekeeping, nutritional gardening, and borehole resuscitation.</p>

Source: FAO (2020); Gustafson (2020); Livelihoods Funds (2020); Natural Capital Partners (2020).

### 6.4.5 Hands-on approaches to climate compensation

This subsection analyses the more ‘hands-on’ approaches to corporate climate compensation identified during the company review. In this context, ‘hands-on’ refers to greater involvement of the target company with the development, implementation, monitoring and maintenance of the chosen initiative than in the previous section. This type of corporate approach may be important from a legitimacy point of view, where companies attempt to design or implement projects with more meaning and alignment with their value chain.

#### **Designing projects & programmes through collaborations**

Multiple companies have cooperated in or launched projects focusing specifically on topics of importance to them, such as regenerative agriculture and soil carbon sequestration (e.g. Danone and Patagonia). These projects and programmes have multiple purposes alongside approaches to climate compensation, including contribution to research, encouraging cooperation between public and private sector stakeholders and providing impact investing opportunities (Danone, 2019). Some companies have been involved in designing their own carbon offset or inset projects in collaboration with their offsetting partners, environmental NGOs or as part of a wider programme. For example, Signify developed a project surrounding off-grid renewable energy and lighting in India with their offsetting partner South Pole to align with their vision and the values of the company (Respondent G, personal communication, April 21, 2020). Also, H&M Group partnered with WWF in a pilot SCALE (Supply Chain Landscape Approach) programme in Cambodia to explore the possibility of investing in inset projects within H&M Group’s textiles and energy supply chain (H&M Group, 2019b). This particular programme highlighted the challenges associated with deforestation and corruption in Cambodia, leading to H&M Group discontinuing its involvement with the programme. The challenges encountered in this pilot project led to the company considering developing an advocacy strategy to determine what topics it should engage in and to what level within the countries in which it operates (Respondent H, personal communication, April 23, 2020).

#### **Implementing forestry programmes with partners**

As part of corporate carbon strategies, some companies choose to compensate for residual emissions by planting a certain number of trees over a specific period. These projects are often done in partnership with renowned NGOs, research bodies and governments. One such collaboration exists between both AstraZeneca and Nestlé with NGO ‘OneTreePlanted’<sup>30</sup> and

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<sup>30</sup> OneTreePlanted is an NGO working with the WRI with tree planting projects in North America, Latin America, Africa and Asia. A company can donate US\$1 to plant one tree (OneTreePlanted, 2020).

the World Resources Institute<sup>31</sup> to support reforestation projects around the world. AstraZeneca's partnership with OneTreePlanted will involve planting 50-million trees over the next five years as part of their 'Ambition Zero Carbon' programme (AstraZeneca, 2020). Working with the same initiative, Nestlé will plant three million trees across the Americas, beginning in March 2020 (Ware, 2020). Nestlé claims to be taking an insetting approach to reforestation, as trees will be planted in regions where its raw materials are grown and harvested (Ware, 2020). These programmes are generally divided into different phases involving preparing the site, growing saplings, transporting and planting trees by hand and finally maintenance and monitoring of operations to generate an impact report (OneTreePlanted, 2020). Further partnerships were identified between Microsoft and Natural Capital Partners<sup>32</sup> to develop a 'forest creation programme'. The programme was created by Natural Capital Partners and funded through Microsoft's carbon fee (Natural Capital Partners, 2017). It involves Microsoft partnering with famers in Ireland and the Netherlands to provide finance for conservation, restoration and improved land management projects. Since the projects began, more than 155 hectares of land has been reforested (Natural Capital Partners, 2019).

### **Purchasing land to plant forest/woodland**

One very hands-on approach to climate compensation involves producing carbon credits through purchasing and maintaining land to grow or protect a forest or woodland. Several reviewed companies emphasised the importance of improved forest and land management for enhancing biodiversity in addition to carbon sequestration. In 2016, MacArthur Green purchased land for native broadleaved tree planting. After undertaking ecological and environmental surveys and applying to Scottish Forestry for a Forestry Grant Scheme, the grant scheme was approved in 2018. So far, the company has planted more than 30,000 trees in their own woodland in Scotland (MacArthur Green, 2020b). By 2030 the woodland is projected to sequester 232 tonnes of CO<sub>2</sub> per year, and the cumulative carbon sequestration from this woodland is estimated to reach more than 10,000 tCO<sub>2</sub>e over the next 100 years<sup>33</sup>. These types of projects are long-term and can take over five years before carbon credits are produced. In the case of MacArthur Green's woodland, verified carbon credits are created when third-party site monitoring verifies them initially after five years and then every ten years. These credits are used to compensate against emissions and then retired in the carbon market registry (MacArthur Green, 2020b).

Undertaking these projects is time and money intensive, however, the co-benefits from woodlands have been found to accrue immediately (Natural Capital Partners, 2019). Additionally, in a webinar moderated by Natural Capital Partners in 2019, the importance of corporate forestry programmes in shaping the future landscape for all stakeholders involved was emphasised. Moreover, there is currently a major gap in afforestation/reforestation efforts by many governments and therefore corporate financing in forestry-initiatives can help bridge this gap. For example, in order for the UK to deliver its stated target of net zero by 2050, the Committee for Climate Change in the UK suggest that 30,000-50,000 hectares of new plantings are needed each year (McAleenan, 2019). Currently, only around 9,000-10,000 hectares are forested throughout the UK, demonstrating the urgent need for financing and implementation of forestry programmes.

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<sup>31</sup> The World Resources Institute is a global research organisation working closely with global leaders on topics such as climate, forests, water, cities, energy, food and the ocean (World Resources Institute, 2020)

<sup>32</sup> See Appendix G: Stakeholder list for more information on Natural Capital Partners

<sup>33</sup> For specific project details including carbon calculations and project design documents follow this [link](#)

### **6.4.6 Evolving approaches to climate compensation**

This subsection analyses some of the evolving approaches to climate compensation identified during the company and interview review. This includes the concept of carbon insetting and carbon sequestration through natural carbon sinks.

#### ***Carbon insetting***

As outlined in previous sections, corporate carbon target setting, strategies and guidance are constantly evolving. This too can be said for approaches to climate compensation with new initiatives being tested and pilot programmes initiated frequently, for example, with insetting projects. As explained in Section 6.4.5, Nestlé’s forestry initiative includes agroforestry and reforestation activities within areas where it sources its raw materials, consequently, Nestlé is classifying its climate compensation approach as insetting. Another company considering the concept of insetting is H&M Group. H&M Group’s carbon strategy is in an exploratory phase where they are currently assessing their main impacts from a biodiversity and carbon perspective (Respondent H, personal communication, April 23, 2020). Its climate positive strategy has three pillars 1) energy efficiency, 2) renewable energy and fuels, and 3) natural carbon sinks and resilience. The last is the least evolved. The company is currently developing a strategy and response to biodiversity issues in order to address this in raw material supply chains and the company’s overall value chain. Respondent H explained that the company recognises synergies between the carbon agenda and biodiversity agenda in insetting programmes specifically.

During interviews with several consultancies, insetting was claimed to be a topic of growing relevance, although Respondent G reported a low rate of companies executing this strategy to date. Additionally, Respondent C explained some of the risks that their organisation associated with insetting as opposed to offsetting projects. For example, with insetting projects, a company can invest in a project; however, at the time of investment, the project will not have generated any carbon credits. As the project takes time to arrive at a point where carbon has been sequestered, insetting projects are much more long-term and intensive than purchasing carbon offset credits, this means they are a riskier investment if the project is to fail (Respondents C & E, personal communication, March 27 & 31, 2020). A further uncertainty with insetting is that at the moment, insetting activities are not approved by the SBTi, therefore, these projects are not currently acknowledged and included in reporting towards performance targets. Further, projects classified as ‘insetting’ initiatives by companies today could be at risk in the future if actors such as the GHG Protocol develop their own framework, standard or definition of this corporate activity where the company’s project does not meet the set criteria, this implies a lack of incentive for companies to undertake these projects until a more robust framework is in place.

#### ***Carbon sequestration through natural carbon sinks***

More than a third of the companies reviewed mentioned the desire to use natural carbon sinks to account for residual emissions (e.g. Danone, H&M Group, IKEA Group, Patagonia, Sky & Valio). In a 2020 webinar, these nature-based removals were classified as either reforestation or soil-carbon sequestration (South Pole, 2020c). Alternatively, the Gold Standard has categorised nature-based solutions into three project types –forestry, soil organic carbon and blue carbon, see Figure 6-3.

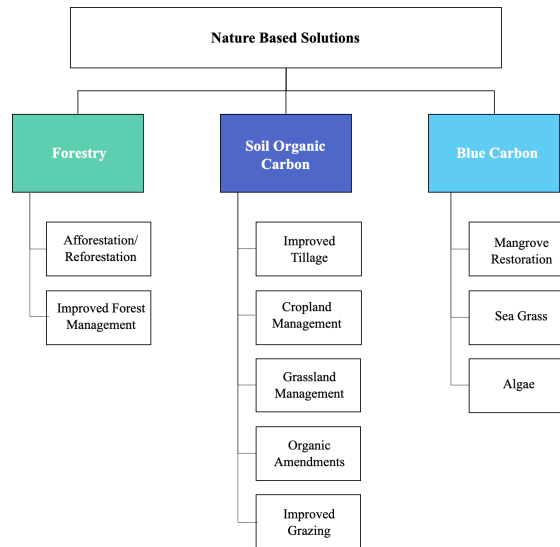


Figure 6-3: Gold Standard categorisation of Nature Based Solutions

Source: adapted from webinar presentation, South Pole (2020)

Methodologies to calculate carbon sequestration from forestry projects are reasonably established; however, as of May 2020, there are no agreed upon methodologies for soil-carbon sequestration. According to a Chief Technical Officer (CTO) from the Gold Standard, there is still a lot of work required to quantify the removal of carbon from soil-carbon sequestration projects and to better understand the role of nature-based solutions and removals (South Pole, 2020c). Addressing this need, in 2018 the Gold Standard established a multi-stakeholder initiative called the ‘Value Change Programme’<sup>34</sup> in collaboration with other actors such as Danone, Mars, WWF, GHG Protocol, Climate-KIC and the Livelihoods Funds (Gold Standard, 2019). This collaboration was formed to develop guidance for companies implementing value chain interventions, or environmental initiatives to address Scope 3 emissions, also referred to as insetting. Figure 6-4 provides a visual representation of the structure of the programme.

The Value Change Programme currently consists of an intervention guidance working group and agriculture working group to develop guidance that “ensures value chain interventions are recognised and included in reporting towards performance targets” (Gold Standard, 2019). Respondent H mentioned that this programme currently focuses on soil carbon sequestration in the food sector but will soon be applied to the apparel value chain as well. During a Webinar moderated by South Pole in May 2020, CTO from the Gold Standard explained the project’s four-phase structure. As of May 2020, the project is in its third phase with the fourth working group in planning. In association with this programme, the Gold Standard released their ‘Value Change’ guidance draft report in September 2018 to support companies with ambitious Scope 3 climate commitments (Gold Standard, 2018). This report was amended in December 2019 to provide greater clarity and further options regarding certain carbon accounting practices.

<sup>34</sup> See: <https://www.goldstandard.org/articles/value-change>

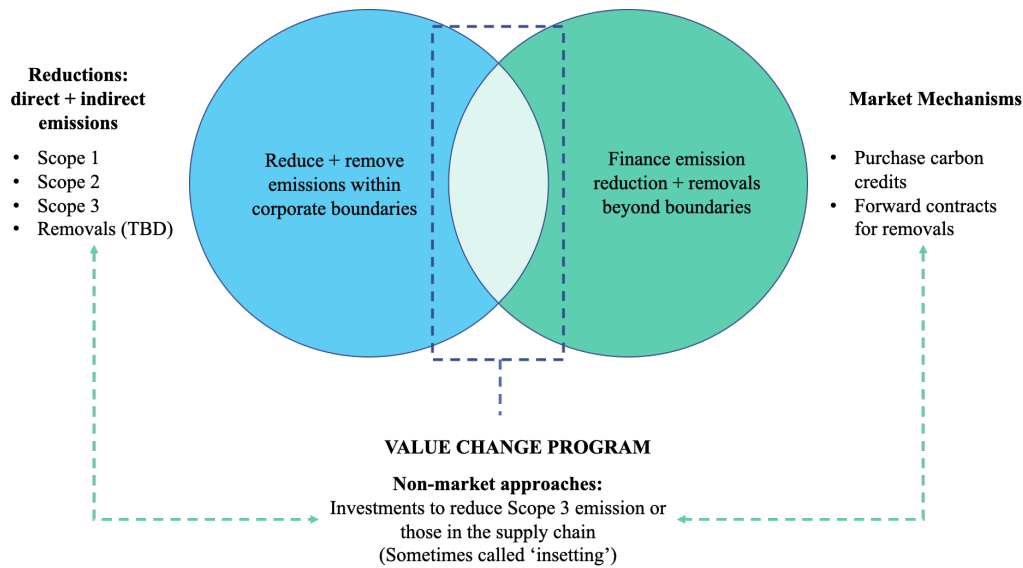


Figure 6-4: Value Change Program structure (as of May 2020)

Source: adapted from webinar presentation slides South Pole (2020)

### 6.4.7 Co-benefits associated with forestry initiatives

The summary of forestry initiatives and sustainability co-benefits in Table 6-5 revealed that companies invest in projects where there is the potential for numerous sustainability co-benefits. According to Respondents C and E, some companies have specific sustainability topics in mind when they decide on which project to invest in; these factors therefore play an important role in the company’s investment decision. For other companies, budget dictates project options and therefore sustainability factors are not a deciding factor. During Natural Capital Partner’s 2019 webinar (Natural Capital Partners, 2019), a representative of Microsoft described their involvement with reforestation projects. The company’s focus on conservation, restoration and improved land management was linked to the many associated sustainability benefits such as water shed restoration and improved biodiversity. Furthermore, the business desired to establish themselves as a trusted member of the communities in which they do business, claiming that their growth and success is predicated on this trust. By considering the most material sustainability projects for their employees and related communities, the company perceives that it can better judge relevant and meaningful investments for their company and stakeholders. As a visual communication of the apparent importance of these issues, Figure 6-5 shows the frequency that certain sustainability issues were mentioned during this research, as identified by reviewing corporate sustainability reports, webpages or during interviews. See Appendix J for details on the calculus used.

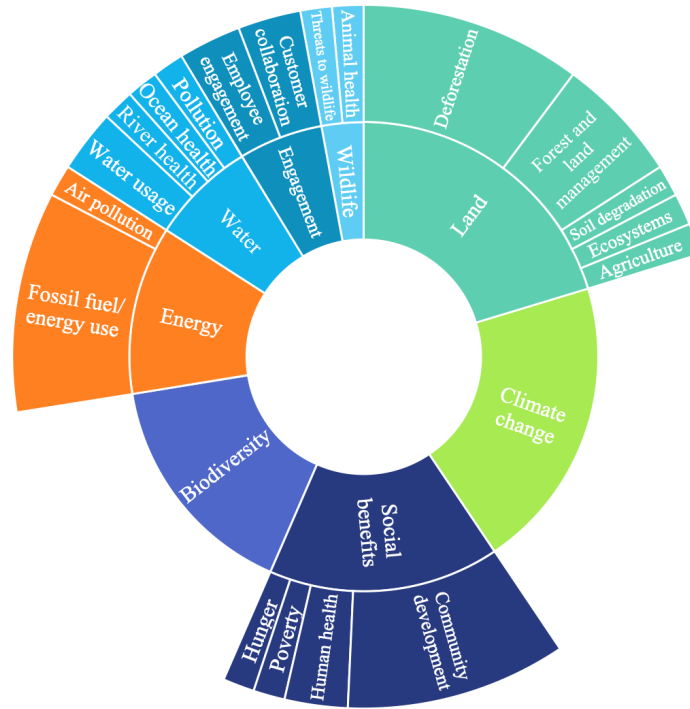


Figure 6-5: Sustainability issues and/ or co-benefits targeted through investments, as presented in Table 6-5

Source: refer to sources for Table 6-6

As apparent in Figure 6-5, climate change and biodiversity are the two most frequently mentioned co-benefits that companies try to address in their investment. Sustainability issues that fell into the ‘land’ category were also frequently mentioned, with ‘deforestation’ as an important sustainability issue to consider. A rationale for why forestry projects are so commonly mentioned or pursued is considered to be their combined sustainability benefits with not only carbon capture and storage but with other environmental and social sustainability benefits (Respondent G, personal communication, April 21, 2020). For example, projects involving improvement of forest management practices provide habitat to an immeasurable variety of flora and fauna. Additionally, it has been observed that these projects can help improve the livelihoods of many families and communities, not to mention the important ecosystem services they provide which are vital to the survival of our environment, economic and social systems (cf. Natural Capital Partners, 2019). These co-benefits can add value to a company’s sustainability communication and help justify the corporate investment to stakeholders (Respondent G, personal communication, April 21, 2020).

## 6.5 Credibility of corporate forestry initiatives

This section analyses the main concerns expressed by stakeholder groups (presented in Table 3-3) towards forestry projects and summarises the recommendations these groups provide companies with ambitious climate targets.

### 6.5.1 Challenges and concerns with forestry initiatives

This subsection analyses the main concerns raised by stakeholders surrounding corporate climate compensation actions. These are related to carbon offsets in general, then more specifically to forestry related projects and finally challenges with accounting for carbon sequestration.

## **Carbon Offsets**

Of those climate compensation methods discussed in previous sections, carbon offsetting has frequently received criticism and bad press in the past. This has contributed to several stakeholders being sceptical of their use to claim net zero or similar. A number of consultants interviewed within this study indicated doubts regarding carbon offsetting and instead discussed their preference for companies to focus on areas in which the business can have a positive impact, for example decarbonising their value chain. NGOs such as Greenpeace have expressed concerns surrounding firms, such as fossil fuel corporations, using offsets to claim net zero emission when in effect, they are not. This was described as an “ill veiled attempt to go about business as usual while marketing themselves as climate heroes” (Respondent B, personal communication, March 12, 2020). Respondent E also stressed that companies with long-term carbon neutral strategies must not reach their climate target through offsetting or negative emissions alone, this is often considered greenwashing. Several interviewees discussed their company’s concerns of being accused of greenwashing, with one mentioning the additional risk of being taken to court for making misleading claims (Respondent A & G). To mitigate these risks, companies are involving stakeholders they perceive as salient in the decision-making process for any climate-related investments. This often includes scanning media reports to understand current attitudes and opinions towards the specific project in question (Respondent G, personal communication, April 21, 2020).

## **Forestry related concerns**

Regarding forestry initiatives, some concerns include the risk of land-grabbing, where local or indigenous communities are forced off their lands when a project is created. Several concerns regarding large-scale, land-related carbon projects are reported in the IPCC’s Special Report (IPCC, 2018). Specifically, if poorly managed, these projects “can compete with food production and hence raise food security concerns” (Carillo Pineda & Faria, 2019). As tree-planting initiatives have a potential for large impact on local communities (both positive and negative), it is important these communities are considered and involved in decisions regarding project planning, development, implementation and maintenance. Multiple examples of corruption surrounding avoided deforestation and reforestation projects have also been cited (Respondent B, personal communication, March 12, 2020). Furthermore, a large concern surrounding forestry projects is the establishment and operation of monoculture plantations, where a single species is planted over hundreds or thousands of hectares. Some studies have shown that monoculture plantations can store significantly less carbon (about 1/40 less) than natural forests can over the long term (Collinson, 2019; The Economist, 2019). Greenpeace stated their concern that the recent increase in companies setting carbon neutral and net zero targets could spur a rise in offsetting ‘gold diggers’ or people trying to sell offsetting services with the sole intention of making money and potentially not following appropriate frameworks or standards.

## **Accounting for carbon sequestration**

There are some concerns related to companies that claim to achieve their climate targets with no carbon credits, yet they are engaging in large-scale reforestation projects to reduce CO<sub>2</sub> emissions. If a company is to plant their own trees, the amount of CO<sub>2</sub> sequestered must be measured. If every company was to measure this in a different way, then there is a lack of reliability and corporate initiatives cannot be compared reliably. Consequently, tree planting must be comparable across different sectors and companies (Respondent C, personal communication, March 27, 2020). Additionally, as mentioned previously, there is currently no agreed upon methodology to account for carbon sequestration from soil organic carbon or blue carbon and Scope 3 value chain emission reduction activities do not currently count



towards SBT targets. This means current corporate actions to sequester carbon within their value chains cannot be reported and attributed to their SBTs. There are also challenges surrounding the incomplete rulings and decisions regarding Article 6 of the Paris Agreement (Respondents E & F, personal communication, March 31, 2020). A view expressed by Respondent E is that new accounting systems will need to be developed as this is considered an essential backdrop of any credible carbon claim. To address the challenges and concerns addressed in this section, different actors have provided recommendations for undertaking credible forestry initiatives. These are presented in Section 6.5.2.

### 6.5.2 Recommendations for credible forestry initiatives

During this study the most common recommendation for companies looking to set credible climate targets (e.g. net zero), was to align their strategy with the science of climate change. During multiple interviews, webinars and reports, companies were urged to plan their actions in line with the Paris Agreement’s 1.5°C trajectory. Specifically, there is a call to normalise the 1.5-degree pathway and net zero and make this the new business as usual (South Pole, 2020c; UNGC, 2020a). Other recommendations included decarbonising the company and value chain emissions before engaging in compensation activities; using high-quality standards when undertaking climate compensation initiatives; being transparent about what actions the company is taking and why; involving key stakeholders in decision making and planning process; aligning mitigation approaches with the value chain; ensuring additionality of projects; and supporting the UN SDG agenda. Some of these recommendations will be analysed further. A further finding is that net-zero and similar targets must be interpreted by every company individually. The most frequent recommendations found in this study, based on the review of four practitioner reports, three webinars and five expert interviews (B, C, D, E, F) are presented in Figure 6-6. See Appendix J for details on the calculus used.



Figure 6-6: Recommendations to ensure credible carbon claims

Source: own illustration from information gathered during interview & practitioner study

### Credible carbon claims

According to South Pole (South Pole, 2020c), negative emissions are essential if the IPCC's 1.5°C target is to be achieved. A common opinion identified was that companies must ensure that 'net zero' or similar targets are not an end-of-state but rather a process. Therefore, companies should set short-term goals to measure their progress. Consultancies have started to put forth their recommendations regarding corporate carbon reductions. For example, South Pole offers information to companies about how they can achieve a credible carbon reduction process. These recommendations are summarised in Table 6-8.

Table 6-8: Recommendations to make credible carbon claims

Category	Recommendation
Footprint	Calculate footprint for all GHGs across Scopes 1, 2 and 3
Standards	Use established footprint standards
Disclosure	Disclose footprint
Reduction targets	Set reduction targets in line with the Science Based Target approach: a) 95% of scope 1 and 2 emissions; b) at least $\frac{2}{3}$ of Scope 3 emissions
Performance targets	Create short-term targets to complement long-term climate targets
Assessment of performance	Assess performance periodically to follow through on reduction commitments

Source: adapted from South Pole, (2020).

### Quality assurance

According to Respondent D, when deciding on a project to invest in, each project should be evaluated to ensure additionality, quality, overall impact (positive and negative) and beneficiaries. For companies investing in offsetting projects, a common recommendation was to use high-quality standards and to ensure third-party verification of projects. The most frequently mentioned voluntary standards and alliances included the Gold Standard, ICROA, the Verified Carbon Standard and the Climate Community and Biodiversity (CCB)<sup>35</sup> standard. According to Respondent F, credibility in this context refers to the certainty a buyer has about what is being traded on the voluntary carbon market. From a more technical perspective, the quality of a carbon offset is determined by two main components: firstly, the offset must represent at least one metric tonne of CO<sub>2</sub> avoided or reduced (Broekhoff et al., 2019a). Secondly, the project from which the offset originates should not significantly contribute to any social or environmental harm. In a 2019 report by the GHG Management Institute (Broekhoff et al. 2019) the quality of carbon offsets was associated with five criteria. This report claimed that GHG reductions or removals must be additional, not overestimated, permanent, not claimed by another entity, and not associated with significant environmental or social harm. All voluntary standards require that offsets be real, additional, measurable and verifiable (Hamrick & Gallant, 2018a).

<sup>35</sup> The CCB standard is managed by the Climate Community and Biodiversity Alliance (CCBA). More information [here](#).

### **Decarbonising the value chain**

One of the most common recommendations provided by interviewees and in webinars and guidance reports was for companies to establish processes where they already achieve a degree of decarbonisation within their own operations or realm of activities before investing in any carbon credit projects. This was viewed as an essential first step to any carbon strategy if credible claims, with high effectiveness, are to be made by the company regarding neutralising its impacts on climate (Carillo Pineda & Faria, 2019). In an interview with Respondent H, H&M's position at the time was that it was aware of the steps required by science, but it was still unsure how to achieve their climate positive target in the most credible way. H&M Group is focusing on achieving deep decarbonisation first, by looking into renewable energy and energy efficiency, before engaging in other activities, not least because these activities are easy to prove and are meaningful to most stakeholders. The company claims to want to reduce emissions at a pace that is in-line with the 1.5°C trajectory. From the information gathered in this research, it appears that climate or carbon strategies should follow a process for decarbonisation following: avoid → reduce → substitute → compensate. 'Avoid' refers to preventing emissions within and outside of the value chain, for example, by increasing the use of virtual meetings to avoid travel or by switching to less carbon-intensive suppliers or materials. 'Reduce' refers to lowering emission intensity by improving energy efficiency in production processes or using electric cars for example. To 'substitute' refers to replacing electricity or fuel use with lower-carbon alternatives, such as biogas or hydrogen fuel. Finally, compensate refers to any investments in carbon removal programmes to compensate for residual emissions.

### **Aligning compensation activities with the business value chain and SDGs**

Multiple interviewees saw credibility in aligning mitigation approaches with the value chain of the company. For example, IKEA Group has a strong involvement with timber and therefore can align projects surrounding forest management and timber practices with their value chain and operations. H&M Group has also considered aligning any future climate compensation activities with their value chain (Respondent H, personal communication, April 23, 2020). For example, with its large involvement with cotton farming, H&M Group has considered soil carbon sequestration connected with cotton farmers. Furthermore, Elopak has financed emission reduction projects that relate to its core material: wood fibre (Natural Capital Partners, 2020b). Other experts recommended supporting the SDG agenda with climate strategies. This is rooted in the belief that the largest emissions are expected to come from developing countries. As such, there is great potential to avoid emissions in these economies (South Pole, 2020c).

In summary, this research has produced seven important insights regarding approaches that will deliver superior trust, legitimacy and credibility. **First**, for a corporate climate strategy and targets to be considered credible by key stakeholders, they must be aligned with science and follow the appropriate steps to ensure 1.5°C trajectory. Therefore, climate targets should follow the SBT approach. **Second**, corporate climate strategies must be verified by following stringent standards and ensuring third-party verification. **Third**, companies must have a decarbonisation plan in place before compensating for residual emissions. **Fourth**, companies must be transparent about what they are doing and why. **Fifth**, connecting climate compensation activities with the business value chain and supporting the SDG agenda can enhance credibility and enrich the company's sustainability story. **Sixth**, key stakeholders to the company (e.g. see Figure 5-1) should be consulted in the decision making and planning process. **Finally**, this process is different for every company and therefore each step must be interpreted individually.

## 7 Discussion

This chapter: places the research in the context of the current literature and practical debate of corporate climate compensation; highlights the contributions to the state of knowledge; discusses the importance of findings both in practice (i.e. for corporations) and in academia; then critically reflects on methodological and practical limitations.

### 7.1 Overview of findings and their significance

This work departed with views such as those of Weber (2018) that the empirical literature on global environmental governance largely centres around collective action, and that individual, firm-level actions were under-researched. This work indicates that there remains little clarity and guidance but that there is a great deal of action in the field, particularly from industry. Further, this research has added to the body of knowledge via provision of a) field examples of firm-specific, forestry-related initiatives that proactive companies are investing in or considering as part of their climate strategies, and b) knowledge of the sorts of demands being projected related to unilateral and collective efforts from industry to meet the demands of stakeholders who desire action despite lack of global governance in such areas.

#### 7.1.1 Addressing RQ<sub>1</sub> & RQ<sub>2</sub>

This subsection presents and discusses the major research findings and their implications and answers to the two research questions stated in 1:

- **RQ<sub>1</sub>: How are companies with investments in forestry projects communicating their climate targets and compensation activities?**
- **RQ<sub>2</sub>: When is a company's climate compensation investment in a forestry project seen as credible by salient stakeholders?**

Regarding RQ<sub>1</sub>, the main terminologies and forms of corporate guidance used to support corporate climate targets and strategies were outlined, types of forestry-related initiatives documented, and sustainability issues and/or co-benefits identified. This work had a point of departure that credibility would be a key theme. Relating to RQ<sub>2</sub>, concepts of credibility were mentioned during all stakeholder and company interviews. Many precursors of credibility have been addressed in answering RQ<sub>1</sub> since much of how a company is communicating their climate targets and compensation activities is predetermined by the desire to do so in a way that is legitimate in the eyes of stakeholders and critics.

#### ***Climate communication & terminology***

The results provide clear evidence of a recent rise in forestry-related initiatives being used in practice, as reported by Forest Trends' Ecosystem Marketplace (2019). This trend was attributed to the Paris Agreement's 1.5°C objectives as well as Greta Thunberg's influence, a similar finding to Blum & Lövbrand (2019). Furthermore, the rise in demand for forestry initiatives was attributed to forests' ability to store carbon from the atmosphere, as well as the perceived need to pursue multiple co-benefits often associated with these projects. This supports reports from the IPCC (2019b), United Nations (2020) as well as research by Weber (2018), ICROA (2018) and Kountoutis et al., (2014) that forestry projects can provide co-benefits. The growing use of forestry initiatives indicates a corporate reaction to stakeholder pressure for improved environmental action and disclosure, supporting research by Hahn et al. (2015). Aligning corporate activities with the Paris Agreement's 1.5°C trajectory is also a way to manage business, financial and reputational risk by ensuring actions are considered legitimate by stakeholders the firm considers salient. It was found to also be a way to pre-empt

and prepare for the added regulatory pressures that will likely be enforced in the future, supporting views expressed by Dahlmann et al. (2019).

While this work has reiterated and enriched the views of past literature, it has also provided new insights. This research identified a general lack of transparency regarding corporate communications on climate targets. With the absence of a clear set of rules surrounding climate claims, companies are able to make whatever claims they want. Even at the degree of scrutiny direct to such issues – such as the analytical effort applied in this research – it is difficult to discern the details of each corporate climate goal, which makes it difficult to compare company targets and related initiatives. For example, each company addresses different scopes of emissions under their climate claim/target (e.g. net-zero for operations or carbon neutral for scope 1 and 2). Companies also apply different definitions for what they consider their value chain. For example, some companies state they address Scope 3 emissions; however, this could refer to business travel only, and therefore not include supply chain emissions at all. Furthermore, companies communicate their compensation investments differently, making comparison challenging. For example, Sky communicates its ‘investments in forestry’ as involving projects related to mangrove restoration and reforestation. When these investments are looked into further, it becomes apparent that the company is investing in REDD+ and other offsetting projects; therefore, Sky’s compensation actions are essentially carbon offset investments that have been presented under a different title. The inconsistent usage of terms, such as carbon neutral and net-zero being used interchangeably, could have an overall negative effect on the value such climate targets have for stakeholders. In this light, Cho et al., (2012) and Mousa, (2004) advise that corporate communication should provide evidence of the company’s positive impacts on society and the environment, and further, claim that if this is not done, then it is likely to hinder the positive effects that social and environmental reports can have on improving company image and reputation and confirming the legitimacy of operations.

Results also signify a move away from terms such as ‘offsets’ towards ‘nature-based solutions’ and more climate-focused terminologies. This is perhaps a result of the IPCC using these terms within their 2019 special report on Climate Change and Land (IPCC, 2019b), thus influencing a change in corporate communication of climate actions. This change may also be an attempt to avoid being connected to the negative connotation that sits with the word ‘offset’ after bad press in the past. The results highlight that some companies are emphasising their ambition to avoid using carbon offsets to achieve their climate targets. This implies that industry is noting that stakeholder critique is held to be valid and is thus acting proactively to move ahead of critics. The fact that some companies are consciously shifting away from using carbon offsets will most likely raise the expectations that stakeholders have for others. For example, if a company is able to achieve a climate positive strategy without using carbon credits, stakeholders may demand the same from others. Thus, this analysis considers this evidence that corporate ambitions must change to remain acceptable to stakeholders, not least due to the apparent escalation of stakeholder expectations as more companies step away from ‘offsets’. It is unclear, however, how these companies plan to address residual emissions through other initiatives since carbon credits are a means to monitor the CO<sub>2</sub> impact from a project. Furthermore, despite the ambition to avoid carbon credits, when a company wants to address its Scope 3 emissions, there are still uncertainties regarding who is responsible for indirect emissions, as well as a lack of guidance on how to account for the reductions in supply chains (e.g. through soil carbon sequestration) and inadequate recognition of corporate investments made beyond direct operations. Currently, actors are attempting to resolve these ambiguities, which will likely clarify the uncertainties around climate compensation in the coming years.

### **Corporate carbon guidance**

Results indicate that companies have uncertainties surrounding what terminology they should choose (e.g. carbon neutral or climate positive), what ambition or scope to select (e.g. all GHG emissions or only carbon) and what mitigation approach to select and how to implement it (e.g. offsets, insets, collaborations etc.). This research also highlights a major gap in robust definitions for climate terminology as well as in expert guidance to help evaluate a company's overall strategic approaches to climate change. The lack of available sector-specific guidance and clarity amongst actors regarding definitions and credible pathways suggests that companies are struggling to create legitimate carbon strategies that will be accepted and approved by stakeholders. Results also show the tendency for frameworks and guidelines to develop bottom-up, as evident by the climate positive framework initiated by IKEA Group, H&M Group, Max Burgers and WWF (WWF, 2020a). This reflects the process of standardisation that many voluntary environmental initiatives have followed as they emerge from ideas into reality. These bottom-up processes often surround sustainability work, as has happened in relation to forestry and fishery, for example in the development of the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC) certifications. Other studies have found bottom-up approaches suitable for the development of frameworks or mechanisms that relate to sustainable environmental management (Fraser et al., 2006; Magee et al., 2013).

Although more robust guidance is needed, results revealed that companies are inclined to follow the guidance of actors such as SBTi and GHG protocol as they are considered the 'experts' in the corporate climate action arena. This study provides evidence that these actors are viewed as the most 'legitimate' of all bodies operating in this space; they are perceived by many as desirable, proper, and appropriate in their values and definitions. Results from this study also indicate that following the advice of these science-based actors is considered credible amongst key stakeholders. These results indicate the growing relevance of non-state actors in shaping global environmental governance, supporting research by Falkner (2003), Pattberg (2005), and Weber (2018). These actors are aware of the gap that exists in guidance and are currently developing guidance for a science-based approach for net-zero in the corporate sector. This relates to a major finding of this research: that there are continuous updates and developments in this field, as exemplified by the numerous initiatives and working groups that were formed, implemented and amended as this research took place. For example, the Value Change Programme was in its third phase (out of four) to address value chain emissions, SBTi released a draft guidance document for climate neutrality in the corporate sector, and there were multiple webinars released on the net-zero and climate positive path, and business' reforestation efforts across Europe (Natural Capital Partners, 2019; Quantis, 2020; South Pole, 2020c). Additionally, Article 6 of the Paris Agreement was still under negotiations with further doubts regarding its resolution caused by the postponement of COP26 to 2021 due to COVID-19 (UNFCCC, 2020).

### **Forestry-related initiatives at firm level & sustainability co-benefits**

While all of the companies reviewed in this study had ambitious climate targets, they took varying levels of approaches to reach those goals. Where a number of previous studies have focused on GHG emission management (Hoffman, 2008), carbon footprints (Weinhofer & Hoffmann, 2010), and supply chain measures (Weinhofer & Hoffmann, 2010) separately, this research approached a combination of these corporate carbon management initiatives, providing a more holistic view. Results imply that some companies applied a more hands-on approach to climate compensation, such as collaborating with partners to develop projects related to their business value chain or even purchasing land to develop and manage woodland. Alternatively, some companies were more hands-off in their approaches and invested in pre-

existing offset projects where the responsibility of development, maintenance and reporting sits with another entity. See Figure 7-1 for examples of corporate actions along a spectrum of company involvement.

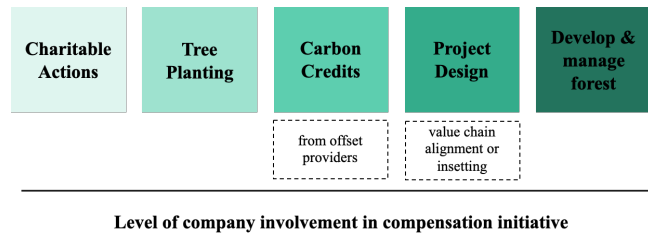


Figure 7-1: Level of company involvement in compensation initiatives

Source: own illustration based on findings and analysis from practitioner and interview study

Here, this is held to imply that these corporate approaches to climate compensation have different motives for their compensation activities. These findings support research by Dahlmann et al. (2019), who identified that companies might have symbolic or substantive intentions to improve environmental performance. Companies such as Microsoft that set goals to address not only its current emissions, but its entire historical carbon footprint, clearly have substantive intentions behind their actions. Such actions are raising the bar for corporate responses to climate change action. Also, by disclosing strategic carbon management information, companies such as Microsoft are assisting other companies in achieving net-zero or similar business models and/or climate strategies. Companies that take more hands-off approaches could be attempting to reduce business risk by investing in pre-existing projects that have been tested before and therefore have less uncertainty compared to insetting projects. Companies involved in planning and developing projects with other stakeholder groups may be trying to influence the decisions made by non-state actors that will impact the company in the future. This is supported in stakeholder theory (Buzzelli, 1991; Freeman, 1984) where a company's competitive advantage is interconnected with its interactions and treatment of those stakeholder groups.

Results also demonstrate that scales of investments or promises made by companies differ. For example, AstraZeneca has pledged to plant 50 million trees over the next five years, compared to 3 million trees planted by Nestlé over the same time frame. However, this research found a lack of transparency surrounding how these forestry initiatives are intended to be used by the company. Specifically, it is unclear if the company is undertaking tree-planting activities as a form of charitable action, CSR, or if the projects will be used to claim carbon benefits. It is also unclear what percentage of the firm's emissions are intended to be covered by such projects if the company is to compensate for residual emissions. This research found evidence that stakeholders place value on transparency in any credible carbon strategy. Additionally, this research reveals that companies target various sustainability issues and/or co-benefits through their investments. Co-benefits associated with investments were found to help enhance the company image, add to their corporate sustainability story and help justify investments to company stakeholders. This supports research by Kountouris et al., (2014) who identified that companies are driven to invest in carbon projects that have accompanying co-benefits and relevance to the business for similar reasons. By acknowledging the sustainability projects of significant value to their salient stakeholders, companies can ensure their actions are perceived as legitimate. It should be noted here that this research was pursuing *how* companies are communicating their actions, however, the results continually touch upon *why* companies are undertaking these decisions. This was not intended thus this research has

identified that a more in-depth study into *why* companies are selecting specific actions is an area for future research.

### Credible climate targets and strategies

Numerous precursors of credibility have been mentioned in the preceding sections of this chapter. Figure 7-2 provides an overview of the key recommendations that a company may follow to warrant a credible corporate climate strategy.

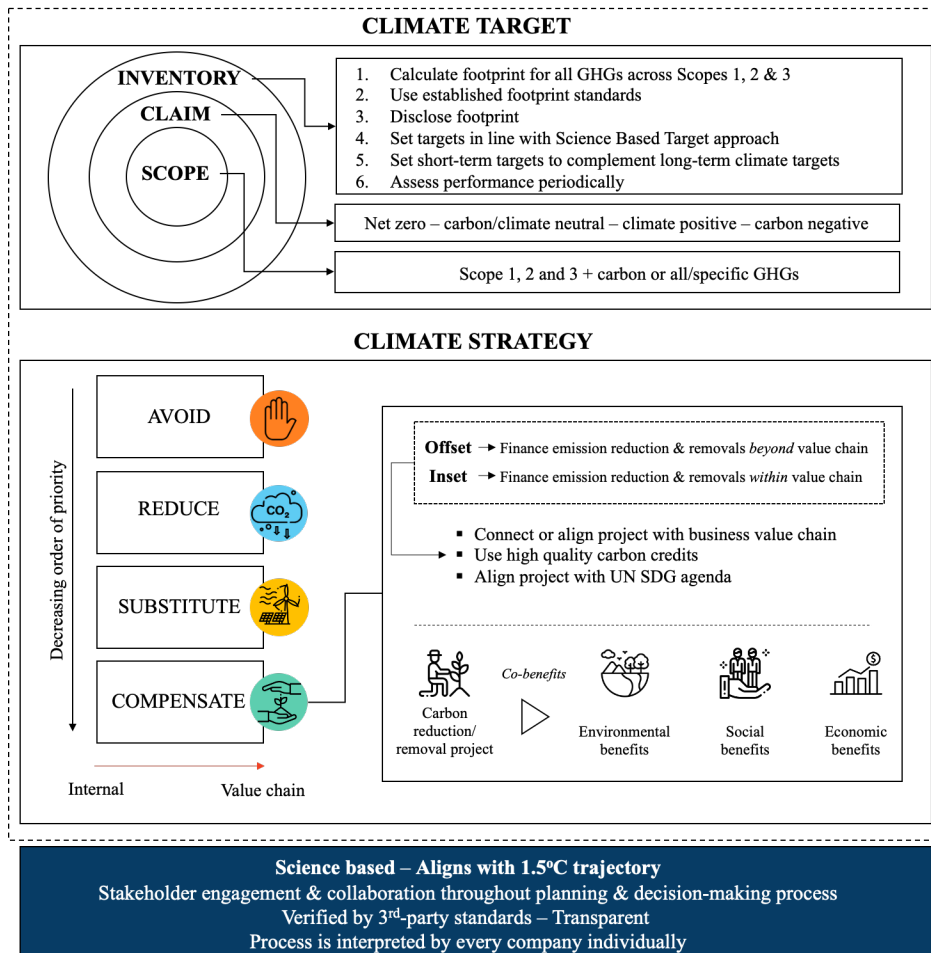


Figure 7-2: Key recommendations for developing a credible corporate climate target & strategy

Source: own illustration based on findings and analysis from practitioner and interview study

Results highlight the importance of aligning climate strategies, management and activities with the science of climate change. There are strong opinions that the 1.5°C trajectory and efforts to achieve net-zero should become the ‘new normal’. For those companies aiming to achieve meaningful, impactful and credible change, this work provides evidence that companies need to follow the advice of science-based actors such as the SBTi and GHG Protocol if they desire their efforts to be approved of by stakeholders. Furthermore, companies need to ensure they have a robust decarbonisation plan in place before investing in any carbon compensation projects. This is indicated in Figure 7-2 as a decreasing order of priority from avoid → compensate. Furthermore, as indicated by the red arrow in Figure 7-2, emission avoidance, reductions, substitutions and compensations can be applied to a company’s operations or their entire business value chain. It should be noted that while efforts to avoid and reduce emissions are prioritised above compensation initiatives, these actions can run concurrently.



Compensation actions such as reforestation programmes and improved forest management are vital if the Paris Agreement's 1.5°C objectives and net-zero ambition are to be met. This research also highlighted the benefits these initiatives can have for the environment and society. Therefore, there is nothing prohibiting an ambitious company from setting SBTs while also working towards the capture and storage of emissions through natural carbon sinks.

### **7.1.2 Implications for practitioners and academia**

This research provides useful insights for practitioners as well as an academic perspective on 1) the current terminologies and forms of corporate guidance that exist or are developing to support corporate climate targets and strategies; 2) the key forestry-related initiatives companies are investing in or considering to address residual emissions; 3) the sustainability co-benefits associated with such investments; and finally 4) the credibility of climate targets, strategies and compensation initiatives from the perspective of key stakeholders. Understanding the best-practice process and development of corporate initiatives as well as stakeholder views of forestry projects is relevant to practitioners such as companies, consultants, voluntary initiatives, NGOs and research institutes. These findings can be applied to companies that are considering investing in these types of projects outside of or inside of their sphere of influence, i.e. an offset or an inset. Figure 7-2 provides companies with a summary of key recommendations that can be applied when developing a climate target and/or strategy. Since this area is constantly evolving, it is valuable for companies to be aware of the current thoughts and developments in the field. New knowledge and practice gaps identified in this research include the uncertainties that exist surrounding what terminologies, ambitions and mitigation approach a firm could select. Also, there is a lack of clear, robust definitions and guidance to help companies identify a credible climate target and strategy. Further, regarding value chain emissions, there are ambiguities surrounding a) where responsibility for emissions lies, b) inadequate recognition of investments and c) activities to resolve these uncertainties. These indicate suitable areas for future research, further outlined in Chapter 8.

## **7.2 Methodological reflections**

### **7.2.1 Case study research design**

The dynamic nature of climate compensation and the evolving approaches companies are taking to compensate for residual emissions show that this is still a recent phenomenon. Consequently, the author opted for a broader research approach and targeted sixteen companies currently involved in some way with forestry-related initiatives as 'cases' for the present study. While a broad range of companies and corporate initiatives was reviewed in this research, some companies provided very little public information about what they were doing or why, limiting the author's abilities to collect in-depth inputs about specific factors. As a result, the analysis is much less detailed for some cases compared to others. One way to circumvent this would be to address more cases and be rigorous in eliminating cases where little information was obtained. Interviews with more companies could have yielded more detailed data including opinions and current thoughts on the dynamic study area. However, as this is a relatively new and developing area, with over 50% of companies in this study still developing their position or strategy regarding the use of forestry-initiatives at the time of research, company representatives were possibly not able to disclose their viewpoints. This study highlighted that consultants appear to be in a more informed position in this area than companies. As companies tend to rely on consultants for advice in this field, future studies could focus on interviewing more consultants and voluntary standards.

## **Sampling**

The chosen sample of a study typically impacts the reliability and generalisability of the findings. Therefore, when analysing the findings of this thesis, each interviewee and the stakeholder group they represent should be kept in mind. In this study, the sample of companies reviewed was identified by examining all signatories to the UN Business Ambition for 1.5°C list as of April 2020. To identify those companies with investments in forestry-related projects or offsetting and carbon-removal projects more generally the author used the following search terms when scanning company websites and reports: ‘offset’; ‘credit’; ‘carbon’; ‘invest’; ‘project’; ‘tree’; ‘forest’. Later in the research process, it was found that companies have started to avoid using the terms ‘offset’ and ‘carbon credit’. Instead, public corporate communication had shifted towards using terms such as ‘nature-based solutions’, ‘natural capital’, ‘forestry investments’ or ‘methods to combat climate change’. This implies that the chosen screening process may have overlooked certain relevant and eligible companies, thus impacting the results of the present study. The inputs of further relevant companies would have provided more information and, potential, novel approaches to corporate climate compensation. Furthermore, some of the companies identified as relevant in the first screening (see Table 3-1) that were then eliminated in the second screening have since published information regarding relevant offsetting practices (see Burberry, 2020).

As described in Chapters 1 and 3, the stakeholders chosen as ‘salient’ to this study included NGOs, voluntary initiatives and consultancies. Only two representatives from environmental NGOs were interviewed, meaning a limited amount of information could be gathered from these specific stakeholder perspectives. Also, no local-NGOs, policymakers or government officials were interviewed. The inputs of any one of these actors would have provided more diverse inputs regarding corporate climate compensation and the current landscape of forestry-related initiatives. It should be noted here that the author contacted over thirty individuals (13 companies, 5 NGOs: global and local, 13 experts: consultancies and research institutes) for interviews and received only nine positive responses.

### **7.2.2 Interviews**

This research used semi-structured interviews as the main source of primary data collection. Following on from the previous paragraph, interviewee selection, availability and background should be kept in mind when understanding the findings of this research. Interview responses can be influenced by the respondents’ own views and agendas. For example, interviewees representing consultancies that also act as ‘offsetting partners’ for companies will likely have some bias towards promoting offsetting as a viable tool to be used by companies wanting to compensate for residual emissions, more so than environmental NGOs. Furthermore, some company representatives may have been hesitant to share detailed information regarding their climate strategy formulation and ideas at the time, as this information might have been sensitive and/or confidential. This stated, data gathered from interviews were in-depth and revealed new knowledge, which enriched the present study and aided in improving subsequent interview questions and discussions.

As mentioned in Chapter 1, the response rate for interviews was lower than expected. Generalisability of findings may therefore be limited due to the relatively small set of interviews conducted. However, where interviews were not possible, data was collected from alternative sources such as sustainability reports, corporate websites, webinars and media. Due to the dynamic nature of this research area, new initiatives, working groups, standards and upcoming webinar discussions were often revealed to the author during interviews. As additional relevant topics were introduced, they were incorporated into the question list for following interviews.

Consequently, the interview guides presented in Appendix D, E and F changed as more information was gathered through the practitioner and interview study. Exposure to current industry discussions and working groups allowed new areas to be incorporated into the research objectives and exposed new areas to be considered for research.

## 8 Conclusions

This thesis has contributed to a rapidly evolving field by delivering two essential outcomes: 1) a detailed description of the current landscape of corporate climate compensation and the different forestry-related initiatives companies are investing in to achieve ambitious targets; and 2) an examination of how, when and where a company's climate compensation actions are perceived as credible from the perspective of salient stakeholders. The heightened awareness of global energy consumption's impact on environmental degradation has resulted in a substantial rise in the number of companies pledging to set ambitious climate targets to achieve a net-zero future. Furthermore, the Paris Agreement's decarbonisation goals and the subsequent IPCC Special Report on 1.5°C have increased corporate climate discussions and led to the development and adoption of numerous initiatives such as the UNGC's Business Ambition for 1.5°C. This research has highlighted the evolving field of climate compensation and has provided evidence for the current growth and development in forestry-related initiatives used in the corporate sector. It has also uncovered various uncertainties that exist surrounding the credibility of climate claims, strategies and the mitigation approaches selected to address residual emissions. Furthermore, it highlights numerous areas of continued development, such as in expert guidance to assess corporate climate strategies and to address Scope 3 emission investments. In light of these findings, it is clear that there is an urgent need for actors in the field to achieve alignment on definitions and credible approaches to net-zero to avoid confusion and to drive ambitious and impactful climate action. Companies must align their practices with science and normalise the 1.5°C pathway and net zero if we are to avoid the worst effects of climate change. Recommendations for practitioners and areas for further research to advance the field of credible climate compensation are outlined.

### 8.1 Recommendations for practitioners

This research provided numerous insights that can help ambitious companies navigate the uncertainties prevailing in this field. Key recommendations related to the development of a credible climate target and strategy are presented in Figure 7-2 and summarised below:

- Ensure the climate claim, targets and strategy are **science-based**.
- Be **transparent** in internal and external communication about *why* specific corporate claims, targets, strategies and compensation initiatives were chosen.
- Develop a robust **decarbonisation** plan before offsetting emissions.
- Consider positive *and* negative impacts that compensation projects may have on the local environment, communities and economy of the country in which they take place.
- **Collaborate with stakeholders**, specifically environmental NGOs, multilateral organisations (e.g. CDP, GHG Protocol), and other proactive companies to be at the forefront of any future decision-making. For example, initiatives such as the Value Change Programme can have real influence on how companies address their Scope 3 emissions in the future, therefore, companies can benefit by getting involved in these discussions and working groups early on.
- **Stay updated** with new initiatives, working groups and relevant discussions. Furthermore, keep track of other corporate initiatives and strategies as they develop.

For those actors creating sector-specific guidance on how a company should define and work towards their climate targets:

- Ensure the guidance is aligned with the SBTi, GHG protocol and market standards.

- Avoid a mixture of very ambitious and very lax climate action falling under the same claim. A very ambitious company and non-ambitious company should not be able to make the same climate claim.

## 8.2 Future research

The findings presented in this thesis encourage further interdisciplinary research on corporate climate compensation and the governance activities companies undertake independently of other actors (e.g. inseting). A general finding from this research is that the field of practice is ahead of the academics. In light of this, the following areas of research are posed:

**First**, the rising political and societal expectations placed on corporations indicate the need for further research to understand corporate behaviour and self-perception. Specifically, more research is needed to understand modes of corporate actions and what is driving this motivation, for example, *why* do companies choose to invest in certain initiatives over others and what are they trying to achieve with their actions? **Second**, during this research, all initiatives related to natural carbon sinks (e.g. afforestation/reforestation, land-use change, soil carbon sequestration, etc.) were referred to as ‘forestry-related initiatives’. However, during this research, it became apparent that forestry could be classified as a sub-category of ‘nature-based solutions’ along with soil organic carbon and blue carbon. Going forward, a more robust definition of the types of initiatives and subsequent groupings could be achieved. **Third**, this research found a clear gap in sector-specific frameworks and guidance to help companies achieve ambitious climate targets through the most appropriate and credible way. Future research could explore the developments of corporate carbon frameworks, guidance and definitions over the past decade. Large changes and learnings have resulted in recent years from voluntary initiatives and standards testing and amending their frameworks and methodologies. Therefore, further research could highlight these developments and follow up on the existing uncertainties, as well as the inadequate recognition of corporate value chain investments and the activities to resolve these uncertainties that are currently being developed. A **fourth** area of future research involves addressing the views of actors that were not included in this study, such as local-NGOs, policymakers or government officials. Inputs from these actors could provide valuable insights for example on how forestry-related projects are implemented on the ground; if and how local communities are involved in the planning and development process of projects; how policymakers perceive these corporate actions; and how developments with Article 6 of the Paris Agreement are expected to impact these activities. **Finally**, as this is an extremely dynamic area, there are many unanswered questions up for debate. It could be valuable for further research to consider: when a company should use carbon credits and for what claims; the roles of and differences between ‘reductions’, ‘removals’ and ‘avoided emissions’; if there are types of credits and/or projects that are more suited for specific emission sources (e.g. is one project more suited to compensate for carbon emissions versus other GHG emissions?); what are the benefits/weaknesses/drivers/barriers of inseting versus offsetting?; and finally, what claims can be made for what activities? (e.g. is carbon neutrality a stepping-stone in the journey to net zero?).

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## Appendix A: Thesis project brief for interviewees

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### Corporate Climate Compensation through Forestry Projects

#### Thesis Brief

This research aims to investigate the climate compensation options available for corporations with ambitious climate targets (e.g. carbon neutral, climate neutral, carbon net zero), specifically surrounding forestry-related initiatives.

#### Project Aim

My aim is to provide a detailed description of the current landscape of corporate climate compensation and the different forestry-related initiatives that companies are investing in to meet ambitious climate targets. This research will consider the actions companies are taking to address residual emissions to achieve ambitious climate goals; the sustainability issues and/or co-benefits companies are targeting through their investments in forestry projects and the views of different stakeholders towards these corporate actions.

#### Your Involvement

I would love to hear your perspectives from your experience and expertise in this field through an interview. This would be valuable for my understanding of current corporate practices in this area.

- **Duration:** no longer than 1 hour
- **Date:** between 4<sup>th</sup> March to 27<sup>th</sup> April 2020 (subject to your availability)
- **Medium:** phone call, Skype or Zoom (as per your preference)

The findings of this research will provide useful insights for practitioners as well as an academic perspective into current corporate climate compensations practices, and stakeholder opinions regarding forestry initiatives and projects, all of which might be of value to your work.

#### Confidentiality Considerations

All names will be anonymised. At the start of the interview I will ask for permission to record, to include your responses in my analysis, and to refer to your position and company. If I use any direct quotations in my thesis, I will run them past you first to obtain permission. This research is done in collaboration with Tetra Pak AB who is interested in understanding the current corporate climate compensation practices surrounding forestry carbon offsets.

## Appendix B: Insetting management strategy

This appendix provides a summary of insetting characteristics with definitions and details for companies to consider when developing an insetting management strategy.

Table B-1: Considerations when developing an insetting management strategy

Insetting characteristic	ICROA definition	Details
<b>Type of investment</b>	“The company invests in the development of a carbon offset project within the perimeter of its supply chain” (p.9)	<p>Company must financially invest in project development and maintenance to be able to account for the project in its insetting strategy and communication.</p> <p>Projects can be developed by a) the company itself, b) suppliers of the company, c) a reputable third-party organisation.</p>
<b>Scope of activities</b>	“Any project where GHG emission reduction units are generated” (p.10)	<p>“Any project that generates GHG emission reduction units that respect all the principles of international standards recognised by ICROA” (p.10) These include:</p> <ul style="list-style-type: none"> <li>▪ Additionality</li> <li>▪ Uniqueness</li> <li>▪ Measurability</li> <li>▪ Verifiability</li> </ul>
<b>Location of investment</b>	Within the supply chain or communities associated with the supply chain	<p>A supply chain activity can include raw material production and sourcing, product transformation and transport.</p> <p>A supply chain community is any stakeholder with a direct link with the company’s supply chain.</p> <p>The project perimeter = geographical zone in which the company/supplier/client country act to obtain GHG mitigation</p>
<b>Third party verification</b>	“The insetting project must be verified by a carbon offset standard, recognised by ICROA” (p.11)	Carbon offsetting standards may include internationally recognised standards & national standards identified under the ICROA government scheme policy.

Source: adapted from *Davies (2016), p.9-11.*

## Appendix C: Formal Review Instances

Date	Section	Reviewer
12 <sup>th</sup> February 2020	Research design	IIIIEE staff
18 <sup>th</sup> February 2020	Introduction	Group supervision
24 <sup>th</sup> February 2020	Introduction + theoretical & conceptual foundations	IIIIEE supervisor
4 <sup>th</sup> March 2020	Methodology	Group supervision
27 <sup>th</sup> March 2020	Methodology	IIIIEE supervisor
13 <sup>th</sup> April 2020	Literature review + specific sub-sections	IIIIEE supervisor
24 <sup>th</sup> April 2020	Findings & analysis	Group supervision
8 <sup>th</sup> May 2020	Findings & analysis	IIIIEE supervisor
	Full thesis draft	Tetra Pak supervisor
17 <sup>th</sup> May 2020	Discussion	IIIIEE supervisor



## Appendix D: Interview guide for a company

<p><b>Part 1: Introductory questions</b></p>
<ol style="list-style-type: none"> <li>1. Is it possible to record the interview? Information and names will be treated with full confidentiality.</li> <li>2. Could you please tell me about your role at [insert company name]?</li> <li>3. Could you provide me with an overview of the climate compensation activities [insert company name] works with and have worked with in the past?</li> </ol>
<p><b>Part 2: Project selection &amp; A/R approach</b></p>
<ol style="list-style-type: none"> <li>4. What factors were most important to consider when deciding on the type of initiative to undertake/invest in?</li> <li>5. Why was [X] forestry project (adapt to company) selected as a preferable project over others?</li> <li>6. Once the decision was made to invest in a project related to forestry to achieve the climate target, how did [insert company name] decide which specific approach to take to address residual emissions? (e.g. offset, inset, collaboration with NGO...)</li> <li>7. If [insert specific approach] was chosen as a preferred method, how did [insert company] decide on this approach? Why was this the desired approach?</li> </ol>
<p><b>Part 3: Sustainability impacts</b></p>
<ol style="list-style-type: none"> <li>8. In your decision-making process, did you consider specific sustainability impacts related to [insert project]?</li> <li>9. If so, how did you determine that this type of project/ approach had the least negative sustainability impacts?</li> </ol>
<p><b>Part 4: Alignment with business practices/value chain</b></p>
<ol style="list-style-type: none"> <li>10. When deciding on the type of project to invest in, was it important to align the project type with your sustainability agenda?</li> <li>11. Was it important that the project aligned with your business practices/ value chain?</li> </ol>
<p><b>Part 5: Stakeholders &amp; credibility</b></p>
<ol style="list-style-type: none"> <li>12. Which actors within [insert company name] were involved in this investment decision?</li> <li>13. How did the decision makers in [insert company name] decide on the credibility of the project?</li> <li>14. What external actors did you use/rely on for advice about this investment process? (e.g. voluntary standards, consultancy groups, NGOs...)</li> <li>15. What external stakeholders do you find to be the most important to consider when making this investment decision?</li> <li>16. If you used a specific voluntary standard, which one did you decide to support and why?</li> <li>17. What challenges did you experience/anticipate when investing in this type of project?</li> </ol>

## Appendix E: Interview guide for an NGO








Part 1: Introductory questions
<ol style="list-style-type: none"><li>1. Is it possible to record the interview? Information and names will be treated with full confidentiality.</li><li>2. Could you please tell me about your role at [inset organisation]?</li><li>3. Could you provide me with an overview of how [inset organisation] deals with topics related to voluntary environmental corporate initiatives, carbon offsets and climate neutral/net-zero ambitions?</li></ol>
Part 2: Concerns & sustainability impacts
<ol style="list-style-type: none"><li>4. What would you say are [inset organisation]'s main concerns towards carbon offset projects in general?</li><li>5. More specifically, what are your main concerns towards forestry projects?</li><li>6. Are there specific sustainability impacts that you associated with these types of projects?</li><li>7. How would you suggest a company go about mitigating/reducing the risks of these associated sustainability impacts?</li></ol>
Part 3: Credibility of carbon removals
<ol style="list-style-type: none"><li>8. If a company is to purchase offsets to compensate for residual emissions, what do you think are the key factors they should consider?</li><li>9. And what are key factors you consider when assessing the performance of a company?</li><li>10. Do you see a benefit in investing in A/R projects locally as opposed to in a geographical region separate from the company in question? (i.e. does location matter?)</li><li>11. Do you have any concerns over the increase in companies striving for carbon neutrality and therefore potential increase in purchase of carbon offsets?</li></ol>





## Appendix F: Interview guide for a consultant/expert

<p><b>Part 1: Introductory questions</b></p>
<ol style="list-style-type: none"> <li>1. Is it possible to record the interview? Information and names will be treated with full confidentiality.</li> <li>2. Could you please tell me about your role at [inset organisation]?</li> <li>3. Could you provide me with an overview of how [inset organisation] deals with topics related to voluntary environmental corporate initiatives, carbon offsets and climate neutral/net-zero ambitions?</li> </ol>
<p><b>Part 2: Credibility of carbon removals</b></p>
<ol style="list-style-type: none"> <li>4. If a company is to purchase offsets to compensate for residual emissions, what do you think are the key factors they should consider?</li> <li>5. And what are key factors you consider when assessing the performance of a project (offset or inset)?</li> <li>6. Do you see a benefit in investing in projects locally as opposed to in a geographical region separate from the company in question? (i.e. does location matter?)</li> <li>7. Do you have any thoughts regarding the increase in companies striving for carbon neutrality/net-zero emissions and therefore potential increase in purchase of carbon offsets?</li> </ol>
<p><b>Part 3: Project selection &amp; approach</b></p>
<ol style="list-style-type: none"> <li>8. Have you noticed a change in the number of companies investing in carbon credit producing projects to reach their climate targets in recent years?</li> <li>9. Does there seem to be a preference over investing in one specific type of project or a portfolio of projects?</li> <li>10. What types of projects seem to be the most popular amongst your clients?</li> <li>11. Have you noticed a change in the number of companies considering carbon-insetting as opposed to offsetting?</li> <li>12. What factors do you think are most important for a company to consider when deciding on the type of project to invest in?</li> </ol>
<p><b>Part 4: Sustainability impacts</b></p>
<ol style="list-style-type: none"> <li>13. Do you find specific sustainability impacts related to offsetting project to be important in influencing corporate decision-making?</li> <li>14. If so, how do you ensure that certain projects/ approach have the least negative sustainability impacts?</li> <li>15. What benefits and limitations do you see with afforestation/reforestation projects?</li> </ol>

## Appendix G: Stakeholder list










This appendix is intended for those readers who are less familiar with the stakeholders presented in Table 3-3.

Stakeholder	Details
	<ul style="list-style-type: none"> <li>▪ A global environmental NGO with the mission to “ensure the ability of the earth to nurture life in all its diversity”;</li> <li>▪ Well known for its campaigning and raising environmental issues to public knowledge such as climate change, overfishing, deforestation, commercial whaling, anti-nuclear issues;</li> <li>▪ General consultative status with the UN Economic and Social Council (Greenpeace International, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ An environmental &amp; conservation NGO with the mission to “conserve nature and reduce the most pressing threats to the diversity of life on Earth”;</li> <li>▪ Work with local communities; influence markets and policies towards sustainable practices; connects science with partners;</li> <li>▪ Partnerships with communities, companies, governments (WWF, 2020d).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ An NPO (non-profit organisation) pioneering finance for conservation;</li> <li>▪ Promotes sustainable forest management &amp; conservation, sustainable agriculture, clean water, climate action, protecting biodiversity &amp; strong communities (Forest Trends, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ An environmental NGO supporting companies, cities and states to disclose their environmental impact;</li> <li>▪ Involves environmental reporting and risk management to drive action towards a sustainable economy;</li> <li>▪ Carbon action initiative and programmes in: climate change, water, supply chain, forests and cities (CDP, 2020d).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ A collaboration between CDP, the UNGC, World Resources Institute and the WWF to assess and approve companies’ climate targets;</li> <li>▪ “The SBT initiative champions science-based target setting as a powerful way of boosting companies’ competitive advantage in the transition to the low-carbon economy” (SBTi, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ A standard and logo certification mark for climate and development interventions to help quantify, certify and maximise their impact.</li> <li>▪ Published and administered by the Gold Standard Foundation, a non-profit foundation</li> <li>▪ Designed to ensure that carbon credits are real and verifiable and that projects contribute to sustainable development (Gold Standard, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ The Verified Carbon Standards, or VCS, formally the Voluntary Carbon Standard certifies carbon emission reductions</li> <li>▪ Drive investments towards projects that reduce emissions, improve livelihoods and protect nature (Verra, 2020)</li> <li>▪ Also operates the Climate, Community and Biodiversity (CCB) Program.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Global consultancy offering sustainability financing solutions and services for businesses and governments world-wide;</li> <li>▪ Assist companies and governments in realising decarbonisation pathways across industries (South Pole, 2020a).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Global consultancy helping organisations develop and incorporate clean energy and GHG emission reduction strategies into their business operations;</li> <li>▪ Offer custom renewable energy and climate solutions to clients (3Degrees, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Global consultancy offering a range of advisory, consulting, outsourcing and technology services to commercial and public clients;</li> <li>▪ Offer sustainability consulting services to assist companies in developing and implementing their climate strategies</li> <li>▪ Navigant consulting was acquired by Guidehouse in 2019 (Guidehouse, 2020; Navigant Consulting, 2020).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Formerly 'Future Forests' and then 'The CarbonNeutral Company';</li> <li>▪ Pioneered the concept of offsetting through tree planting;</li> <li>▪ Work with clients worldwide to provide advice and solutions on carbon emissions reductions; renewable energy; water stewardship; supply chain resilience; protecting biodiversity; supporting the SDGs;</li> <li>▪ Provide quality assurance &amp; carbon offset projects; supply Green-e Energy certified Renewable Energy Certificates &amp; EKOenergy Guarantees of Origin;</li> <li>▪ Founding members of the International Carbon Reduction and Offset Alliance (ICROA) (Natural Capital Partners, 2020a).</li> </ul>

Source: 3Degrees, 2020; CDP, 2020; Forest Trends, 2020; FSC, 2020; Greenpeace International, 2020; Guidehouse, 2020; Natural Capital Partners, 2020; Rainforest Alliance, 2020; SBTi, 2020; South Pole, 2020; The Gold Standard, 2019; Verra, 2020; WWF, 2020.

## Appendix H: Interview List

	Position(s)	Organisation	Type of organisation	Date	Duration
A	Sustainability Manager		Multinational dairy cooperative	10/03/2020	40 minutes
B	Program director for climate, energy and oil in the Nordics		Environmental NGO	12/03/2020	30 minutes
C	CEO South Pole Sweden		Consultancy & carbon offsetting partner	27/03/2020	30 minutes
D	Sr Business Manager		Consultancy & carbon offsetting partner	30/03/2020	Responded to questions via email
E	Associate Director, & Managing Consultant		Management consultancy for public and commercial sectors	31/03/2020	1 hour
F	Forest and Climate Specialist		Environmental NGO	31/03/2020	30 minutes
G	Carbon program manager		Lighting manufacturer	21/04/2020	30 minutes
H	Sustainability Business Expert for Climate and Energy		Clothing-retail	23/04/2020	40 minutes
I	Head of Climate		Furniture manufacturer and distributor	29/04/2020	40 minutes

## Appendix I: Webinars

This appendix provides a list of the webinars the author registered for during this research.

Title	Host organisation	Speakers	Date Published
The outcomes of COP25 and implications for business	Natural Capital Partners	<ul style="list-style-type: none"> <li>▪ Natural Capital Partners</li> </ul>	9/01/2020
How Business is Taking Action to Reforest Europe	Natural Capital Partners	<ul style="list-style-type: none"> <li>▪ Microsoft</li> <li>▪ Nordic Leisure Travel Group</li> <li>▪ Staatbosbeheer (The Dutch Forestry Commission)</li> <li>▪ Forest Carbon</li> </ul>	17/09/2019
Absolute Zero: A Climate Strategy for Business Resilience	GreenBiz Group	<ul style="list-style-type: none"> <li>▪ Quantis</li> <li>▪ Microsoft</li> <li>▪ Gold Standard</li> </ul>	5/05/2020
Making Sense of Net Zero and Climate Positive	South Pole	<ul style="list-style-type: none"> <li>▪ South Pole</li> <li>▪ Gold Standard</li> </ul>	6/05/2020

## Appendix J: Data for Figures 6-5 & 6-6

This appendix provides the raw data used to create Figure 6-5 and Figure 6-6. In Table I-1, the ‘number’ column refers to how many companies referred to the categories or sub-categories in relation to their climate compensation activities. This was based on sustainability reports, corporate webpages, project information documents, interviews, and/or webinars. In Table I-2, the most common recommendations identified through interviews, practitioner reports, research papers, guidance documents and webinars are presented. The ‘number’ column refers to the number of times a practitioner mentioned the specific category or sub-category.

Table I-1: Frequency of sustainability issue and/ or co-benefits mentioned

Category	Sub-category	Number
Biodiversity	-	11
Wildlife	Animal health	1
	Threats to wildlife	1
Climate change	-	14
Energy	Fossil fuel/ energy use	7
	Air pollution	1
Land	Agriculture	1
	Deforestation	7
	Ecosystems	1
	Forest and land management	4
	Soil degradation	1
Water	Pollution	1
	Ocean health	1
	River health	1
	Water usage	2
Social benefits	Community development	7
	Human health	2
	Hunger	1
	Poverty	1
Engagement	Customer collaboration	2
	Employee engagement	2

Table I-2: Recommendations to ensure credible carbon claims

Category	Sub-category	Number
Align strategy with science	1.5-degree trajectory	5
	Ecological boundaries	1
	Science Based Targets	5
Be transparent about actions and reasons	-	4
Align mitigation approaches with value chain	-	5
Decarbonise own emissions first	-	8
Use high-quality standards	Gold Standard	4
	Verified Carbon Standard (VCS)	2
	CCBA	1
	ICROA	2
Supports SDG Agenda	-	2
Ensure additionality of projects	-	4
Involve key stakeholders	-	5